



  Overview of
Solar and Wind Maps



Middle East real relief. Elements of this image furnished by NASA©ixpert/Shutterstock



IRENA is an intergovernmental organisation that promotes the widespread adoption and sustainable use of all forms of renewable energy. The Global Atlas for Renewable Energy (Global Atlas) is an initiative coordinated by IRENA, aimed at closing the gap between nations having access to the necessary datasets, expertise and financial support to evaluate their national renewable energy potentials, and those countries lacking such elements.

The Global Atlas was initiated in partnership with the Multilateral Solar and Wind working group of the Clean Energy Ministerial. As of January 2014, 39 countries and more than 50 institutes and partners were contributing to the initiative.

The Global Atlas provides access to the datasets and methods to allow a first screening for areas of opportunity where further assessments can be of particular relevance. It enables the user to overlay information listed in a catalogue of more than 1,000 datasets, and to identify areas of interest for further prospection.

Starting with solar and wind, IRENA is mandated to expand the initiative to encompass all renewable energy resources, towards the creation of the first ever Global Renewable Energy Atlas.

This brochure presents an extract of the datasets hosted by the Global Atlas. All information published in this booklet is available through the Global Atlas interface. IRENA is continuously adding information to the system.

IRENA wishes to thank the data providers of the Global Atlas for making this publication possible.

Access the Global Atlas for Renewable Energy: <http://irena.org/globalatlas>

The designations employed and the presentation of materials herein do not imply the expression of any opinion whatsoever on the part of the International Renewable Energy Agency (IRENA) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. While this publication promotes the adoption and use of renewable energy, IRENA does not endorse any particular project, product or service provider.

Contents

The Global Atlas interface in a nutshell	6	☀️ Joint Research Center (JRC), European Commission — Africa	16
Global Atlas Maps	8	☀️ Kuwait Institute for Scientific Research (KISR) — Kuwait	17
Solar and wind data sources and coverage		☀️ Masdar Institute — United Arab Emirates and Qatar	18
☀️ 🌐 3TIER — global coverage	10	☀️ MINES ParisTech — Africa	19
🌐 Agence Nationale pour la Maitrise de l’Energie (ANME) — Tunisia	11	🌐 National Aeronautics and Space Administration (NASA) — global coverage	20
☀️ Australian Bureau of Meteorology (BOM) — Australia	12	☀️ NASA — global coverage	21
☀️ 🌐 ECOWAS Center for Renewable Energy and Energy Efficiency (ECREEE) — West Africa	13	🌐 National Renewable Energy Center (CENER) — Europe/Africa/Latin America	22
☀️ 🌐 Feasibility of Renewable Energy Resources in Mali (FRSE) — Mali	14	🌐 Offshore wind projects — Belgium	23
🌐 Institutos de Investigaciones Electricas (IIE) — Mexico	15	☀️ Renewable Energy and Energy Efficiency Institute (REEEI) — Namibia	24

☉ Ricerca Sistema Energetico (RSE) — Italy	25
☉ Sander + Partner — global coverage	26
☉ Secretariat of the Pacific Community (SPC) — North Pacific islands	27
☉ Solar Atlas for the Mediterranean — Mediterranean region	28
☉ South Africa Wind Atlas (WASA) — South Africa	29
☉ Swaziland National Energy Policy Development Project — Swaziland	30
☉ ☉ United Nations Environment Programme (UNEP) — Global coverage	31
☉ University of Zimbabwe — Zimbabwe	32
☉ Vortex — East Africa	33

Other datasets

ESA Land Cover 2009	34
Global Land Cover 2000	34
Population Density 2012	35
Protected Areas 2012	35
AICD — Africa grid map 2008	36
Topography 2008	36

Direct access to thematic maps

Maps registry	38-41
---------------	-------

Partners	42
----------	----

Latest Global Atlas publications	44
----------------------------------	----

Contacts	46
----------	----

THE GLOBAL ATLAS INTERFACE IN A NUTSHELL

The online Geographic Information System (GIS) enables users to visualise information on wind and solar resources, and to overlay additional information on, for example, protected areas, roads or infrastructure. The aim is to provide access to a set of information layers, which will enable users to highlight areas of opportunity for further prospecting. The platform allows users to create and save thematic maps. The Atlas interface will progressively integrate software and tools that will allow advanced energy or economic calculations for calculating the technical or/and economic potential of renewable energy.

The online GIS is freely accessible at:

<http://irena.masdar.ac.ae/>

User interface: it visualises GIS-based information, such as, renewable energy resources, infrastructures, population, protected areas. It allows the users to create and save customised maps. The interface loads layers from a catalogue of more than 1,000 datasets.

Layer: a file containing geographic information (map or map features) displayed through a GIS interface. Several layers can be superposed.

Map: sum of activated layers.

Legend and tools: the legend is displayed for each individual layer. Online tools are available to perform analysis in real time.

