

Solar Atlas for the Southern and Eastern Mediterranean

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DLR

Deutsches Zentrum
für Luft- und Raumfahrt e.V.
in der Helmholtz-Gemeinschaft

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Motivation

- Solar radiation is the fuel of solar energy. Knowledge about its availability is crucial for the successful development of
 - Solar energy policies
 - Solar energy investments
- The knowledge on the solar resource is very uncertain in the Southern and Eastern Mediterranean
- Information on resources and potentials is essential to trigger developments
- Good Basic solar radiation information should be a public good (common investment for everybody's profit, as e.g. infrastructures).

Getting Renewable Energy to Work

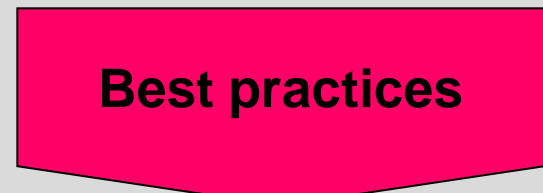
Available Resources



Which technologies are feasible?



How can RE contribute to the energy system?



How to get them into the market? Where to start?

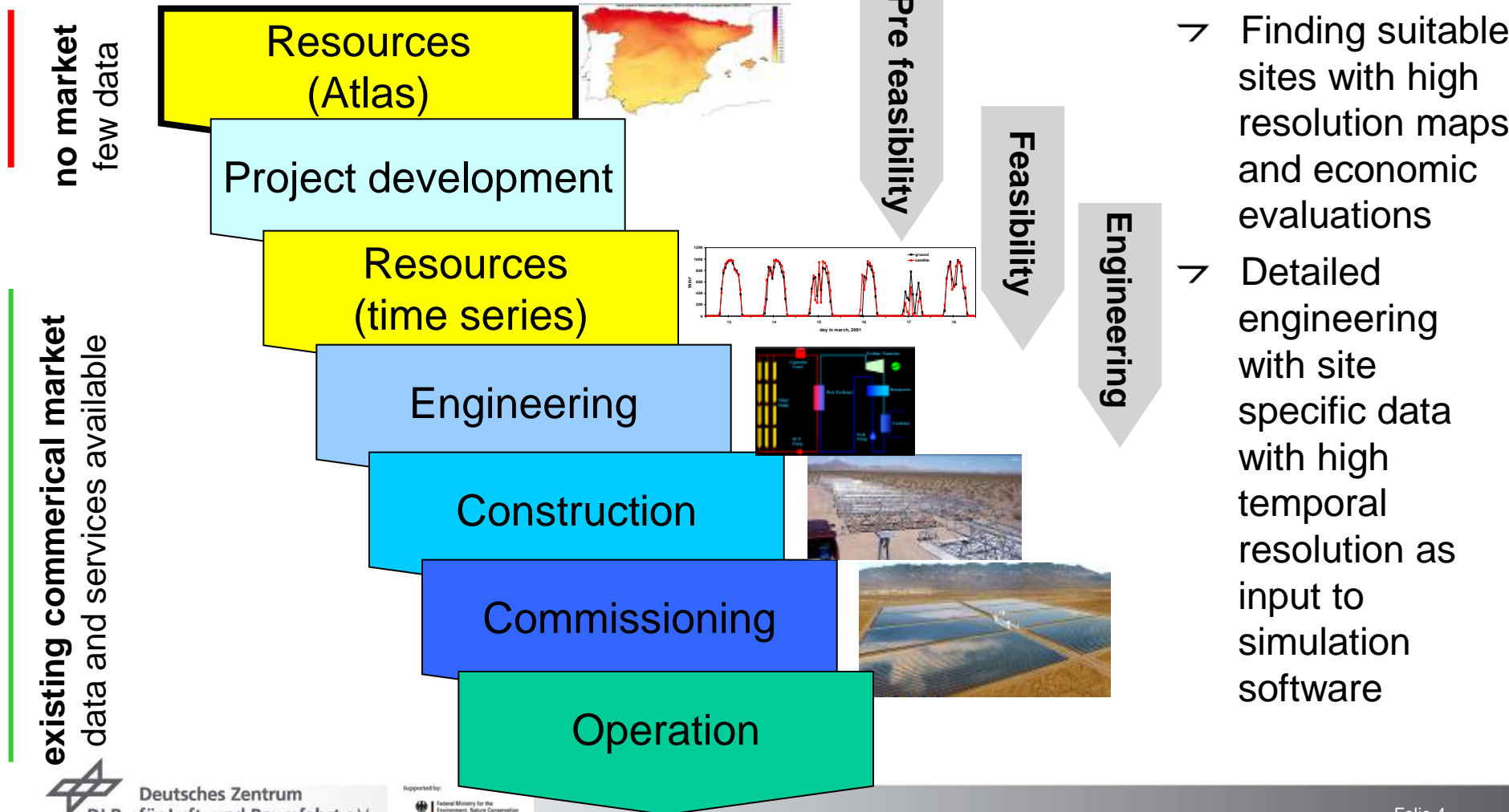


Legislation, incentives



Setting the right Political + Economic Framework

Project Development for Renewable Energy Systems



Current Status of Resource Information

- Coarse public data sets of unknown quality
 - Reanalysis data
 - NASA SEE (100 km)
 - PVGIS (only global horizontal radiation)

- Few regional assessments
