The Global Atlas for Solar and Wind Energy

WORLD BANK ENERGY DAYS 2013

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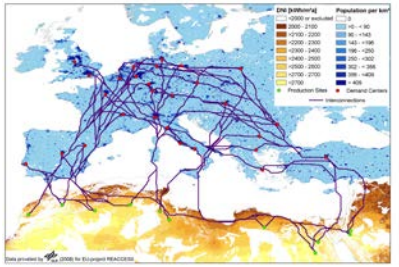
German Aerospace Center (DLR), Stuttgart

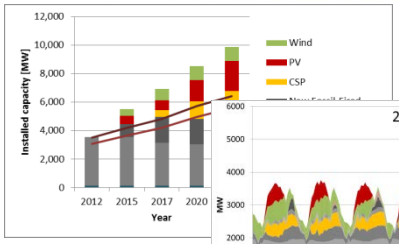
DLR - Who we are

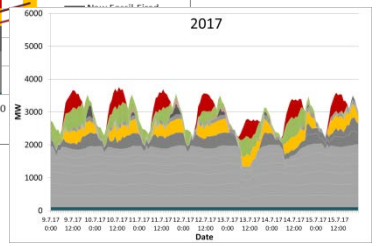
Research Areas

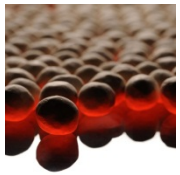
- Aeronautics
- Space Research and Technology
- Transport
- Energy
- Space Administration
- Project Management Agency

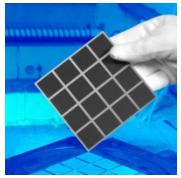
- Solar Research
- Wind Energy Research
- Systems Analysis
- Thermal & Chemical Storage
- High & low Temp. Fuel Cells
- Combustion & Gas Turbine Technologies

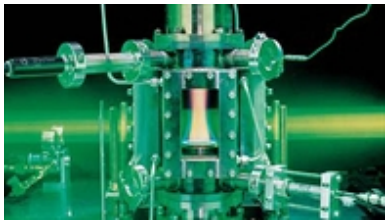












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Background of the Global Atlas

- The Multilateral Working Group on Solar and Wind Energy of the Clean Energy Ministerial Process identified a Global Atlas for Solar and Wind Energy as **a need for the successful deployment of renewable energies**.

- IRENA now acts as a secretariat and governs the process.

- DLR coordinates the technical team (NREL, Mines-ParisTech, Masdar)

- Launch of the Global Atlas at the IRENA General Assembly in Abu Dhabi in January 2013

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Why a Global Atlas for Solar and Wind Energy?

- Good resource data is the planning infrastructure for successful deployment of renewable energy technologies

- The Global Atlas shall be the **freely accessible central hub** for high quality renewable resource data and information about its proper use.

- Bridge the gap between nations having access to the necessary funding, technologies, and expertise to evaluate their national potentials, and those deprived of those elements.
  - Access to data and methods
  - Access to training materials and courses
  - Access to a network of experts

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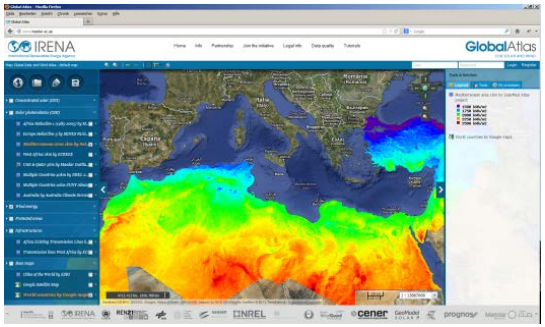
Networking with Collaborative Information Systems
Web-GIS



user interfaces

Catalog

data provider

Solar resources A (e.g. DLR)

data provider

Solar resources B (e.g. NREL)

data provider

data provider

geographical data, land use, infrastructure, etc. (e.g. public agencies)

Communication with open and standardized internet protocols

Policy data base
e.g. IEA, UNEP, REN21

set up of the architecture within the framework of GEOSS

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Participating Countries

Albania, Australia, Belgium, Denmark, Egypt, Ethiopia, France, Gambia, Germany, Grenada, Honduras, India, Iraq, Israel, Kuwait, Lithuania, Mali, Mexico, Mongolia, Nicaragua, Niger, Nigeria, Norway, Peru, Qatar, Saudi Arabia, Senegal, Seychelles, South Africa, Spain, Swaziland, Switzerland, Tunisia, UAE, Uganda, UK, Uruguay, USA, Yemen.