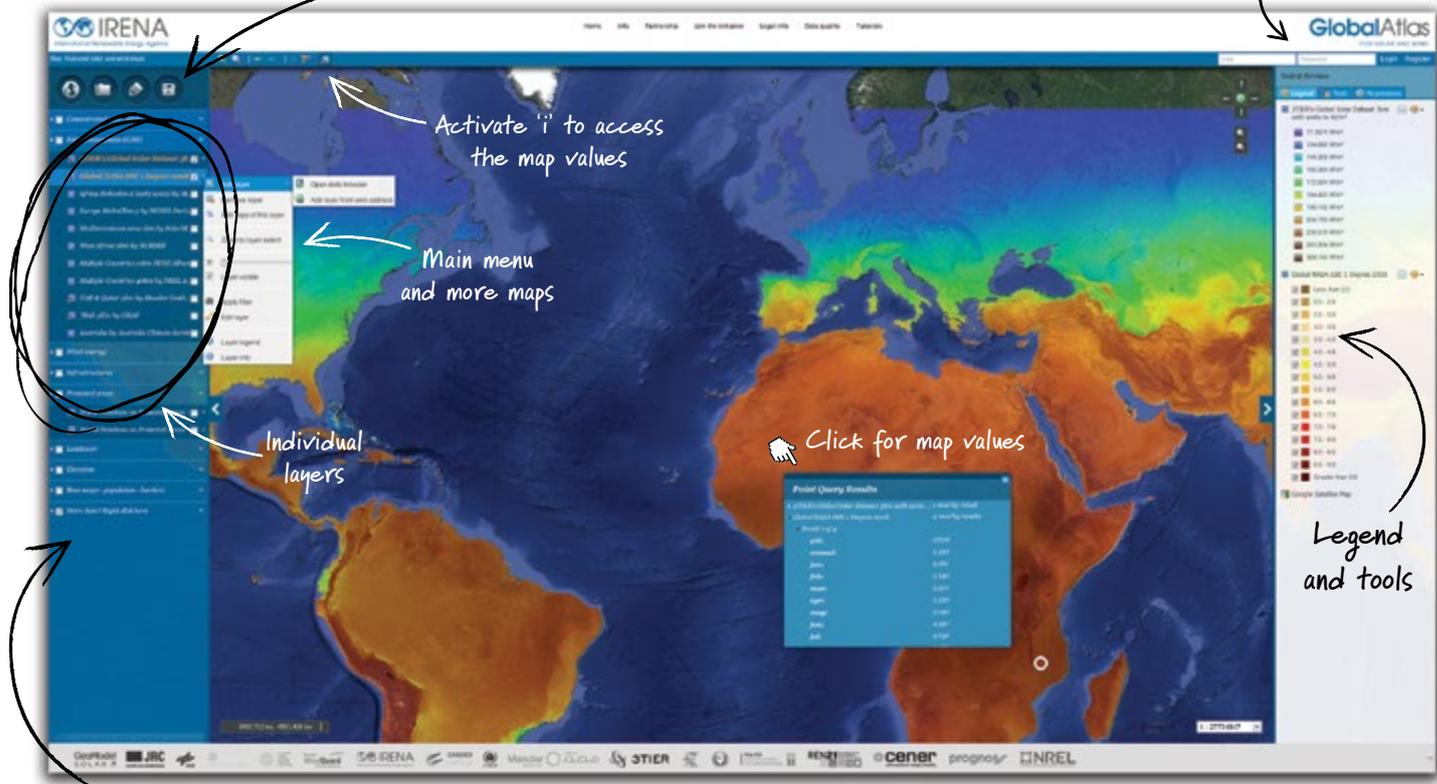
Menu bar:

-  create, edit maps and open the map registry
-  open the data browser, search amongst 1,000 datasets, add your own addresses
-  edit the title and description of the current map
-  save your work (requires login)

User interface

Search map registry, add data from the catalogue edit and save your map

Login and registration



Activate 'i' to access the map values

Main menu and more maps

Individual layers

Click for map values

Legend and tools

Layer folders - click to expand

Map - sum of activated layers

GLOBAL ATLAS MAPS

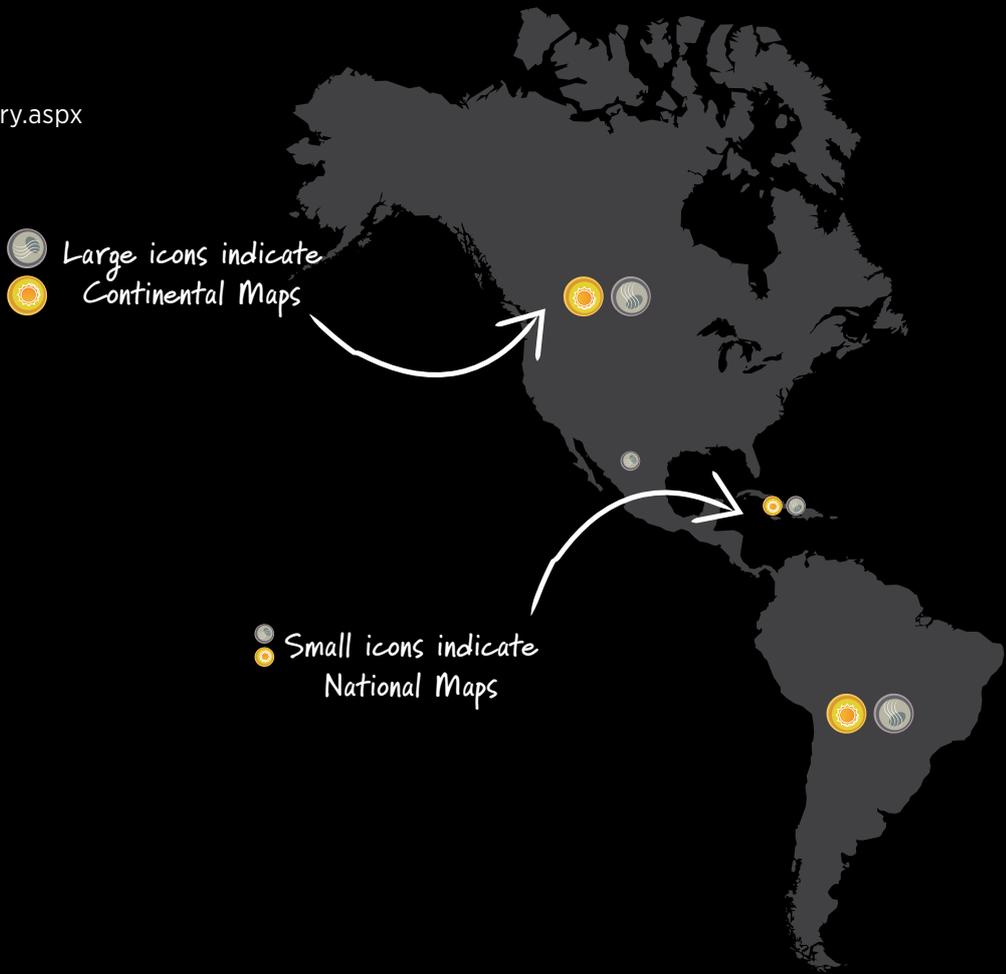
Direct access:

