المركز الإقليمي للطاقة المتجددة وكفاءة الطاقة

RCREEE

Regional Center for Renewable Energy and Energy Efficiency

Current situation of RE&EE data collection in MENA countries: RCREEE Efforts

Building a Qualitative and Quantitative Renewable Energy Database Framework (REDAF), 1st Regional workshop Marrakech, 17 May 2012

Prepared by:

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About RCREEE…..

المركز الإقليمي للطاقة المتجددة وكفاءة الطاقة
RCREEE
Regional Center for Renewable Energy and Energy Efficiency

- **RCREEE stands for « Regional Centre for Renewable Energies and Energy Efficiency »**
- **RCREEE is an independent intergovernmental regional policy think tank, dedicated to the promotion of RE&EE in the Arab countries in MENA region,**
- **RCREEE set up is sponsored by Germany, Denmark, the EU and Egypt (the host country).**

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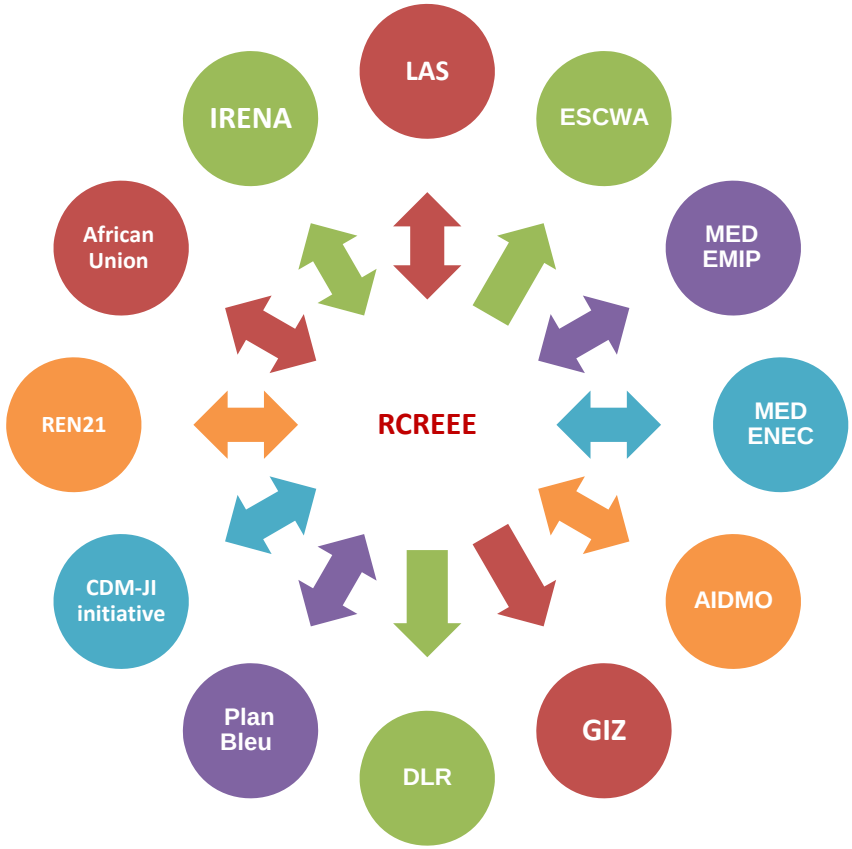
RCREEE
Regional Center for Renewable Energy and Energy Efficiency

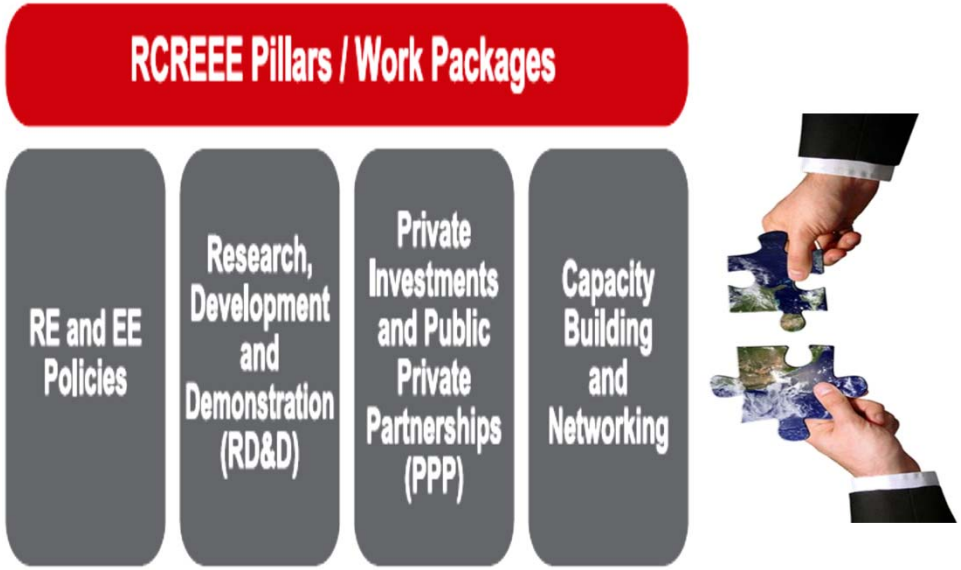
RCREEE

13 Member States

Morocco, Algeria, Tunisia, Libya, Egypt, Sudan, Lebanon, Syria, Palestine, Jordan, Bahrain, Iraq, and Yemen.