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Technical partners and data providers

Partner projects and multilateral initiatives

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www.irena.org/GlobalAtlas

Training Material

Map interface

Search data sources

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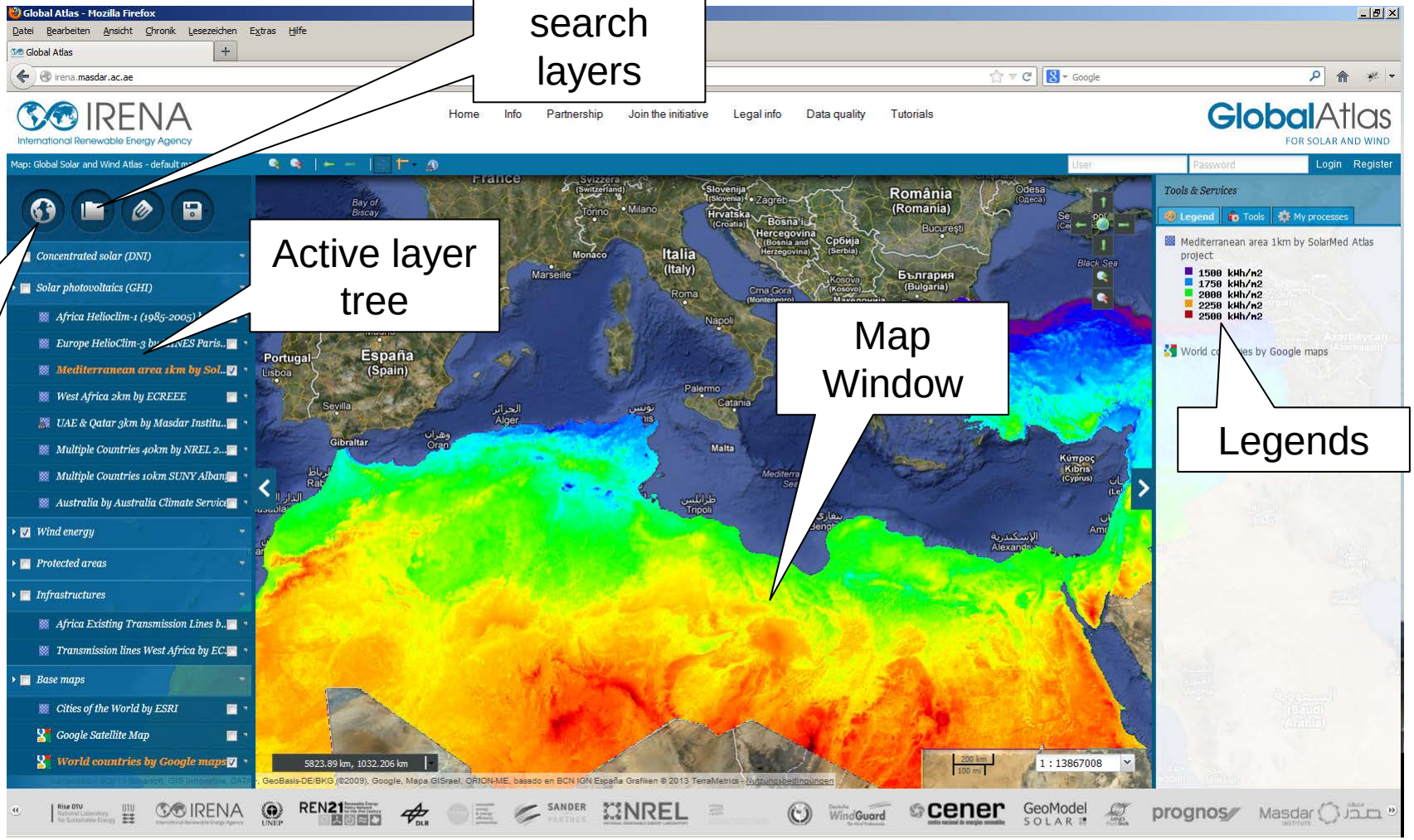
Map Interface