<http://irena.org/globalatlas/Map-Gallery.aspx>



 Large icons indicate
 Continental Maps

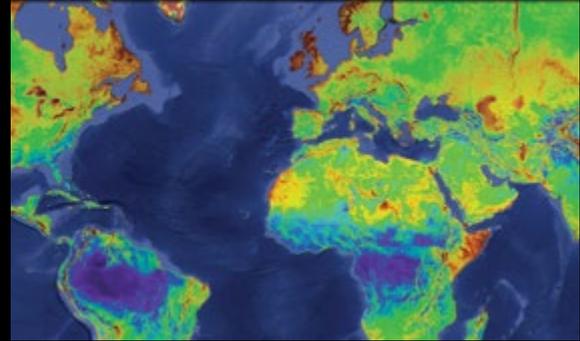
 Small icons indicate
 National Maps







3TIER



Geographic coverage: Global

Source: 3TIER

Website: www.3TIER.com

Direct access: <http://irena.masdar.ac.ae/?map=543>

Description: The Global Solar dataset compiles more than 11 years of data and was compared to 92 surface stations across the globe. The spatial resolution is 3km. The Global Wind Dataset provides the average annual wind speed at 80m. It is built from computer simulations of hourly values over a 10-year period. The wind

speeds were compared to observations from more than 4,000 meteorological stations around the globe from the National Centers for Environmental Prediction (NCEP) Automated Data Processing dataset, with a spatial resolution of approximately 5km.

Detailed description: www.3tier.com/static/ttcms/us/documents/publications/validations/3TIER_Global_Solar_Validation.pdf

Original website: www.3tier.com/en/about/publications/firstlook-global-wind-dataset-annual-mean-validation/



Agence Nationale pour la Maîtrise de l'Énergie (ANME)



Geographic coverage: Tunisia

Source: Agence Nationale pour la Maîtrise de l'Énergie (National Agency for Energy Management)

Website: www.anme.nat.tn

Direct access: <http://irena.masdar.ac.ae/?map=488>

Description: The project was financed by the Spanish Agency of International Cooperation for Development (AECID) and the Government of Navarra in collaboration with the Government of Tunisia through the National Agency for Energy Management (ANME).

Wind maps are generated in GIS format at 1km x 1km resolution at different heights: 10m, 60m, 80m, and 100m.



Australian Bureau of Meteorology (BOM)



Geographic coverage: Australia

Source: Australian Bureau of Meteorology

Website: www.bom.gov.au

Direct access: <http://irena.masdar.ac.ae/?map=406>

Description: Global solar exposure is the total amount of solar energy falling on a horizontal surface over a specified period. These monthly, seasonal and annual average daily datasets are based on 22 years of solar exposure data (1990-2011), derived from the Japan

Meteorological Agency and the Australian National Oceanographic & Atmospheric Administration satellite imagery, using a physical model developed by the Australian Bureau of Meteorology.

Detailed description: www.bom.gov.au/climate/averages/climatology/gridded-data-info/metadata/md_ave_sol_exp.shtml

Original website: www.bom.gov.au/jsp/awap/solar/index.jsp



ECOWAS Center for Renewable Energy and Energy Efficiency (ECREEE)



Geographic coverage: The Economic Community of West African States (ECOWAS)

Source: ECOWAS Center for Renewable Energy and Energy Efficiency

Website: www.ecreee.org

Direct access: Search 'ECREEE' through the Global Atlas Data Browser.

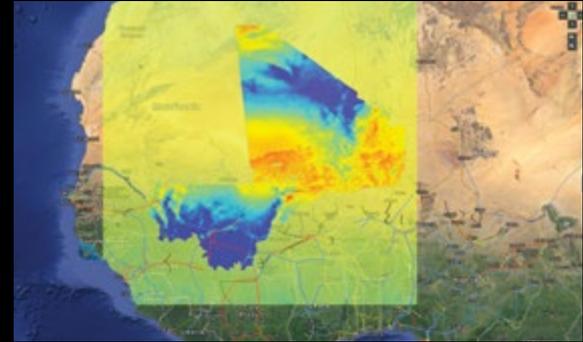
Description: The ECOWAS Observatory for Renewable Energy and Energy Efficiency (ECOWREX) provides decision makers, project developers, investors

and other stakeholders, with tailored information and decision support tools. The project was implemented by ECREEE and United Nations Industrial Development Organization (UNIDO). It is financed by the Global Environment Fund (GEF) with support from the Austrian Development Cooperation (ADC), the Spanish Agency for International Development Cooperation (AECID) and the U.S. Agency for International Development (USAID).

