INFOCUS

The Global Atlas for Renewable Energy

Launched in 2013, IRENA's Global Atlas for Renewable Energy is an initiative aimed at facilitating access to data, analysis, and tools for assessing renewable energy resource potentials.

BACKGROUND

Since its inception, the Global Atlas has substantially contributed to increasing global awareness of renewable energy potential and opportunities.

The Global Atlas initiative provides the following suite of services free of charge to a worldwide audience:

»   **Online access to renewable energy resource maps.** Users can access maps via an online platform that presents data graphically in a map-based format. The Global Atlas contains maps for solar, wind, geothermal, biomass, and marine energy. Hydropower maps are expected to be added later this year. The platform supports printing and exporting map images, and downloading of raw data (in GeoTIFF format) for selected datasets.

»   **Tools for analysis.** The online platform also includes a number of integrated tools that allow users to, for example, generate wind statistics, estimate the electrical output of a proposed solar PV project, or view solar time series data.

»   **Pocket app.** Selected resource maps are available on-the-go via the Global Atlas pocket app, available for Android, iOS, BlackBerry, and Windows.

»   **Publishing and hosting renewable energy resource data.** IRENA works with researchers and institutes to publish their data and disseminate their findings globally.

»   **Training and expertise.** IRENA provides users with training classes and expertise on resource assessment on an as-needed basis. The team can also connect users with relevant experts in the field for additional assistance and data requests.

»   **Studies and analyses.** Users can access analyses prepared by IRENA based on the resource data in the Global Atlas. Regional studies include suitability analyses for Latin America, the Gulf Cooperation Council (GCC), and Southeast Europe (forthcoming).

HOW DOES THE GLOBAL ATLAS WORK?

The Global Atlas contains over 2000 datasets from 50 partners. As this is too much data to view at once, the datasets are organized into maps. Each map contains a number of datasets that are related, or that make sense to view together. When viewing a particular map, users can select and unselect each dataset to customize the view and overlay different types of information.

In addition to datasets on resource data like solar irradiation and wind speeds, most maps also contain supporting data like roads and locations of power lines and substations. Some of the maps focus on a specific country or region, and some show global data. Users can also use the data catalogue to search for and add datasets to a map, as well as to create and save their own maps.
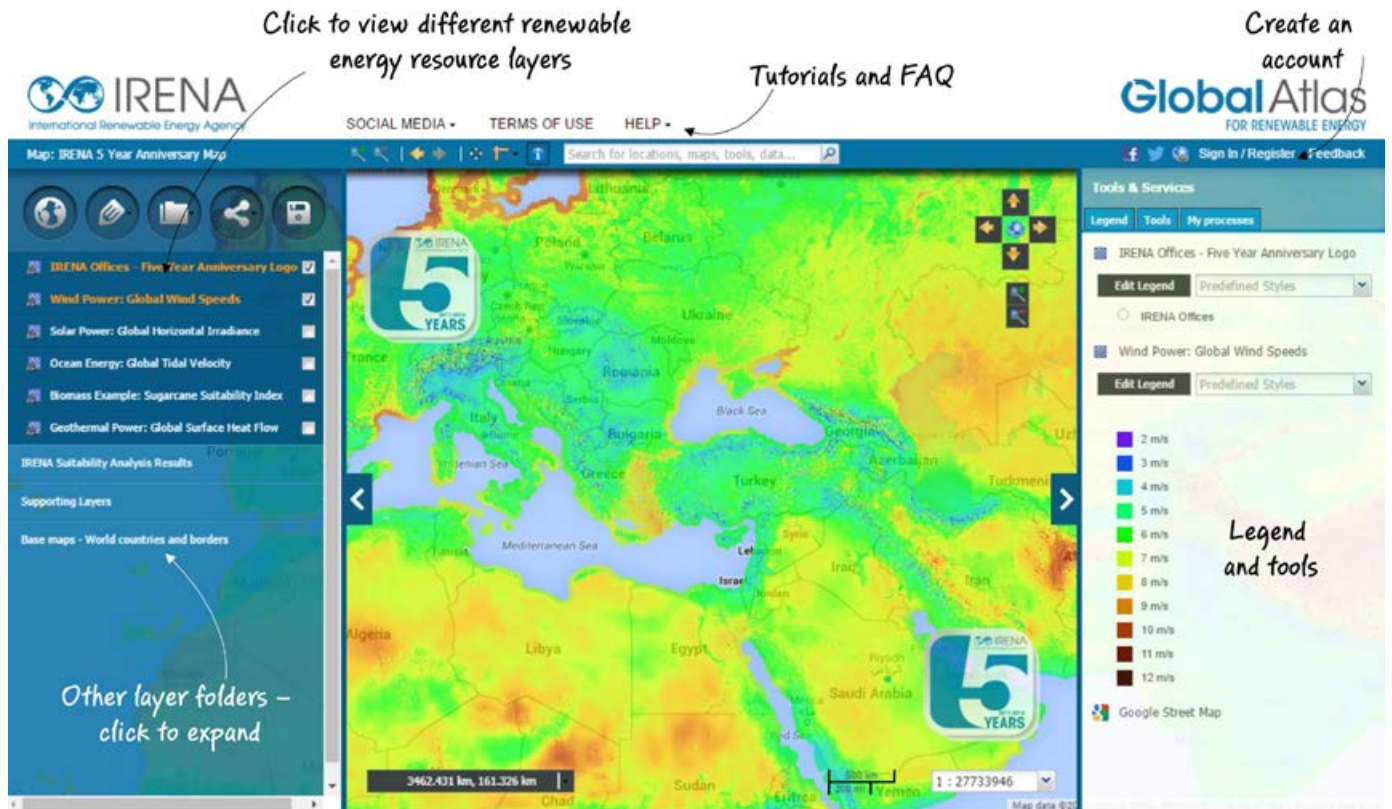
The Global Atlas online platform comprises a complete suite of services to support initial renewable resource mapping and assessment.