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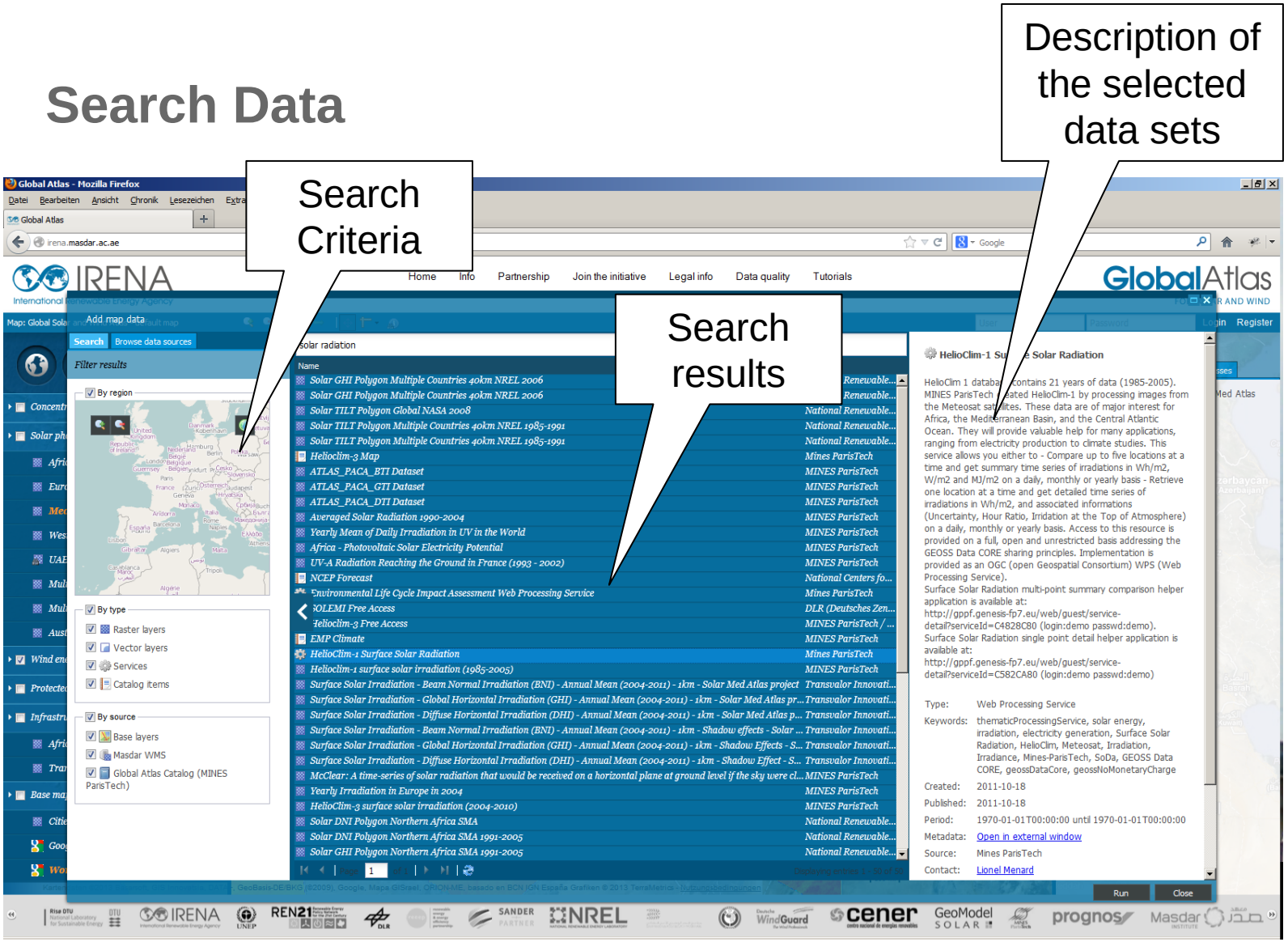