Detailed description and original website:
www.ecowrex.org



Feasibility of Renewable Energy Resources in Mali (FRSE)



Geographic coverage: Mali

Source: Feasibility of Renewable Energy Resources in Mali

Website: <http://frsemali.org>

Direct access: <http://irena.masdar.ac.ae/?map=416>

Description: The objective of the project is to provide basic planning information for enhanced use of sustainable energy in Mali. The project is carried out

by a group of university departments, research institutions and consultants led by the UNEP Risø Centre (URC) at the Technical University of Denmark (DTU) and conducted in cooperation with Direction Nationale de l'Énergie (DNE) and Centre National de l'Énergie Solaire et des Énergies Renouvelables (CNESOLER) in Mali.

Detailed description:

http://frsemali.org/research_papers.htm



Institutos de Investigaciones Eléctricas (IIE)



Geographic coverage: Mexico

Source: Institutos de Investigaciones Eléctricas (IIE) and Secretary of Energy (SENER)

Website: <http://sag01.iie.org.mx/eolicosolar/>

Direct access: <http://irena.masdar.ac.ae/?map=619>

Description: Preliminary wind resource maps for Mexico were made by using hourly wind speed data for the year 2005, obtained by means of the MM5 program at 50m height every 9km.

Extrapolation of wind speed at 80m was performed by using the power law with an exponent of one-seventh. Subsequently, the velocity values obtained every 9km were interpolated each 1km.

The wind resource maps are available on the IIE's website at 50m and 80m height on a monthly and annual basis, for wind speed and power density.

Detailed description:

<http://sag01.iie.org.mx/metadatos.htm>



Joint Research Center (JRC) - European Commission



Geographic coverage: Africa

Source: European Commission Joint Research Center

Website: www.euei.net/wg/african-renewable-energy-technology-platform-afretep

Direct access: <http://irena.masdar.ac.ae/?map=525>

Description: Solar photovoltaic (PV) analyses for Africa by the European Commission Joint Research Center:

- Modelled most economic rural electrification option (off-grid PV system, grid extension, mini-hydro, diesel generator).

- Comparison between estimated PV and diesel mini-grid costs in euros per kilowatt-hour (EUR/kWh).
- Estimated costs of electricity (EUR/kWh) delivered by a 15 kilowatt-peak off-grid PV system.
- Estimated costs of electricity (EUR/kWh) delivered by a diesel generator using the diesel price for each country and taking into account the cost of diesel transportation.

Detailed description: http://publications.jrc.ec.europa.eu/repository/bitstream/11111111/23076/1/reqno_jrc67752_final%20report%20.pdf



Kuwait Institute for Scientific Research (KISR)



Geographic coverage: Kuwait

Source: Kuwait Institute for Scientific Research

Website: www.kisr.edu.kw/

Direct access: <http://irena.masdar.ac.ae/?map=585>

Description: Monthly average values for five measurement stations in Kuwait for solar and wind parameters, humidity, and temperature. Measurements cover the period September 2012 – August 2013.

Detailed description: N/A



Masdar Institute



Geographic coverage: United Arab Emirates and Qatar
Source: Masdar Institute of Science and Technology

Website: www.masdar.ac.ae

Direct access: <http://irena.masdar.ac.ae/?map=401>

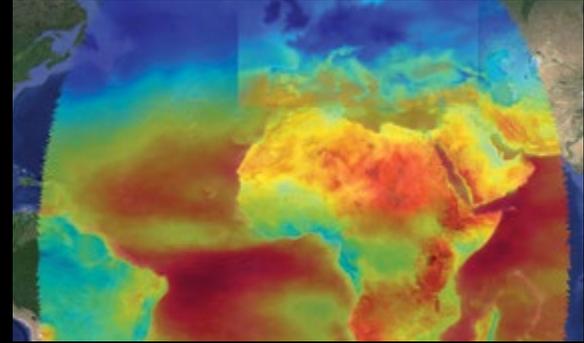
Description: The atlas makes solar and wind resource

maps easily available to end-users and stakeholders. The portal shows atlas maps over a base map and provides basic data management tools, including the possibility to access pixel values and to derive histograms of solar and wind resources.

Original website: <http://atlas.masdar.ac.ae/>



MINES ParisTech



Geographic coverage: Africa, Europe, Middle East, Latin America (part)

Source: MINES ParisTech

Website: www.oie.mines-paristech.fr/

Direct access: <http://irena.masdar.ac.ae/?map=529>

Description: The Heliosat method converts Meteosat satellite images into maps of solar radiation that are then feed into the HelioClim databases. HelioClim-1 cov-

ers the period 1985-2005. HelioClim-3 started in 2004 and is updated daily. These databases can be accessed through the SoDa Service. The SoDa Service delivers information on solar radiation (data, databases, algorithms, advanced applications). It can be accessed from the 'tools' section of the Global Atlas.