Cooperation with Regional & International organizations





RCREEE strengthens cooperation with regional and international organization to promote RE&EE in the Arabian region.

RCREEE Pillars/Work Packages

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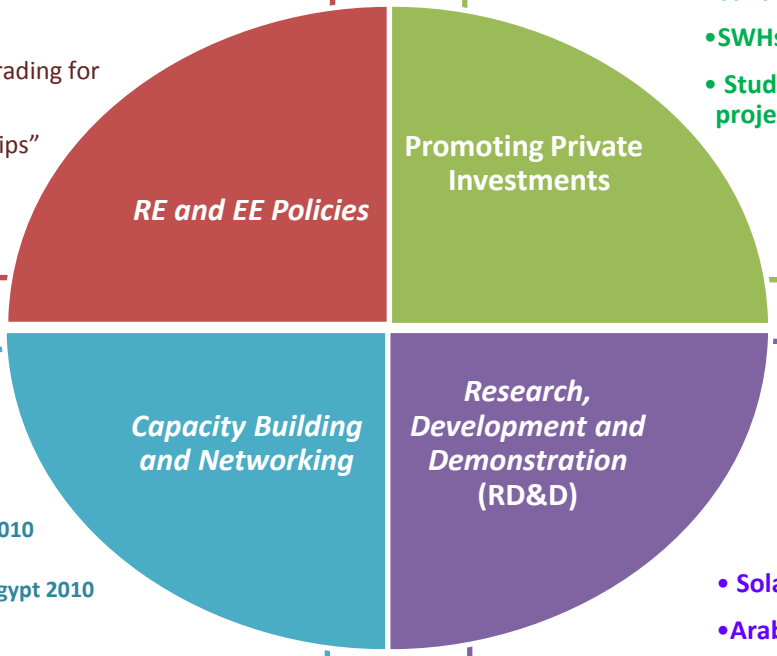


- Arabian RE Strategy
- Arab End Use Electrical EE Guideline (NEEAPs)
- Study on the Impact Assessment of RE&EE National Policies and Regulations
- **EE Indicators Study**
- Study on New Perspectives for Carbon Trading for RE&EE Projects
- Conference "Building Financing partnerships"

- **LUA and PPA Models**
- **"RE Feed-In Tariff - Design Options" Capacity building**
- **SWHs Certification and Standardization**
- **Study "Guideline for Grid Codes for RE projects"**

- **TC: "Fundamentals of Wind Energy" Egypt, 2010**
- **TC: "O&M of Wind Farms", Morocco 2010**
- **TC: "Planning & Modeling of Wind Farms", Egypt 2010**
- **TC: "EE in Building", Tunisia, 2010**
- **TC: "Financing RE projects" Lebanon 2010**
- **TC: "Solar Power Technologies", Spain 2011**
- **TC: "Carbon Trade for RE&EE projects" Q4, 2011**
- **TC: "Energy Audits in Industry", 2012**
- **WS: "Labels & standards for Home Appliances", Q4 2011**
- **Internship**

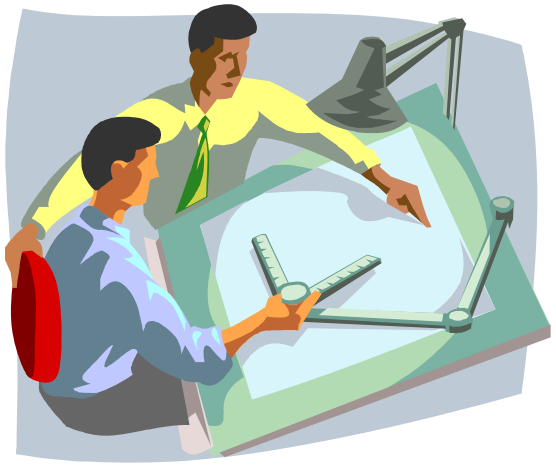
- **Solar-MED-Atlas**
- **Arab RE&EE Database "AREEED"**
- **Arab E-Energy Balance (AREEB)**
- **RCREEE Research Grants Projects**
- **Development of a Compliance Tool for Tunisian Building Energy Efficiency Code**

Greetings from Egypt

For how long we can preserve our data!!!