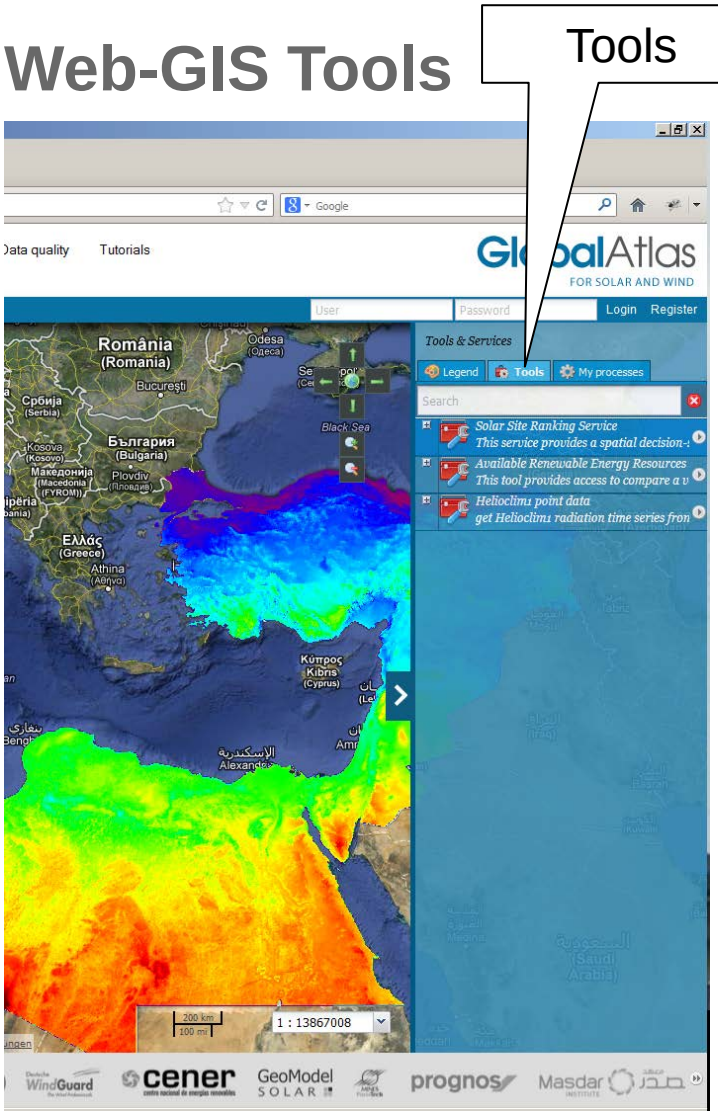
Search Data