Detailed description and original website:

www.helioclim.org



National Aeronautics and Space Administration (NASA)



Geographic coverage: Global

Source: National Aeronautics and Space Administration

Website: www.nasa.gov

Direct access: <http://irena.masdar.ac.ae/?map=399>

Description: Modern-Era Retrospective Analysis for Research and Applications (MERRA) is a NASA reanalysis for the satellite era using a major new version of the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5). The Project focuses on

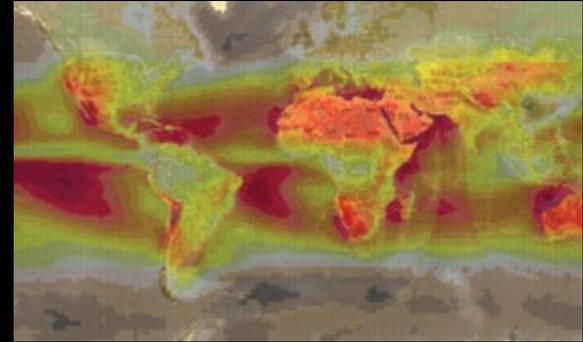
historical analyses of the hydrological cycle on a broad range of weather and climate time scales and places the NASA Earth Observing System (EOS) suite of observations in a climate context.

Detailed description and original website:

<http://gmao.gsfc.nasa.gov/merra/>



NASA



Geographic coverage: Global

Source: National Aeronautics and Space Administration

Website: www.nasa.gov

Direct access: <http://irena.masdar.ac.ae/?map=178>

Description: The Surface meteorology and Solar Energy (SSE) project is developing the commercial potential of NASA's cloud, radiation, and meteorology data by working closely with partners from government, commercial industry, educational, and non-profit organisations.

Detailed description: <https://eosweb.larc.nasa.gov/sse/>

Original website: <http://en.openei.org/appsSWERA/>



National Renewable Energy Center (CENER)



Geographic coverage: Latin America, Europe, Africa, Spain

Source: Centro Nacional de Energias Renovables (National Renewable Energy Center — Spain)

Website: www.cener.com

Direct access: <http://irena.masdar.ac.ae/?map=422>

Description: The atmospheric conditions are modelled using the SKIRON mesoscale model. SKIRON long-term simulation is launched to cover at least a three-year

period, generating hourly maps to simulate the whole domain. This methodology has been successfully validated with measurements spread over four continents.

Detailed description:

<http://secure.cener.com/documentos/wind-resources-map-mesoscale-PaperEwec08.pdf>



Offshore wind projects



Geographic coverage: Belgium offshore

Source: Data supplied by the Belgium Ministry of Economy

Website: www.mumm.ac.be/EN/Management/Sea-based/windmills.php

Direct access: <http://irena.masdar.ac.ae/?map=603>

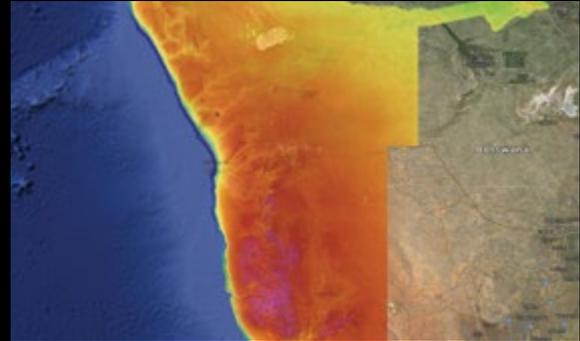
Description: The Global Atlas displays the bathymetry, offshore wind energy clusters and project locations for Belgium.

Detailed description: All information on offshore wind farms in Belgium is available at www.mumm.ac.be/EN/Management/Sea-based/windmills.php

Definition of the concession zones (available in French (FR) and Dutch (NL): www.creg.be/fr/greenelec1.html



Renewable Energy and Energy Efficiency Institute (REEEI)



Geographic coverage: Namibia

Source: Renewable Energy and Energy Efficiency
Institute

Website: www.reeei.org.na

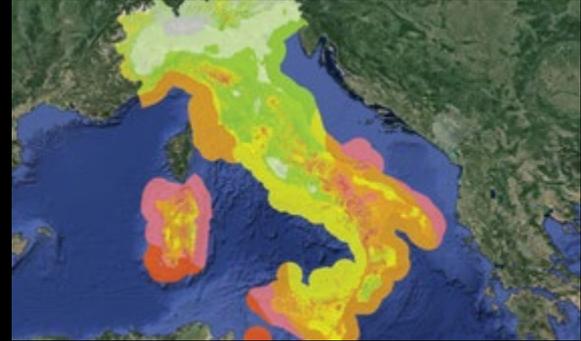
Direct access: <http://irena.masdar.ac.ae/?map=178>

Description: Direct normal irradiation values. Annual
and monthly long-term average, representing years
1994-2011. © 2012 GeoModel

Detailed description and original website:
<http://solargis.info>



Ricerca Sistema Energetico (RSE)



Geographic coverage: Italy

Source: RSE S.p.A.

Website: <http://atlanteeolico.rse-web.it>

Direct access: <http://irena.masdar.ac.ae/?map=617>

Description: Annual mean wind speed and specific production maps at four levels (25m 50m 75m and 100m) above ground and sea, with 1km spatial resolution, are available in a WebGIS for navigation and free download.

The maps have been calculated by means of the WINDS

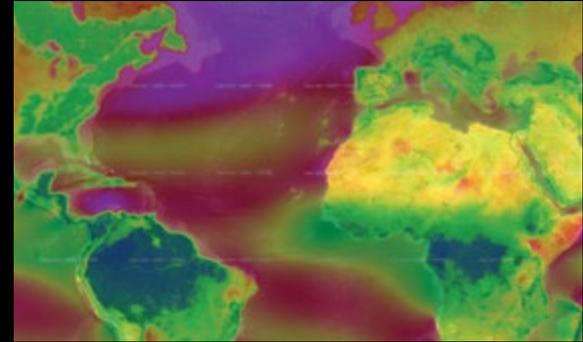
model of Genoa University. The onshore maps have been calibrated using more than 200 Met_stations data, whereas the offshore maps were calibrated with satellite data and the few direct measurement available.