If we fail to plan, we plan to fail



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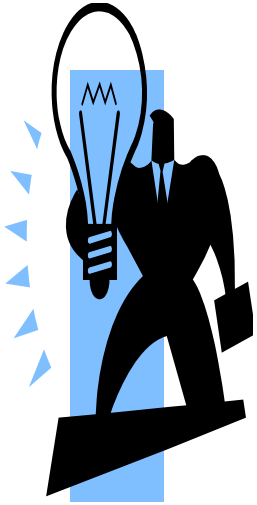


Arab Region E- Energy Balance (AREEB)

AREEB Objectives

"To provide executives and experts in RCREEE member states with a **flexible tool to explore and utilize national and regional energy balances**"

AREEB

Types of Data

Energy

- Primary Supply
- Conversions
- Final Consumption
- etc.

Sources of data

- National sources
- International (IEA, WEC, EUROSTAT...)

Socio-economic

- Economic (GDP, …)
- Demographic
  population, household, dwelling…

- National Statistic Institutes (CAPMAS, INS...)
- International (UN, WB etc.)

Environmental

GHG emission

CO2, CH4, N2O

- National sources (GHG inventories…)
- International (UNFCCC...)

AREEB

RCREEE
Arab Region Energy Balance

- Home
- Country Groups
- Generate Datasheet
- Data Sources
- Data Sets
- Energy Unit Conversion
- Reports
- Browser Note
- Disclaimer
- RCREEE Home