 - Often by interpolation of ground measurements
 - Only global horizontal radiation
 - Sometimes hard to access (e.g. only color maps in printed presentations)

Objectives of the Solar-Med-Atlas

- **Improve the resource data base by**
 - High resolution solar radiation mapping (GHI + DNI) based on satellite images
 - Use of open and transparent state of the art algorithms
 - Transparent validation of the data base
 - Free access to monthly values
- **Improve access by**
 - Open system architecture based on internet standards
 - Easy to use web interface
 - Downloadable data (monthly time series and maps)
 - Web applications for data analysis
 - Linking ancillary information (Socio-Economic, GIS data)
- **Improve the knowledge data base for solar energy policy making and investments**

Project Consortium



German Aerospace Center,
Institute of Technical
Thermodynamics,
Department of Systems-
Analysis and Technology
Assessment (Coordinator)
German Remote Sensing
Data Center



Armines / Mines-ParisTech,
Centre Énergétique et
Procédés



Transvalor



GeoModel Solar



United Nations
Environmental Programme,
Division of Technology,
Industry and Economics



OME, Observatoire
Méditerranéen de l'Énergie



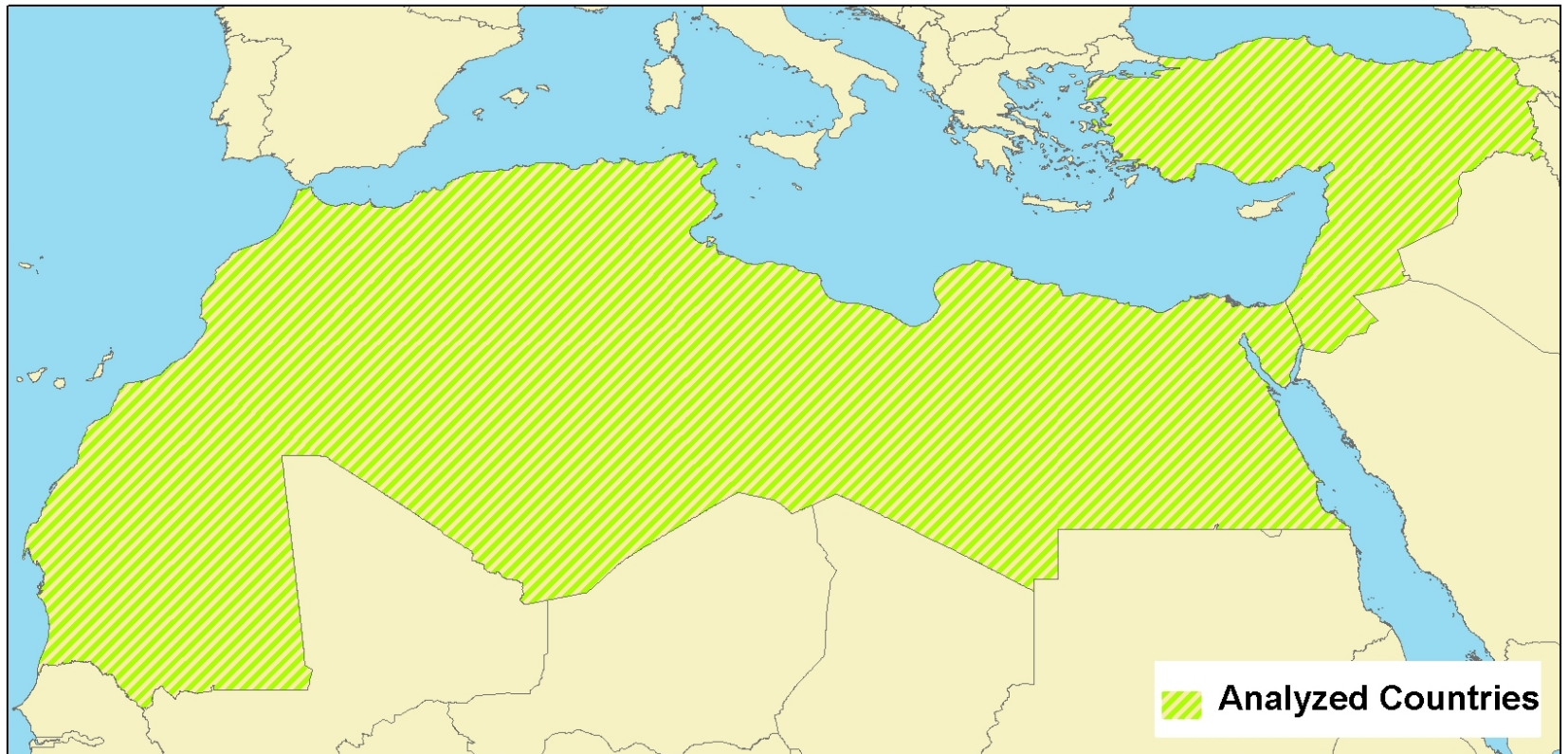
RCREEE Regional Center
for Renewable Energy and
Energy Efficiency