Constraint maps can be overlapped. A “Performance Calculation” tool allows the user to perform a technically-economical evaluation of theoretical wind farms based on the dataset of the Wind Atlas.

Detailed description: <http://doc.rse-web.it/doc/doc-sfo-glia/12003699-315158/12003699-315158.html>



Sander + Partner



Geographic coverage: Global

Source: Sander + Partner

Website: www.sander-partner.com

Direct access: <http://irena.masdar.ac.ae/?map=180>

Description: Mean wind speed at 50m above ground estimated for the period 1980-2011. The mean wind speed is based on values for each hour during this 32 year period. Wind speeds change from one year to another. The maps only show the potentials, while the financial risks

of volatile winds remain unexplored.

A wind index shows the change of wind speed from one year to the next.

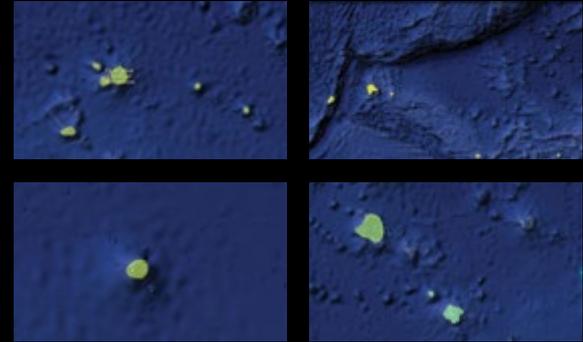
Register for free at www.sander-partner.com and view the local wind index for any location in the World.

Primary source of the data: NASA.

Primary citation: Rienecker *et al.* (2011), MERRA - NASA's Modern-Era Retrospective Analysis for Research and Applications. *Journal of Climate*, Vol 24, pp. 3624-3648.



Secretariat of the Pacific Community (SPC)



Geographic coverage: North Pacific region
Source: Secretariat of the Pacific Community

Website: www.spc.int

Direct access:

- » Chuuk: <http://irena.masdar.ac.ae/?map=447>
- » Pohnpei: <http://irena.masdar.ac.ae/?map=491>
- » Yap: <http://irena.masdar.ac.ae/?map=492>
- » Kosrae: <http://irena.masdar.ac.ae/?map=493>

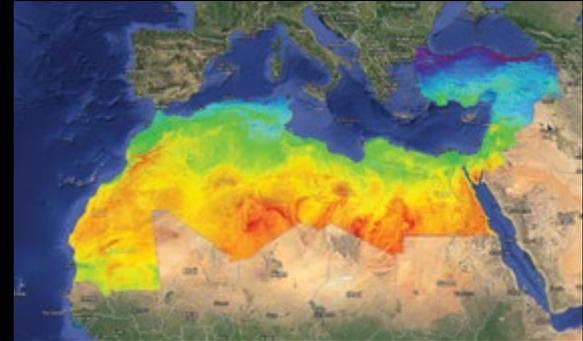
Description: The North Pacific ACP (African, Caribbean and Pacific) Renewable Energy and Energy Efficiency Project (North-REP) is a unique project aimed at developing the

energy sectors of the Federated States of Micronesia, the Republic of the Marshall Islands and Palau. These three SPC members have pooled the combined EUR 14,4 million from the European Development Fund 10 resources, and entrusted SPC to manage the project. This highlights the special partnership between a provider of technical assistance and services and its recipient member countries and territories. It also highlights the collaboration and vision in working together to improve the livelihoods of residents living in the north Pacific region.

Detailed description: www.spc.int/edd/fr/section-01/energy-overview/energy/77-north-pacific-acp-renewable-energy-and-energy-efficiency-project-north-rep



Solar Atlas for the Mediterranean



Geographic coverage: Mediterranean area.

Source: Solar-Med Atlas

Website: www.solar-med-atlas.org

Direct access: <http://irena.masdar.ac.ae/?map=178>

Description: The project brings high resolution (1km), long term coverage (20 years: 1991-2010) data for the whole target region. The resource data is derived from

Earth Observation satellite data, based on published and transparent methodologies, and the data has been validated with existing ground measurements in the region.

The database is provided by SOLEMI and Helioclim-3 (SoDa).

Detailed description:

www.solar-med-atlas.org/solarmed-atlas/about.htm



South Africa Wind Atlas (WASA)



Geographic coverage: South Africa

Source: South African National Energy Development Institute

Website: www.wasaproject.info

Direct access: <http://irena.masdar.ac.ae/?map=405>

Description: The Wind Atlas for South Africa (WASA) Project is an initiative of the South African Department of Energy (DoE) with the South African National Energy Development Institute (SANEDI) executing and managing WASA, and contracting the Implementation Partners (Council for Scientific and Industrial Research, South African Weather Service, University of Cape Town — Climate

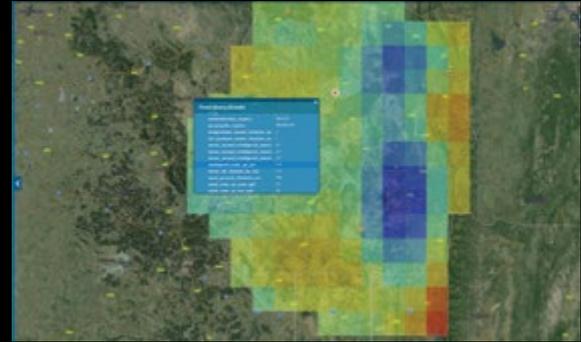
Systems Analysis Group, and the Technical University of Denmark — Wind Energy). The main objective of WASA, through capacity development and research cooperation, is to develop and employ numerical (modelled) wind atlas methods, as well as develop capacity to enable long term planning of large-scale exploitation of wind power in South Africa. This will include dedicated wind resource assessments and siting tools for planning purposes, *i.e.*, verified with physical wind measurements numerical (modelled) Wind Atlas, Extreme Wind Atlas, high resolution Wind Resource map and database for South Africa.