WHERE DOES THE DATA COME FROM?

The data in the Global Atlas is provided by partner organizations including governments, research institutes and private companies. IRENA does not verify the published data directly, but does ensure that it is produced using a valid methodology.

The Global Atlas provides access to many resource maps with different coverage areas and resolution, created using many different methodologies. In general, the data in the Atlas does not result from direct measurements, but is estimated using advanced data processing methods. These estimates are then validated using an accepted methodology, such as comparison with actual ground measurements. Additional information on the data quality approach of the Global Atlas can be found in this report.

HOW TO USE THE GLOBAL ATLAS

For guidance on how to use the online interface, users can visit the quick reference guide. Additional tutorials can be found on IRENA's website and on the Global Atlas YouTube Channel.

Recordings of recent Global Atlas webinars are also available online, including the launch of the Global Wind Atlas, the Global Wind Atlas Technical Webinar, and the Training Webinar on Downloading and Exporting Data.

A good place to start is the IRENA 5th Anniversary Edition Map, a basic map which contains global datasets on five renewable energy technologies.

A TRULY GLOBAL INITIATIVE: GLOBAL ATLAS FACTS

» **The online platform has been visited by over 120,000 users from over 200 countries since 2013.**

» **Global Atlas signatories include 67 countries, 8 multilateral initiatives, and 50 partners (technical institutes, companies and organisations).**
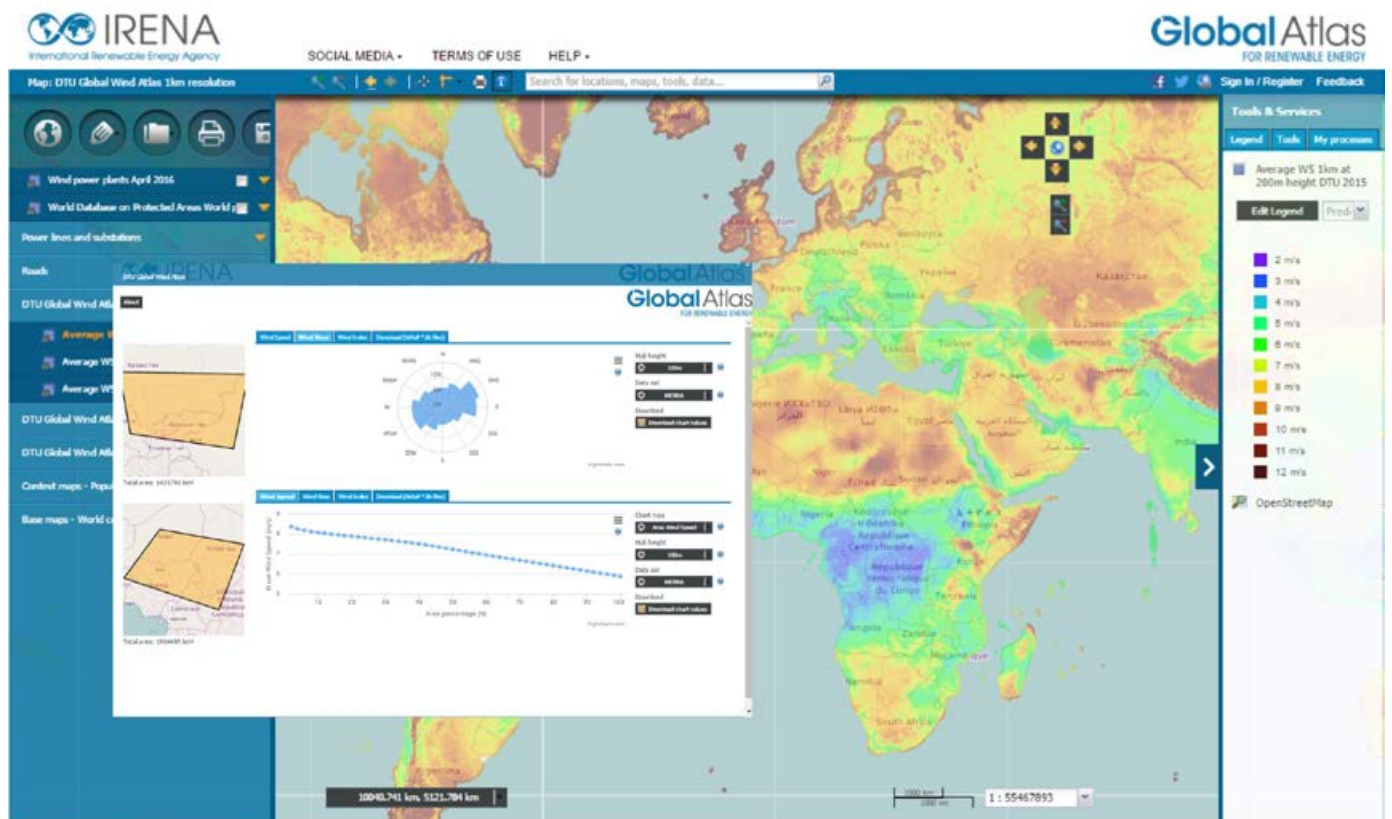
The Global Wind Atlas allows users to easily generate wind statistics for any location in the world.