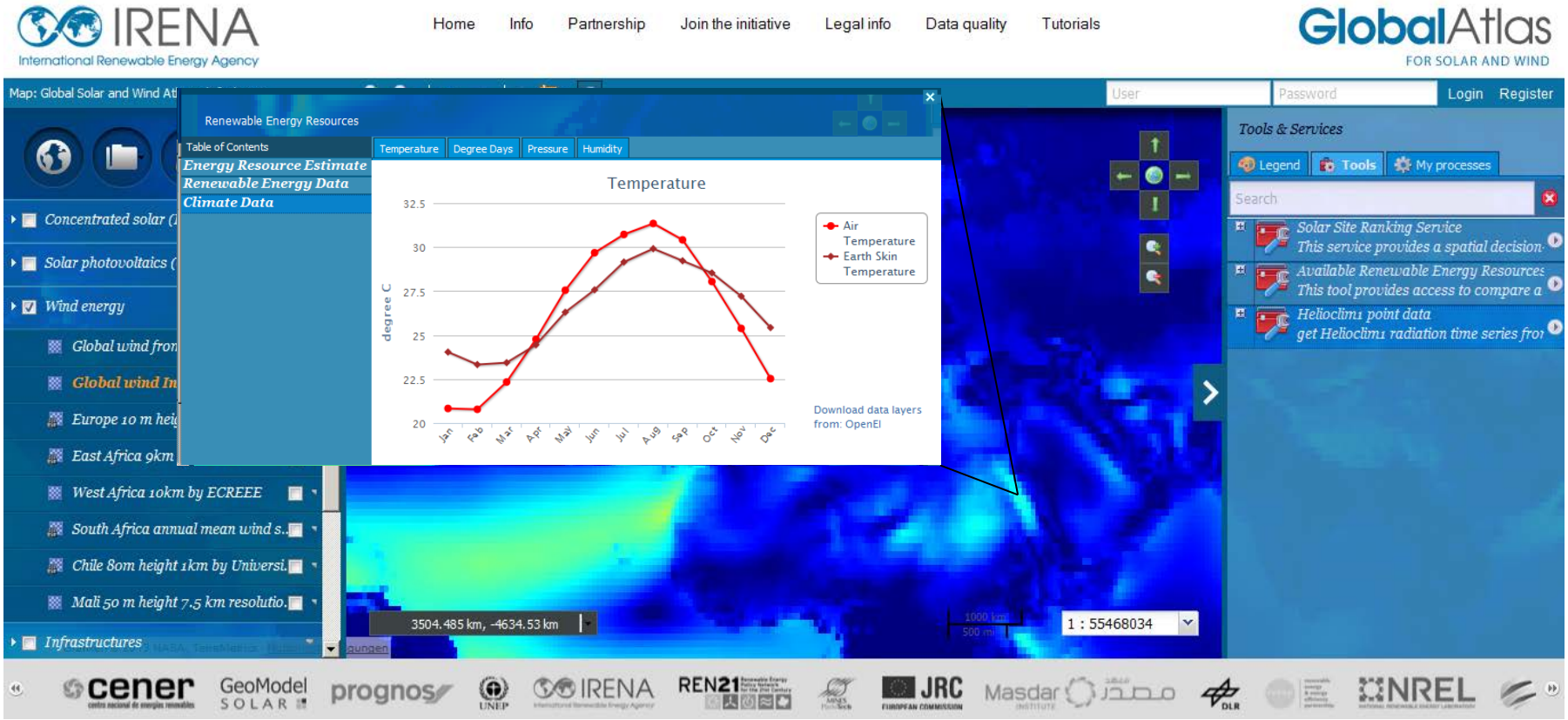

Description of the selected data sets
Search Criteria
Search results
Global Atlas - Mozilla Firefox
IRENA
Home
Info
Partnership
Join the initiative
Legal info
Data quality
Tutorials
GlobalAtlas
Add map data
Search
Browse data sources
Filter results
By region
By type
Raster layers
Vector layers
Services
Catalog items
By source
Base layers
Masdar WMS
Global Atlas Catalog (MINES ParisTech)
solar radiation
Name
Solar GHI Polygon Multiple Countries 40km NREL 2006
Solar TILT Polygon Global NASA 2008
Solar TILT Polygon Multiple Countries 40km NREL 1985-1991
Helioclim-3 Map
ATLAS_PACA_BTI Dataset
ATLAS_PACA_GTI Dataset
ATLAS_PACA_DTI Dataset
Averaged Solar Radiation 1990-2004
Yearly Mean of Daily Irradiation in UV in the World
Africa - Photovoltaic Solar Electricity Potential
UV-A Radiation Reaching the Ground in France (1993 - 2002)
NCEP Forecast
HelioClim-1 Surface Solar Radiation
Helioclim-1 surface solar irradiation (1985-2005)
EMP Climate
Yearly Irradiation in Europe in 2004
HelioClim-3 surface solar irradiation (2004-2010)
Solar DNI Polygon Northern Africa SMA
Solar DNI Polygon Northern Africa SMA 1991-2005
Solar GHI Polygon Northern Africa SMA 1991-2005
HelioClim-1 Surface Solar Radiation
Run
Close