Logged in as:
Pipeline Hero

Log Out | New User

Generate Datasheet

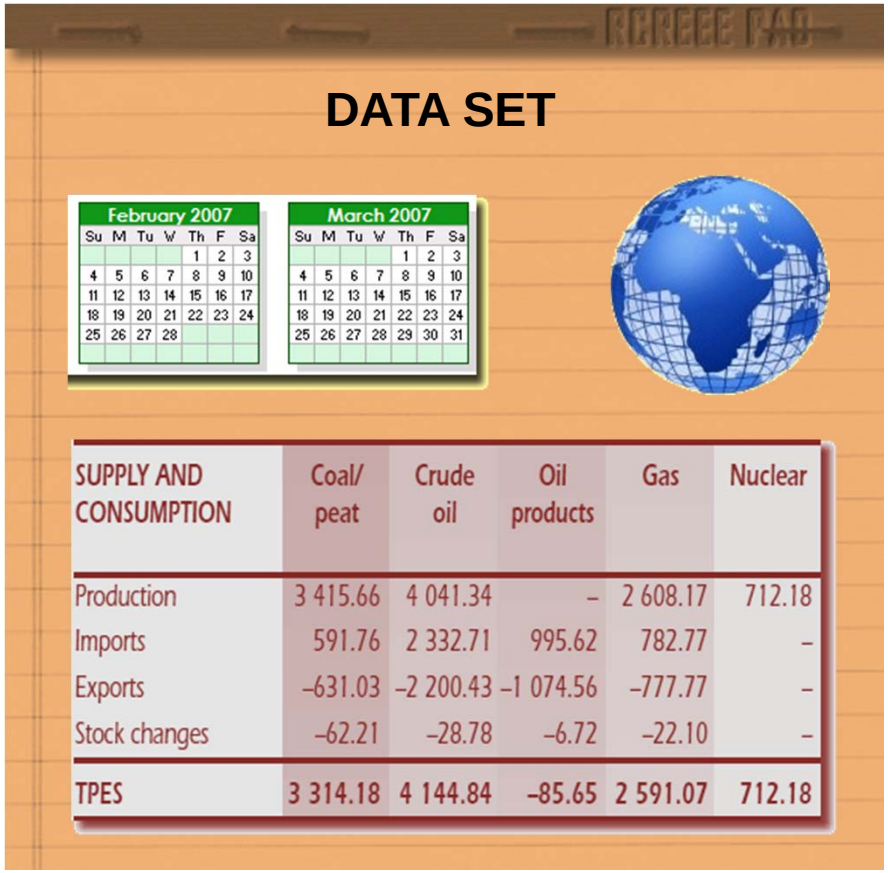
Energy Stats

Socioeconomic Stats

Environmental Stats

Data Sets: The Core

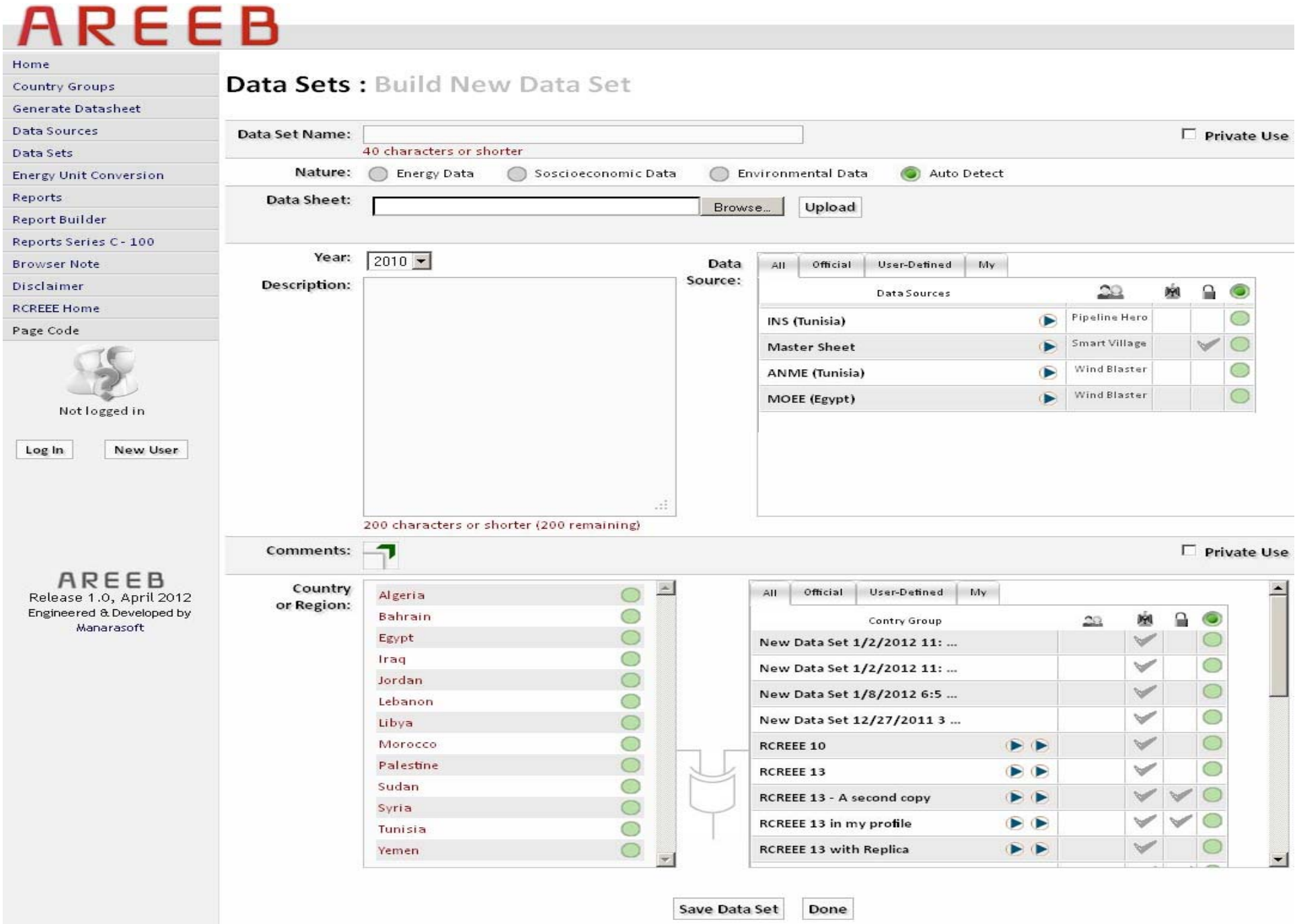
Chronological Domain



SUPPLY AND CONSUMPTION	Coal/ peat	Crude oil	Oil products	Gas	Nuclear
Production	3 415.66	4 041.34	–	2 608.17	712.18
Imports	591.76	2 332.71	995.62	782.77	–
Exports	–631.03	–2 200.43	–1 074.56	–777.77	–
Stock changes	–62.21	–28.78	–6.72	–22.10	–
TPES	3 314.18	4 144.84	–85.65	2 591.07	712.18

Geographical Domain

Energy, Socioeconomic, & Environmental Data


AREEB
Home
Country Groups
Generate Datasheet
Data Sources
Data Sets
Energy Unit Conversion
Reports
Report Builder
Reports Series C - 100
Browser Note
Disclaimer
RCREEE Home
Page Code
Not logged in
Log In
New User
AREEB
Release 1.0, April 2012
Engineered & Developed by
Manarasoft
Data Sets : Build New Data Set
Data Set Name:
40 characters or shorter
Private Use
Nature:
Energy Data
Socioeconomic Data
Environmental Data
Auto Detect
Data Sheet:
Browse...
Upload
Year:
2010
Description:
200 characters or shorter (200 remaining)
Data Source:
All
Official
User-Defined
My
Data Sources
INS (Tunisia)
Pipeline Hero
Master Sheet
Smart Village
ANME (Tunisia)
Wind Blaster
MOEE (Egypt)
Wind Blaster
Comments:
Private Use
Country or Region:
Algeria
Bahrain
Egypt
Iraq
Jordan
Lebanon
Libya
Morocco
Palestine
Sudan
Syria
Tunisia
Yemen
All
Official
User-Defined
My
Contry Group
New Data Set 1/2/2012 11: ...
New Data Set 1/2/2012 11: ...
New Data Set 1/8/2012 6:5 ...
New Data Set 12/27/2011 3 ...
RCREEE 10
RCREEE 13
RCREEE 13 - A second copy
RCREEE 13 in my profile
RCREEE 13 with Replica
Save Data Set
Done

