



# GLOBAL ATLAS FOR SOLAR AND WIND ENERGY

## – A Collaborative Resource For Renewable Energy

**T**he Global Atlas for Solar and Wind Energy project aims to create a collaborative internet-based Geographic Information System (GIS) for wind and solar resources that can direct and enhance cooperation on global scenarios and strategies and support decision-making, especially in areas where existing information is insufficient.

The idea of the Atlas, an initiative of the Clean Energy Ministerial's Solar and Wind Working Group, first took shape in a series of international workshops in 2010. The CEM, a 20-year initiative backed by the ministers of 24 countries to accelerate the global transition to clean energy, has already evaluated a prototype and is refining it to better represent user data needs and integrate additional tools and data sets.

IRENA is playing a lead role in the creation of the Atlas by working with other international institutions, initially UNEP, which is providing financial and in-kind resources. IRENA is also working to ensure that end-user needs, especially those of Member States, are fulfilled and the programme achieves its maximum impact on the deployment of renewable energy technologies

Many other categories of partners are involved in this ambitious project ranging from the lead countries of the CEM Multilateral Working Group (Denmark, Germany and Spain) who are financially contributing, or providing significant in-kind contributions, to data- and technology-solution providers, generally technical institutes, private or public organisations or owners of scientifically recognised datasets or processes. Also important are end-users, initially representatives of committed Member States, who provide recommendations on the services they require, as well as providing access to information, and supporting its collection.

### Why a Global Atlas?

An energy system with a high share of wind and solar energy resources needs to harvest these resources when, and where, they are available. The Atlas will aid in planning, by identifying the most promising sites on land or at sea, as well as indicating the potential of different renewable technologies and their most suitable locations. Its value as a global decision-making instrument is immense; the Atlas can direct and enhance cooperation on global scenarios and strategies at national, regional and local levels.

The concept of locating and mapping renewable energy resources is not new, and a vast amount of work has already been conducted to evaluate various renewable energy resources. Some parts of the globe have been extensively covered, but large areas, particularly in developing countries, have scarcely been investigated.

Existing maps and data collections of solar and wind energy resources are often narrowly focused, inconsistent, incompatible and limited. Some only provide physical information, such as insolation or wind speed. Others focus on economic and policy frameworks, such as support mechanisms. Different

### BASIC INFORMATION

The Global Atlas for Solar and Wind Energy is a collaborative, open-architecture project conducted by the Clean Energy Ministerial's Solar and Wind Working Group, with support from international institutions such as IRENA and UNEP, the participation of research institutes and private companies and the backing of Member countries anxious to increase the reliable deployment of renewables in their energy mix.

systems, websites and maps use various data sources, services, resolutions and geographic coverage. No existing system gives access to accurate, reliable and consistent information on renewable energy resources over the entire globe.

Data consistency is crucial when developing and comparing strategies, taking joint decisions, and speaking a common language. The vision underlying the Global Atlas for Solar and Wind Energy is to develop a system capable of consistently addressing each renewable energy technology at every geographic scale, and is able to act as a host to ongoing solar and wind energy networks and activities at a global level. The Global Solar and Wind Energy programme therefore intends to build on existing initiatives, adapt their outcome to suit global aims, and expand their international representativeness.

### Who will use the global atlas?

The potential spectrum of end-users for the Global Atlas for Solar and Wind Energy ranges from policy-makers and public authorities, investors, and developers, academics and the interested public. Each target audience has its own requirements in terms of data accuracy and services.

Policy-makers and public authorities in charge of planning their energy future will be looking for technical and economic potentials, and will also find corresponding economic, socio-economic, legal, regulatory and policy information highly valuable. Investors and developers will look to the Global Atlas for an overview of market potentials, site selection, and aggregated information and resource data for the development of new markets. Since the Global Atlas will be a trusted data source, developed by leading scientific institutes, a high level of confidence in its output can help investors raise money for more detailed assessments by commercial service providers.

### Fast Facts

- » When completed the Global Atlas will offer different services depending on various user-group requirement. These could include, among others:
- » Technical analysis of wind and solar potential at any geographic scale (e.g. global, continent, region, country);
- » Display of renewable energy options using common physical units, displaying the potential synergies between different technology options, with a facility that allows users to “zoom” into the maps;
- » Real-time calculation of specific indicators, e.g. CO<sub>2</sub> reductions, total investment, market volumes, and employment volumes;
- » The potential ability to download maps in an electronic format compatible with standard GIS systems; and
- » Documented levels or ranges of uncertainty, and information on data quality.

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