Web-GIS Tools

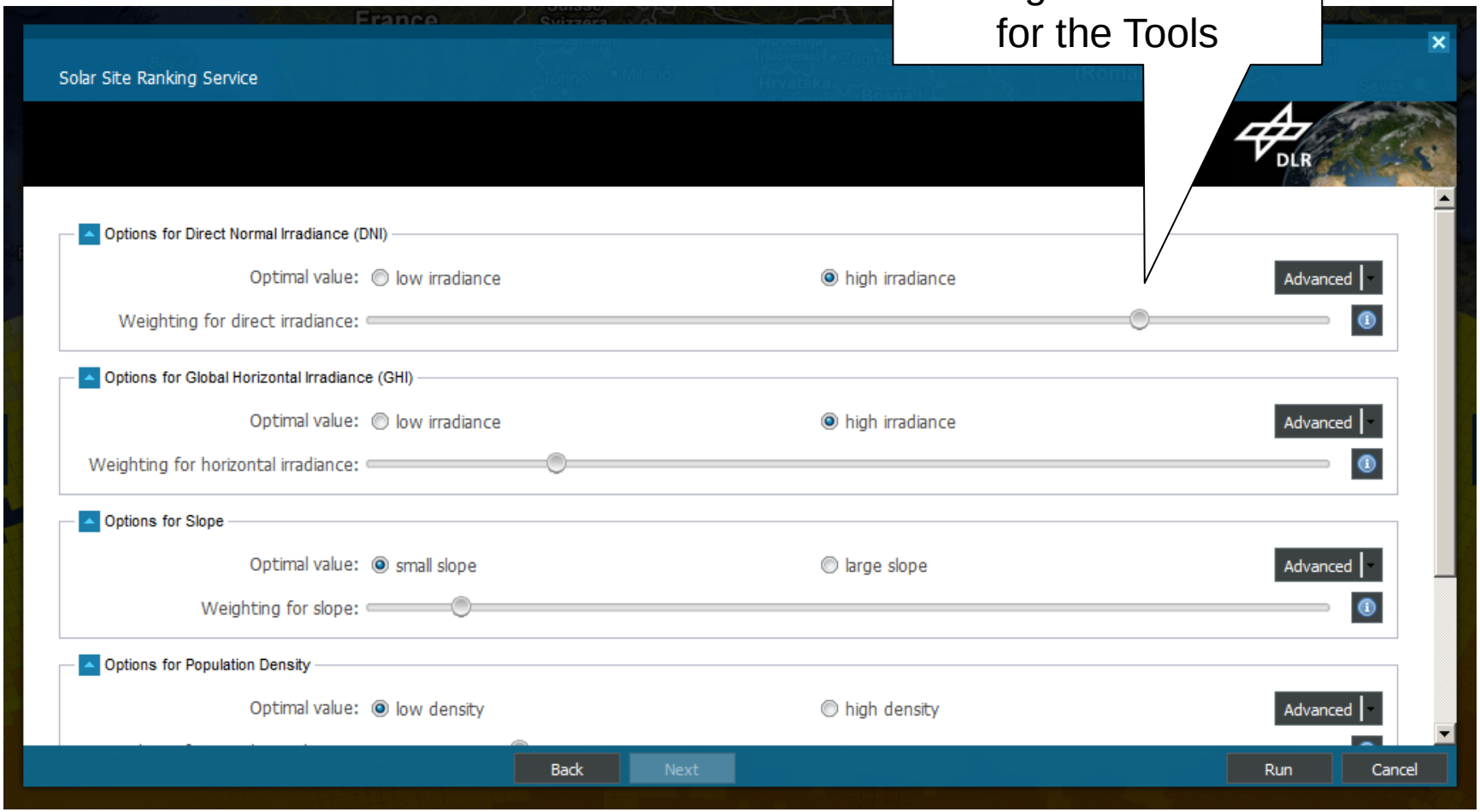


- Tools can be used
  - to extract more detailed information from the data sources
  - Processing of the data for further analysis
- Existing tools so far:
  - Solar Site Ranking
  - Available RE Resources
  - Time Series Point Query
- New tools will be developed based on use experience and end user feedback