Online + Under Control

- **Online Application:**

  Everybody can come to the door

- **RCREEE Control:**

  Only some can enter (registration)

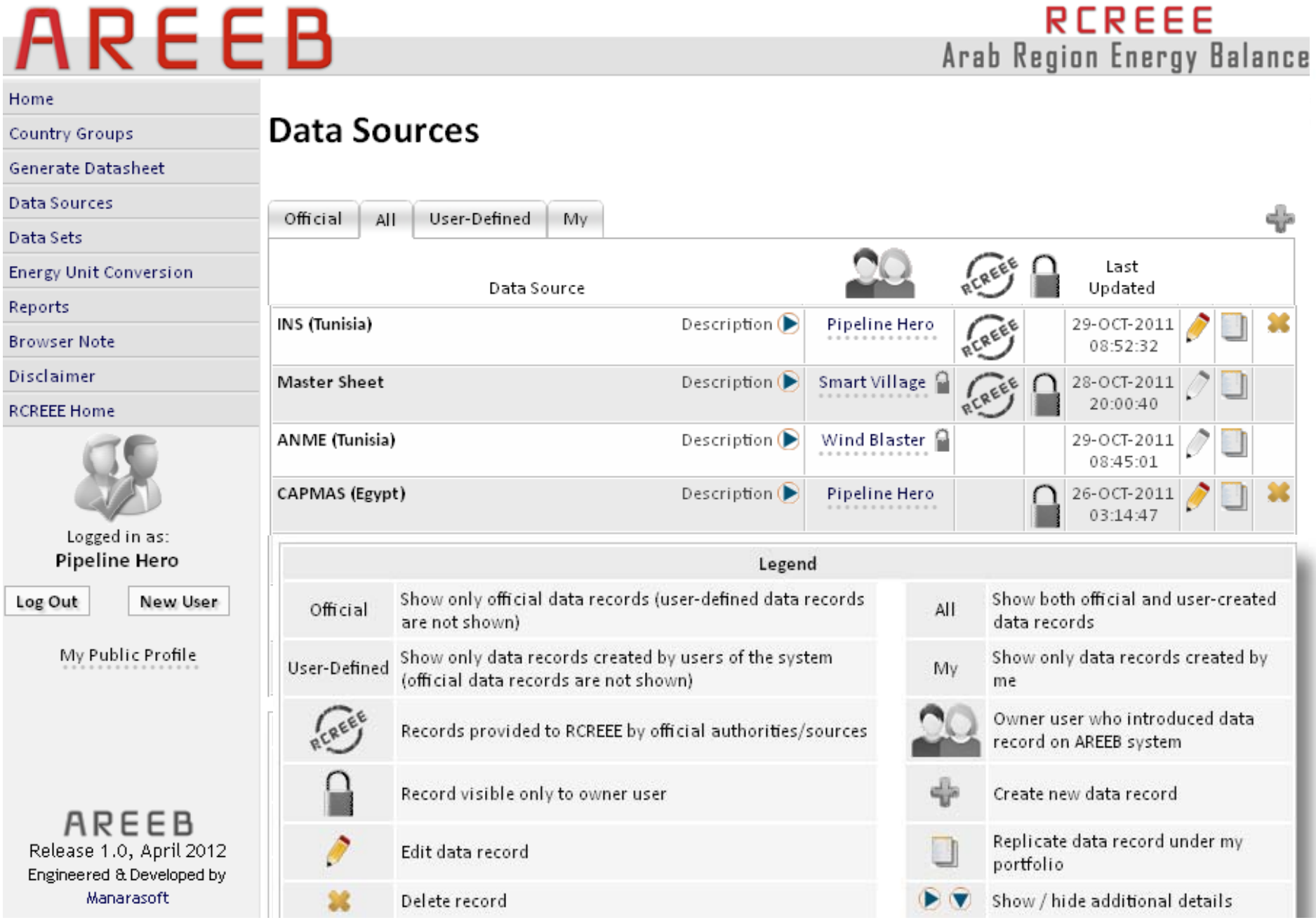
- **Finger-printed data**

Outgoing Data Credibility

- **RCREEE experts endorsing source-fed credible data as "Official"; a base for future user manipulations.**

Data Privacy

- **Screen Name / Email / Password control**
- **RCREEE and users can designate any data elements as “Private Use”.**
- **No user can alter Official or other users’ data.**


AREEB
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AREEB
Release 1.0, April 2012
Engineered & Developed by
Manarasoft
Data Sources
Official
All
User-Defined
My
Data Source
Last Updated
INS (Tunisia) Description Pipeline Hero 29-OCT-2011 08:52:32
Master Sheet Description Smart Village 28-OCT-2011 20:00:40
ANME (Tunisia) Description Wind Blaster 29-OCT-2011 08:45:01
CAPMAS (Egypt) Description Pipeline Hero 26-OCT-2011 03:14:47
Legend
Official
Show only official data records (user-defined data records are not shown)
All
Show both official and user-created data records
User-Defined
Show only data records created by users of the system (official data records are not shown)
My
Show only data records created by me
Records provided to RCREEE by official authorities/sources
Owner user who introduced data record on AREEB system
Record visible only to owner user
Create new data record
Edit data record
Replicate data record under my portfolio
Delete record
Show / hide additional details