Project Elements

- Stakeholder Involvement (a previous workshop in Cairo, this one, another one later in the year), Dissemination
- Satellite base solar radiation data from Meteosat First Generation (1991-2005) and Second Generation (2006-2010)
- Improved Aerosol data, Validation
- Web-service Infrastructure
- User interface / portal

Analyzed Region



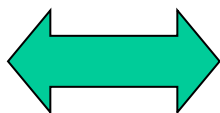
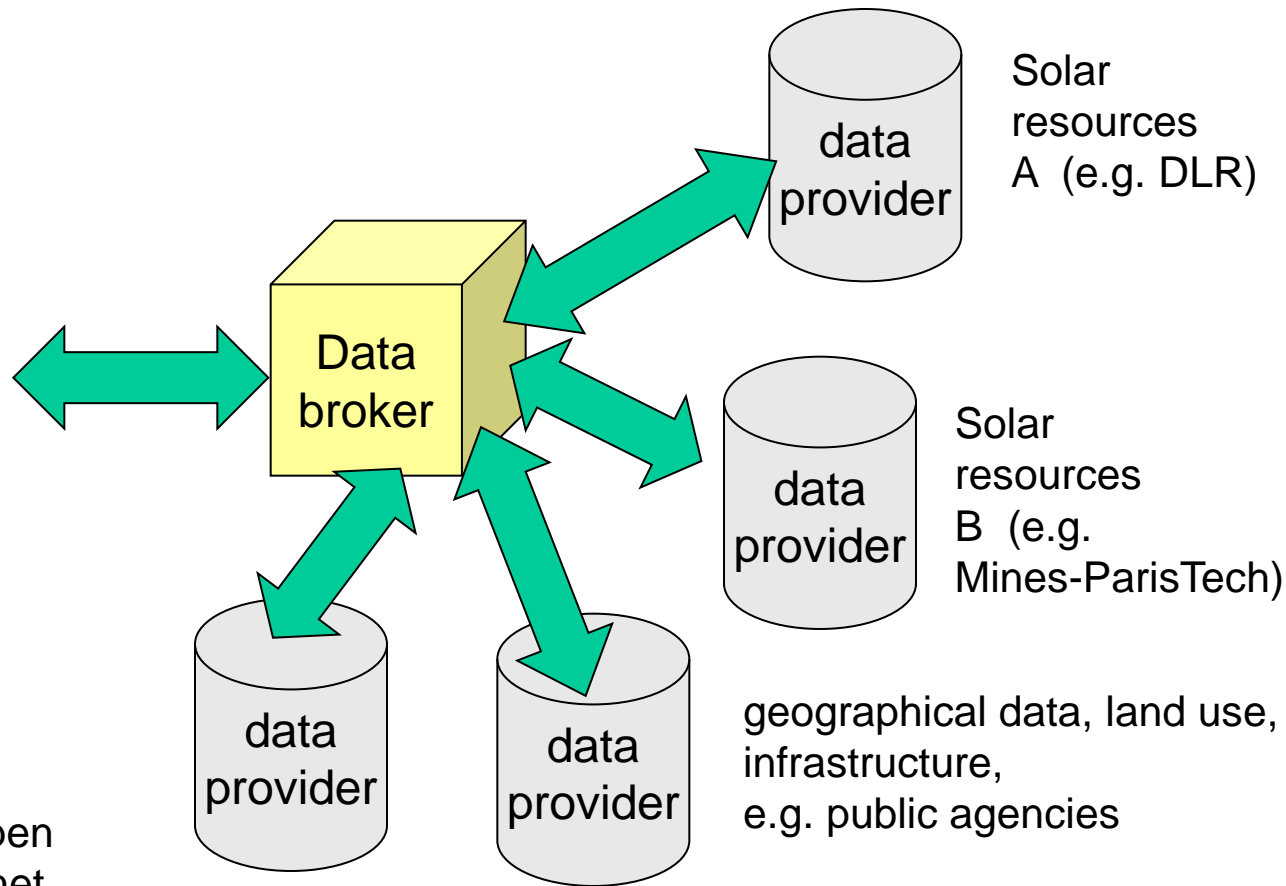
Possible Target Groups