WHO IS USING THE GLOBAL ATLAS?

» **Governments:** To assist with designing appropriate renewable energy policies, setting achievable targets, determining effective tariff rates, and selecting focus areas for renewable energy development.

» **Renewable energy developers, energy companies, and investors:** To prospect for the best areas to pursue project development and produce preliminary economic analyses.

» **Renewable energy analysts:** To forecast the share of renewables in the energy mix and generate custom maps for their publications.

» **Researchers:** To publish and verify their findings.

» **Teachers and students:** To educate the next generation about the potential contribution of renewables to the energy mix and develop the skills needed to support the renewables industry in the coming years.

» **The general public:** To learn more about renewable energy and where each type of technology is most effective.

HOW CAN IRENA MEMBERS GET INVOLVED?

» **Becoming a signatory to the Global Atlas:** Governments willing to contribute to the initiative by providing data or expertise are invited to sign the non-binding 'Statement of interest for the Global Renewable Energy Atlas'.

» **Informing their networks.** IRENA invites Members to ensure that stakeholders in their country are aware of the Global Atlas services by sharing this brief with government officials, private sector representatives, or others who might benefit from the Global Atlas.

RECOMMENDED MAPS

The Global Atlas provides a feature that allows users to search for maps by country, keyword, or renewable energy technology. IRENA's 5th Anniversary Edition Map includes global data on geothermal, marine, solar and wind energy, and an example of biomass data.

The following maps offer more detailed global data for each technology:

» **Biomass:** Suitability for bioenergy crops, suitability for oilseed bioenergy crops

» **Geothermal:** Heat flow map, Bouguer and Free Air Gravity Anomaly

» **Marine:** Tidal currents

» **Solar:** Vaisala global solar dataset

» **Wind:** DTU Global Atlas
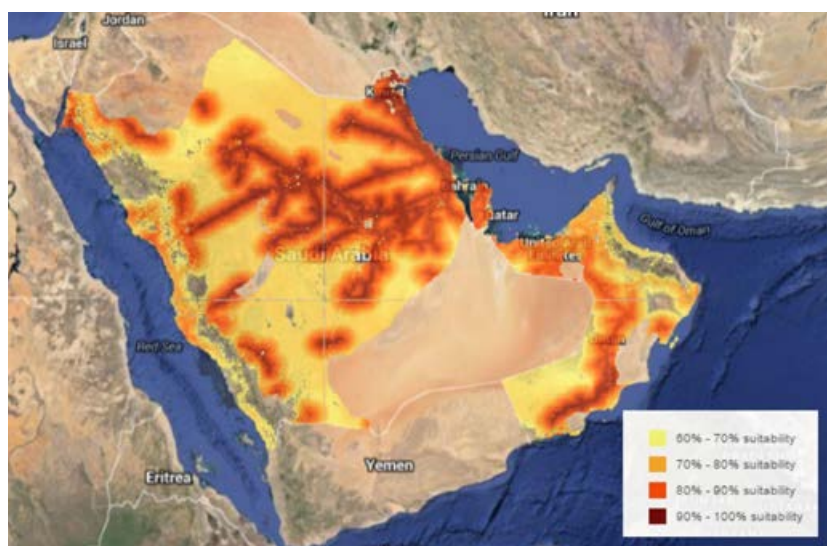
IRENA analyses available in the Global Atlas include maps that show estimated suitability for renewable energy development.

UPCOMING FEATURES

Later this year, IRENA expects to release the Global Atlas version 3.0, which will feature a newly designed search and landing page. Additional features are forthcoming, including a sustainability study on West Africa, due diligence studies and preliminary financial feasibility analyses for potential project sites, and new tools to simulate biomass energy generation and wind costing.

IRENA's Global Atlas partners

CONTACT DETAILS

• **E-mail:** potentials@irena.org

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Advanced Global Atlas users can join the Advisory Network to participate in surveys and focus groups to help shape forthcoming features and services.
Members interested to sign up can e-mail: **potentials@irena.org**