REPORT E101 A

Basic Energy Statistics

DISCLAIMER: This report was generated based on data that might have been provided or modified by online users of AREEB Application. RCREEE holds no responsibility of any kind towards the accuracy or fidelity of source information used to generate this report, or towards a

Data Set **Title**: Egypt Energy 2010 **Date Created**: 1 January 1 More details	Total All Fuels (1000 TOE)	Hard Coal (1000 TOE)	Patent Fuels (1000 TOE)	Coke (1000 TOE)	Total Lignite (1000 TOE)	Brown Coal Briquettes (1000 TOE)	Crude Oil (1000 TOE)	Feedstocks (1000 TOE)	All Petroleum Products (1000 TOE)	Refinery Gas (1000 TOE)	LPG (1000 TOE)	Motor Spirit (1000 TOE)	Kerosenes - Jet Fuels (1000 TOE)	Naphtha (1000 TOE)	Gas / Diesel Oil (1000 TOE)	Residual Fuel Oil (1000 TOE)	Other Petroleum Products (1000 TOE)	Natural Gas (1000 TOE)
Primary production	*880,026*	*114,195*			*80,937*		*127,483*		*2,585*	*363*	*131*	*1,243*		*344*		*399*	*105*	*188,021*
Recovered Products	*6,857*	*1,186*						*2,471*	*1,078*						*36*	*268*	*169*	
Imports	*1,442,232*	*145,111*	*116*	*8,136*	*533*	*82*	*630,854*	*21,226*	*288,456*	*375*	*15,217*	*31,527*	*28,993*	*30,001*	*104,462*	*51,064*	*6,007*	*316,936*
Stock change	*-9,435*	*-2,305*	*5*	*-837*	*77*	*-5*	*-108*	*1*	*-6,154*	*1*	*-63*	*-676*	*-297*	*128*	*-4,948*	*-460*	*-130*	*-45*
Exports	*467,533*	*21,529*	*57*	*5,187*	*119*	*436*	*71,116*	*7,000*	*273,433*	*4*	*9,288*	*71,684*	*14,110*	*19,070*	*79,863*	*59,411*	*5,858*	*60,108*
International Bunkers (Marine + Aviation)	*50,830*								*50,830*						*7,337*	*43,182*	*7*	
Total Primary Energy Supply (TPES) :: Gross Inland Consumption (GIC)	2,011,017	136,657	65	2,112	81,428	-359	687,113	16,697	-38,297	736	5,997	-39,590	14,586	11,403	12,351	-51,323	285	444,804
Transformation input	*1,511,102*	*201,730*		*14,665*	*80,725*	*924*	*683,211*	*66,101*	*31,209*	*1,622*	*84*			*83*	*1,729*	*25,781*	*500*	*131,682*
Input to nuclear power stations	257,360																	
Input to patent fuel and briquetting plants	4,497	499			3,995				3									
Input to coke-oven plants	45,693	45,081		116	31				409									55
Input to blast-furnace plants	14,538			14,538														
Input to gas-works	752	436			171				127		44			83				18
Input to refineries	749,312						683,211	66,101										
Input to district heating plants	15,771	3,792		11	234				1,171	2	9				365	726	45	6,922
Input to public thermal power stations	372,686	145,568			75,353	844			22,466	235	18				1,195	20,366	62	104,476
Input to autoproducer thermal power stations	49,628	6,316			942	80			6,836	1,381	13				169	4,683	393	20,041
Transformation output	*1,098,632*		*321*	*33,954*		*3,489*			*740,166*	*29,454*	*22,996*	*160,261*	*46,311*	*45,597*	*270,528*	*108,767*	*19,192*	
Output from nuclear power stations	85,943																	
Output from patent fuel and briquetting plants	3,810																	
Output from coke-oven plants	41,870																	
Output from blast-furnace plants	14,601		321			3,489												
Output from gas-works	531			33,954														
Output from Refineries	740,166																	
Output from district heating plants	13,405																	
Output from public thermal power stations	173,691								740,166	29,454	22,996	160,261	46,311	45,597	270,528	108,767	19,192	
Output from autoproducer thermal power stations	24,563																	
Exchanges; transfers, returns	*3,026*						*-3,875*	*50,680*	*-43,779*	*1,539*	*-1,668*	*-8,146*	*-4,409*	*-14,580*	*-4,436*	*-2,258*	*-7,918*	
Interproduct transfers	1,211						-3,875	-157	5,242	2,326	2,074	-1,648	-3,838	3,972	435	3,977	-1,634	
Products transferred	2,061							39,155	-37,094	-127	-2,961	-5,011	-379	-11,814	-4,114	-5,229	-5,982	
Returns from petrochemical industry	-246							11,682	-11,927	-660	-781	-1,487	-192	-6,739	-758	-1,006	-302	
Consumption - Energy sector	*94,014*	*763*		*225*	*348*	*16*	*136*	*434*	*42,914*	*24,712*	*667*	*29*	*1*	*108*	*775*	*9,439*	*3,195*	*14,601*
Distribution losses	*28,066*	*40*		*5*	*5*	*0*	*69*		*62*	*4*	*2*	*3*			*19*	*1*	*32*	*3,810*
Total Fuel Consumption (TFC) :: Energy Available for Final Consumption	1,279,794	34,124	385	21,171	351	2,190	-178	842	583,904	5,392	26,572	112,493	56,487	42,228	275,920	19,965	7,832	294,711