Detailed description:

www.wasaproject.info/about_wind_energy.html



Swaziland National Energy Policy Development Project



Geographic coverage: Swaziland

Source: Swaziland National Energy Policy Development Project

Website: None

Direct access: <http://irena.masdar.ac.ae/?map=299>

Description: Wind measurements were taken from five measurement stations in Swaziland. The data was collected between May 2001 and April 2002 under the

wind measurement project, which was part of the Swaziland National Energy Policy Development Project and supported by the Danish Co-operation for Environment and Development (DANCED).

Detailed description: http://irena.masdar.ac.ae/docs/Wind_Measurements_in_Swaziland_Final.pdf



United Nations Environment Programme (UNEP)



Geographic coverage: Global

Source: UNEP, Solar and Wind Resource Assessment (SWERA)

Website: <http://en.openei.org/apps/SWERA/>

Direct access: Search 'SWERA' through the Global Atlas Data Browser to access the data archive.

Description: The Solar and Wind Energy Resource Assessment (SWERA) started in 2001 to advance the large scale use of renewable energy technologies, by increasing the availability and accessibility of high quality solar and wind resource information. SWERA began as a pilot project with funding from the Global Environment Facility

(GEF) and managed by the United Nations Environment Programme's (UNEP) Division of Technology, Industry and Economics (DTIE) in collaboration with more than 25 partners around the world. With the success of the project in 13 pilot countries SWERA expanded in 2006 into a full programme.

SWERA provides high quality information on renewable energy resources for countries and regions around the world, together with the tools to utilise the data and facilitate renewable energy policies and investments.

Detailed description: <http://en.openei.org/wiki/SWERA/About>



University of Zimbabwe



Geographic coverage: Zimbabwe

Source: T. Hove, E. Manyumbu and G. Rukweza. “Developing an improved global solar radiation map for Zimbabwe through correlating long-term ground- and satellite-based monthly clearness index values”.

Accepted for publication in Renewable Energy, Elsevier, on 15/10/2013.

Website: None

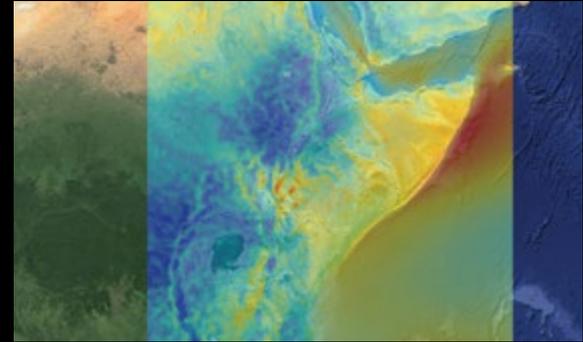
Direct access: <http://irena.masdar.ac.ae/?map=620>

Description: Global solar radiation map for Zimbabwe obtained through correlating long-term ground- and satellite-based monthly clearness index values.

Detailed description: http://irena.masdar.ac.ae/docs/Solar_radiation_map_Zimbabwe_T_Hove_E_Manyumbu_G_Rukweza.pdf



Vortex



Geographic coverage: Sample on East Africa

Source: Vortex

Website: www.vortex.es

Direct access: <http://irena.masdar.ac.ae/?map=180>

Description: Data collected between the years 1992 and 2011, at 80m high, gives mean wind speeds, as generated by Vortex based on NCEP reanalysis data and downscaled using the Weather Research and Forecasting model (WRF), providing up to 9km resolution for

pre-screening qualitative assessment purposes only.

The data forms the basis for Vortex commercial products of 3km resolution, validated for the temporal variability, and 100km resolution for site-scale values.

Detailed description: www.wrf-model.org



ESA Land Cover 2009

The European Space Agency's (ESA) GlobeCover is a global land cover map that has been produced in an automatic and global way, and is associated with a legend defined and documented using the UN Land Cover Classification System (LCCS).

More: <http://due.esrin.esa.int/globcover/>

Global Land Cover 2000

Produced by the European Commission's Joint Research Center. The Global Land Cover 2000 Project (GLC 2000) provides for that year, a harmonised land cover database over the whole earth.

More: <http://bioval.jrc.ec.europa.eu/products/glc2000/glc2000.php>



Population Density 2012

The LandScan 2012 Global Population Database was developed by Oak Ridge National Laboratory (ORNL) for the United States Department of Defense (DoD).

More: <http://web.ornl.gov/sci/landscan/>

Protected Areas 2012

The World Database on Protected Areas (WDPA) is the most comprehensive spatial dataset on the world's marine and terrestrial protected areas, produced through a joint initiative of the International Union for the Conservation of Nature (IUCN) and the United National Environment Programme (UNEP).

More: www.wdpa.org



AICD - Africa grid map 2008

The Africa Infrastructure Country Diagnostic (AICD) in 2008 produced a grid map. The database is hosted by the African Development Bank.