- Policy makers, public agencies and governments
- Industry and investors
- NGO's and academic institutes
- The general public
- Grid operators and utilities

Networking with Collaborative Information Systems



user interface

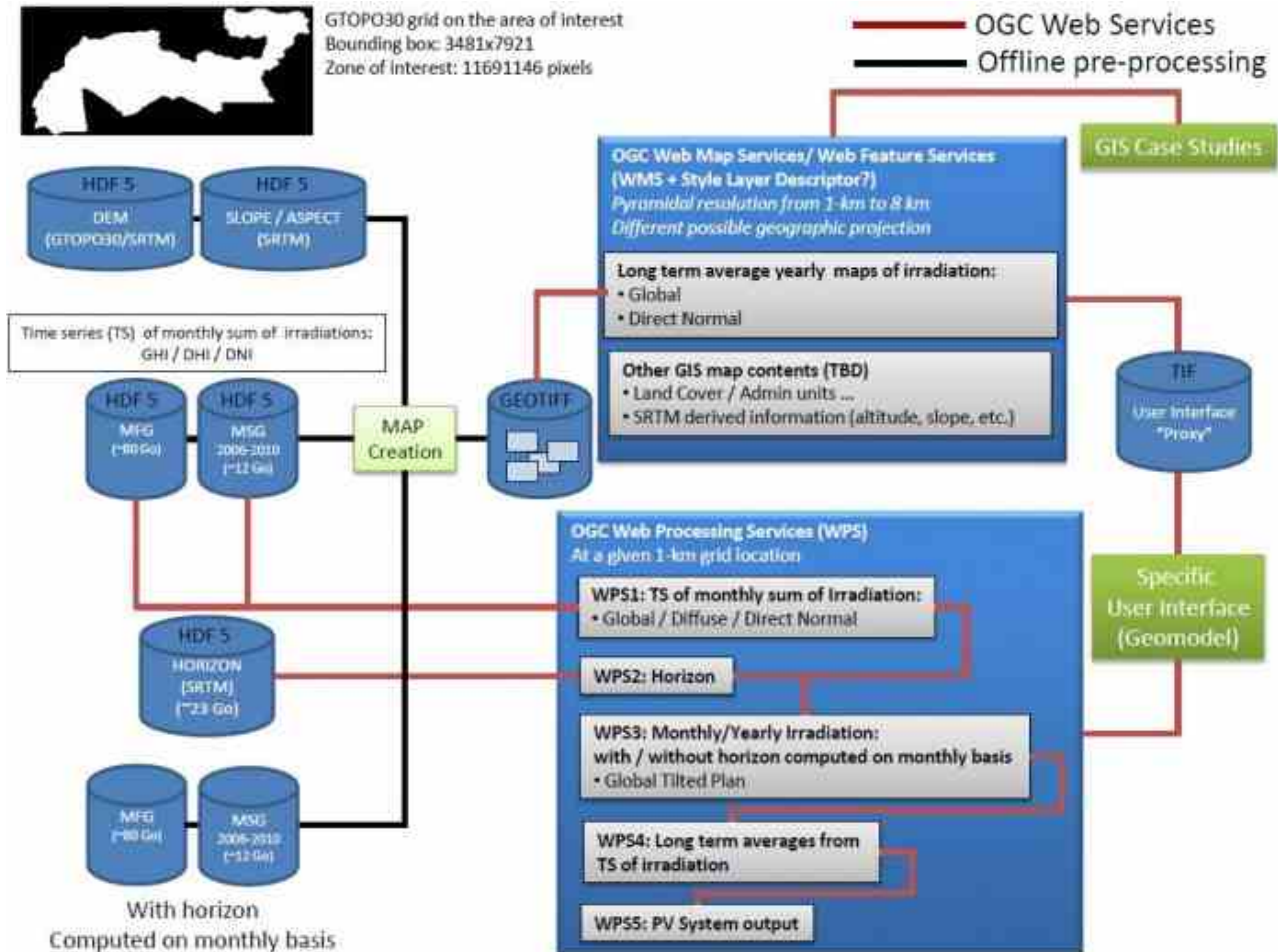


Communication with open and standardized internet protocols

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

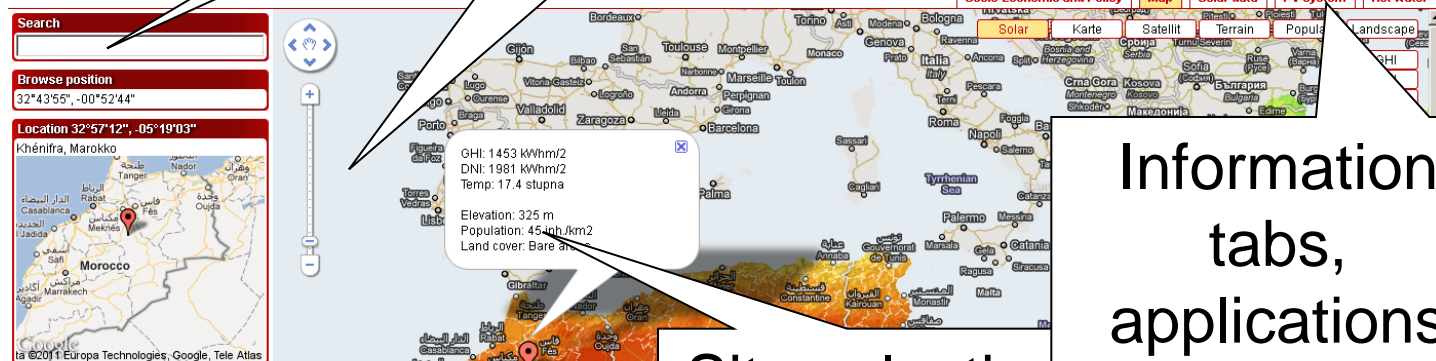
set up of the architecture within the framework of GEOSS

Solar-Med-Atlas Infrastructure



User Interface

Google API:
Easy to use



Information
tabs,
applications

Site selection,
read average
values

Socio-economic & policy data

Marokko

Renewable Energy Promotion Policies:

Regulatory Policies

- Feed-in Tariff
- Renewable Portfolio Standard/quota
- Net Metering
- ✓ Investment or other tax credits
- Tradable RE certificates

Fiscal Incentives

- Capital Subsidy, Grant or Rebate
- ✓ Tax Incentives
- Energy production payments or tax credits

Public Financing

- ✓ Public Investment, Loans or Grants
- Public Competitive Bidding

Further information:

- Energy Country Profiles (reegle.info)

Sources

www.map.ren21.net
www.reegle.info

Basic socio
economic
information

Powered by SolarGIS | Version 1.0-SNAPSHOT | Config: home/atomcat/config/solarmed/atlas/solar-med-atlas

More Services to Come

- Site evaluation and ranking
- Assessment of technical potentials

Thank you !

➤ Questions and Feedback

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