Features

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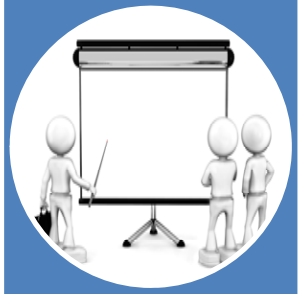
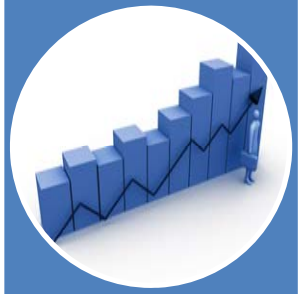
Future Possibilities

Upscale application to accommodate increasing needs and requirements.



RCREEE establish standard indicators and indicator templates

Open Indicators: Users define and manipulate their own indicators online



Extrapolating w/ linear, non-linear, or manual trending to rectify incomplete data elements

Online data feeds from regional and international sources of data.

Multi-lingual interface (e.g., Arabic & French)

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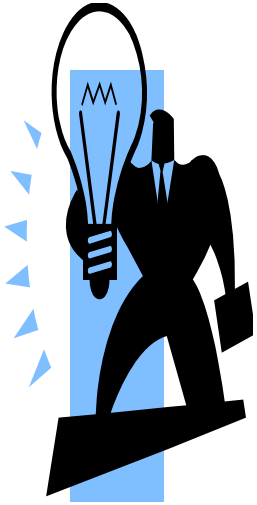

Arab RE&EE Database (AREEED)

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First Arab RE&EE Directory

RCREEE, ***participated with League of Arab States (LAS) in cooperation with experts and national organizations in issuing the first Arab RE&EE Directory (in Arabic).***

RCREEE reviewed, edited and produced the RE&EE Directory.

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Arab RE&EE Database (AREEED)

“RCREEE is creating a regional public RE and EE web portal and keep it updated through a network of focal points from the MENA and other LAS countries and to produce the relevant material for the periodical updates of the printed Arab RE & EE Directory.”

Arab RE&EE Database (AREEED)

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Qualitative and Quantitative Contents :

A complete profile for each country showing in graphical user interfaces its respective information.

RE&EE current status in the energy balance

- RE&EE contributions in primary energy
- Development of energy consumption

RE&EE Policies and strategies

- Strategic objectives (quantified targets)
- laws and legislation
- Incentives

Institutional structure

- Relevant Ministries and public bodies and institutions
- Key stakeholders
- Experts and consultancies

Research and educational institutions

- Research centers
- Plans for R&D and pilot projects
- Educational/capacity building institutions (specialized workforce)

Studies and projects

- Studies realized on the utilization prospects
- Commercial projects implemented and planned

Companies

- Installation and manufacturing companies
- ESCOs (energy service companies)

Areas of joint Arab cooperation

- Exchange and transfer of experiences
- Development of appropriate financing mechanisms

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Arab RE&EE Database (AREEED)

- **A specialized IT company contracted**
  ➔ expected to be tested and validated end 2012.

- **Multilingual web portal**
  ➔ 3 languages Arabic, English and French.

- **National focal points are already assigned**
  ➔ mandated to update the data of the AREED.

New

- **RCREEE is preparing to issue an annual analytical publication on RE Policies, Achievements and Market Competence in RCREEE countries (2nd half , 2012)**
- **RCREEE will update Arab RE&EE Directory (1st half, 2013)**

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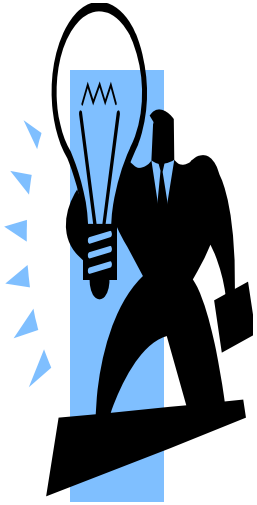

Solar Atlas for the Southern and Eastern Mediterranean (Solar-MED-Atlas)

Solar-MED-Atlas

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The project will bring high resolution (1km), long term coverage (at least 15 years) data on the available resources for the whole target region.