More: www.infrastructureafrica.org



Topography 2008

It provides terrain maps that show the elevation above sea level on the land, and depth of the ocean and sea bed. Data is derived from (SRTM-30) Shuttle Radar Topography Mission version 2 © 2000-2006; SRTM Mission SRTM30 plus © 2008; J.J. Becker, D.T. Sandwell, CleanTOPO2 © 2008; T. Patterson, post-processing and cartography by GeoModel Solar Resolution: 00:00:30 Terrain maps.

More: www2.jpl.nasa.gov/srtm/

DIRECT ACCESS TO THEMATIC MAPS

The Global Atlas allows users to save maps under their personal profile. As of December 2013, more than 600 maps are saved in the system. A number of maps were published by IRENA for the purpose of illustrating specific datasets, or specific projects. New maps are created on a regular basis. Contact: potentials@irena.org

Access:

From the  'Open map' menu of the Global Atlas interface: <http://irena.masdar.ac.ae/>

From the map gallery of the Global Atlas website: <http://irena.org/globalatlas/Map-Gallery.aspx>

Maps registry (1)

Map title	Direct access link
Featured solar and wind maps	http://irena.masdar.ac.ae/?map=178
Wind resource maps of the Global Atlas	http://irena.masdar.ac.ae/?map=180
Swaziland map - solar and wind data	http://irena.masdar.ac.ae/?map=299
Somalia map - solar and wind data	http://irena.masdar.ac.ae/?map=301
Ethiopia map - solar and wind data	http://irena.masdar.ac.ae/?map=312
Uganda map - solar and wind data	http://irena.masdar.ac.ae/?map=315
Serbia map - solar and wind data	http://irena.masdar.ac.ae/?map=317
Mongolia map - solar and wind data	http://irena.masdar.ac.ae/?map=318
Sudan map - solar and wind data	http://irena.masdar.ac.ae/?map=321

Maps registry (2)

Map title	Direct access link
Papua New Guinea - wind data	http://irena.masdar.ac.ae/?map=324
Zambia map - solar data	http://irena.masdar.ac.ae/?map=338
Yemen map - solar and wind data	http://irena.masdar.ac.ae/?map=382
Full Merra dataset	http://irena.masdar.ac.ae/?map=399
United Arab Emirates - national solar atlas	http://irena.masdar.ac.ae/?map=401
Cuba map - solar and wind data	http://irena.masdar.ac.ae/?map=404
The Wind Atlas for South Africa (WASA)	http://irena.masdar.ac.ae/?map=405
Australia map - solar data	http://irena.masdar.ac.ae/?map=406
Mali map - solar and wind data	http://irena.masdar.ac.ae/?map=416
Wind maps 5 and 10km by CENER	http://irena.masdar.ac.ae/?map=422

Maps registry (3)

Map title	Direct access link
Secretariat of the Pacific Community Chuuk map solar data	http://irena.masdar.ac.ae/?map=447
Tunisia map - SolarMed atlas and national wind atlas	http://irena.masdar.ac.ae/?map=488
Secretariat of the Pacific Community Pohnpei map solar data	http://irena.masdar.ac.ae/?map=491
Secretariat of the Pacific Community Yap map solar data	http://irena.masdar.ac.ae/?map=492
Secretariat of the Pacific Community Kosrae map solar data	http://irena.masdar.ac.ae/?map=493
Opportunity areas for grid connected and off grid wind and solar PV in ECOWAS	http://irena.masdar.ac.ae/?map=507
African maps from the European Commission Joint Research Center	http://irena.masdar.ac.ae/?map=525

Maps registry (4)

Map title	Direct access link
Solar Map from HelioClim3v4-MC for 2005	http://irena.masdar.ac.ae/?map=529
3TIER global wind and solar datasets	http://irena.masdar.ac.ae/?map=543
Kuwait solar measurement stations	http://irena.masdar.ac.ae/?map=585
Evolution of the Population Density between 2011 and 2012	http://irena.masdar.ac.ae/?map=586
Belgium offshore wind farms	http://irena.masdar.ac.ae/?map=603
Wind Atlas of Italy	http://irena.masdar.ac.ae/?map=617
Wind Atlas of Mexico	http://irena.masdar.ac.ae/?map=619

IRENA'S PARTNERS IN THE GLOBAL ATLAS INITIATIVE



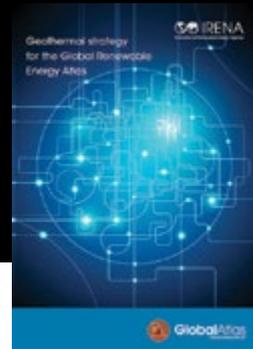


LATEST GLOBAL ATLAS PUBLICATIONS

View all Global Atlas publications at:

<http://irena.org/globalatlas/Publication.aspx>

- » Insights from Interviews, a Survey, and a Workshop with Potential End-Users of the Global Atlas for Solar and Wind Energy
- » Unleashing the wind potential in ECOWAS: Seeking areas of opportunity for grid-connected and decentralised wind energy applications
- » Unleashing the solar potential in ECOWAS: Seeking areas of opportunity for grid-connected and decentralised PV applications
- » Data quality for the Global Renewable Energy Atlas – Solar and Wind (Concept paper)
- » Geothermal strategy for the Global Renewable Energy Atlas





<http://irena.org/globalatlas>



Potentials@irena.org



[GlobalAtlasSolarandWind](#)



GlobalAtlas

FOR RENEWABLE ENERGY



<http://irena.org/globalatlas>



IRENA Headquarters
CI Tower, Khalidiyah
P.O. Box 236, Abu Dhabi
United Arab Emirates

www.irena.org

Copyright © IRENA 2014