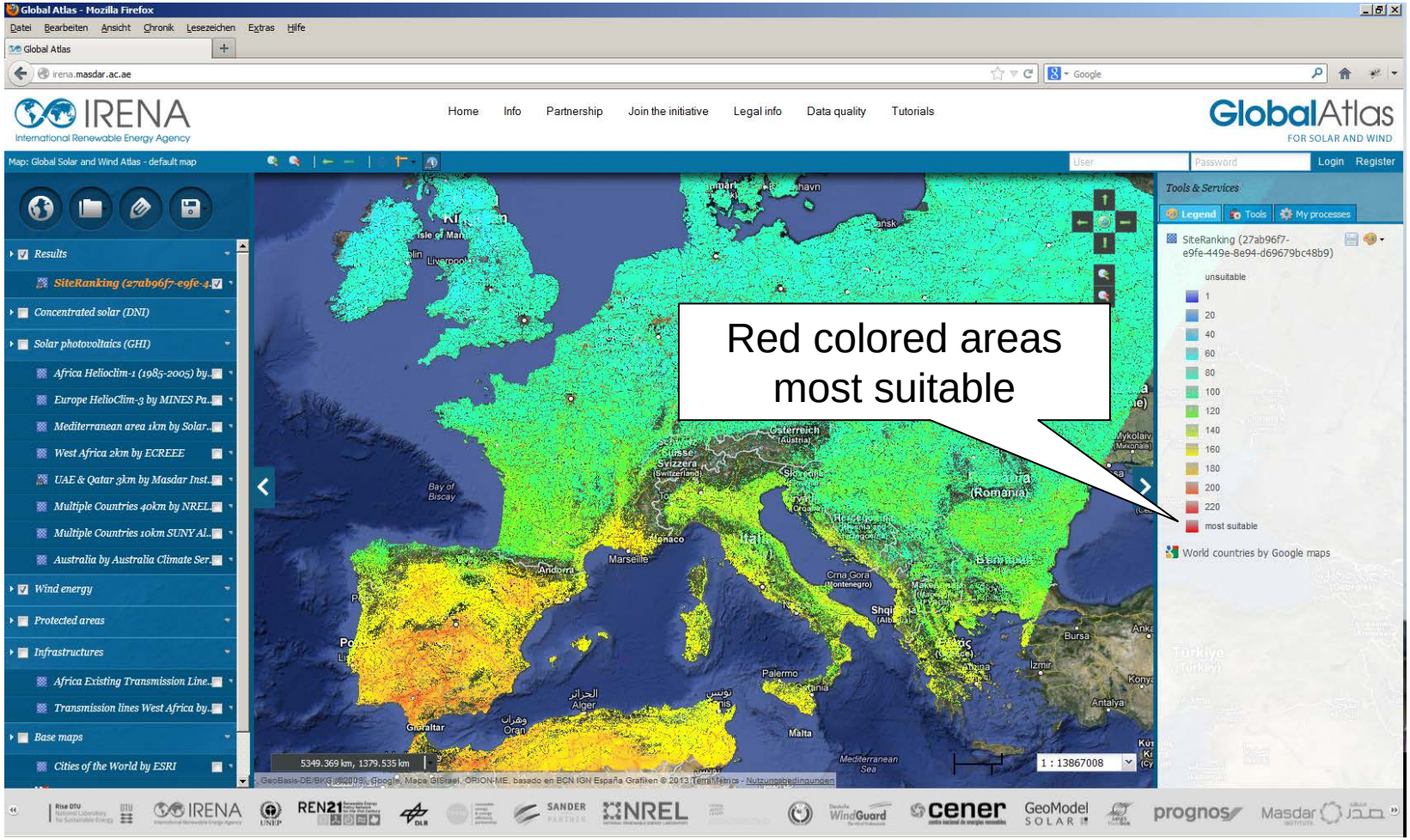
Available RE Resources Tool



Tool for Site Ranking



Site Ranking Result



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Summary and Outlook

- The Global Atlas for Solar and Wind Energy is an open access platform for renewable resource data
  - In principle anyone can provide data (data sharing agreement with IRENA required, standards on data quality and transparency need to be followed – to be defined in 2013)
- New renewable technologies will be added in the future (geothermal, hydro, biomass, tidal)
- Newer high resolution data sets will be added
  - World Bank ESMAP resource assessments will contribute to the Atlas
- New tools will be developed and added in the future
  - Again: anyone can participate and contribute

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Thank you very much for your attention!!!

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Point Query Results