The data base will be made available with a distributed information system which will ensure the ease of use of the data.

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German Aerospace Center, Institute of Technical Thermodynamics, Department of Systems-Analysis and Technology Assessment (Coordinator)
http://www.dlr.de/tt/system

Armines / Mines-ParisTech, Centre Énergétique et Procédés
http://www.mines-paristech.fr/Fr/CEP/

Transvalor
http://www.transvalor.fr/

GeoModel Solar
http://geomodelsolar.eu

United Nations Environmental Programme, Division of Technology, Industry and Economics
http://www.unep.org/dtie/Home/tabid/6459/Default.aspx

OME, Observatoire Méditerranéen de l'Energie
http://www.ome.org/

RCREEE, Regional Center for Renewable Energy and Energy Efficiency
http://www.rcreee.org/

Objectives of the Solar-Med-Atlas

Improve the resource data base

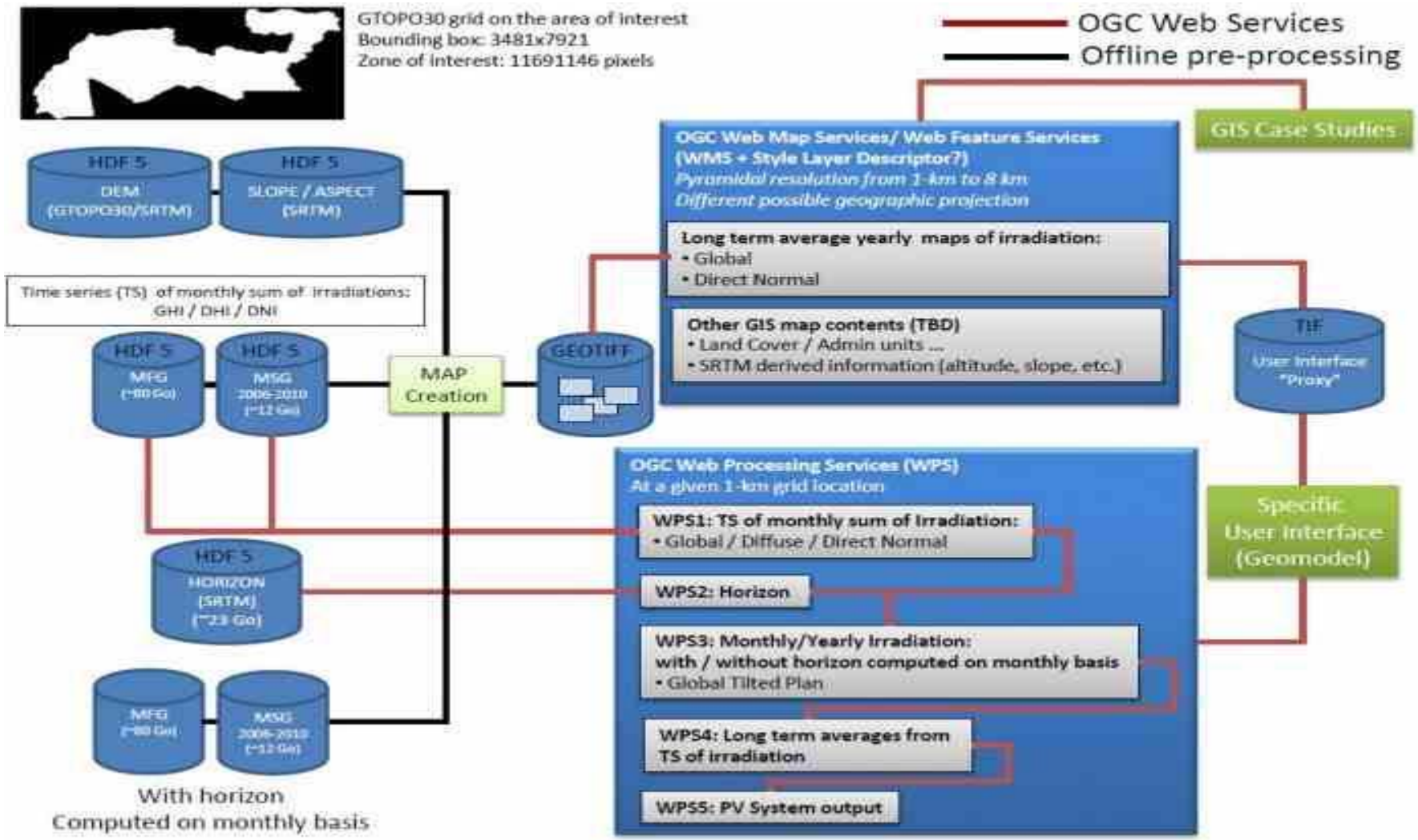
- High resolution solar radiation mapping (GHI + DNI) based on satellite images
- Use of open and transparent state of the art algorithms
- Transparent validation of the data base
- Free access to monthly values

Improve access

- 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)

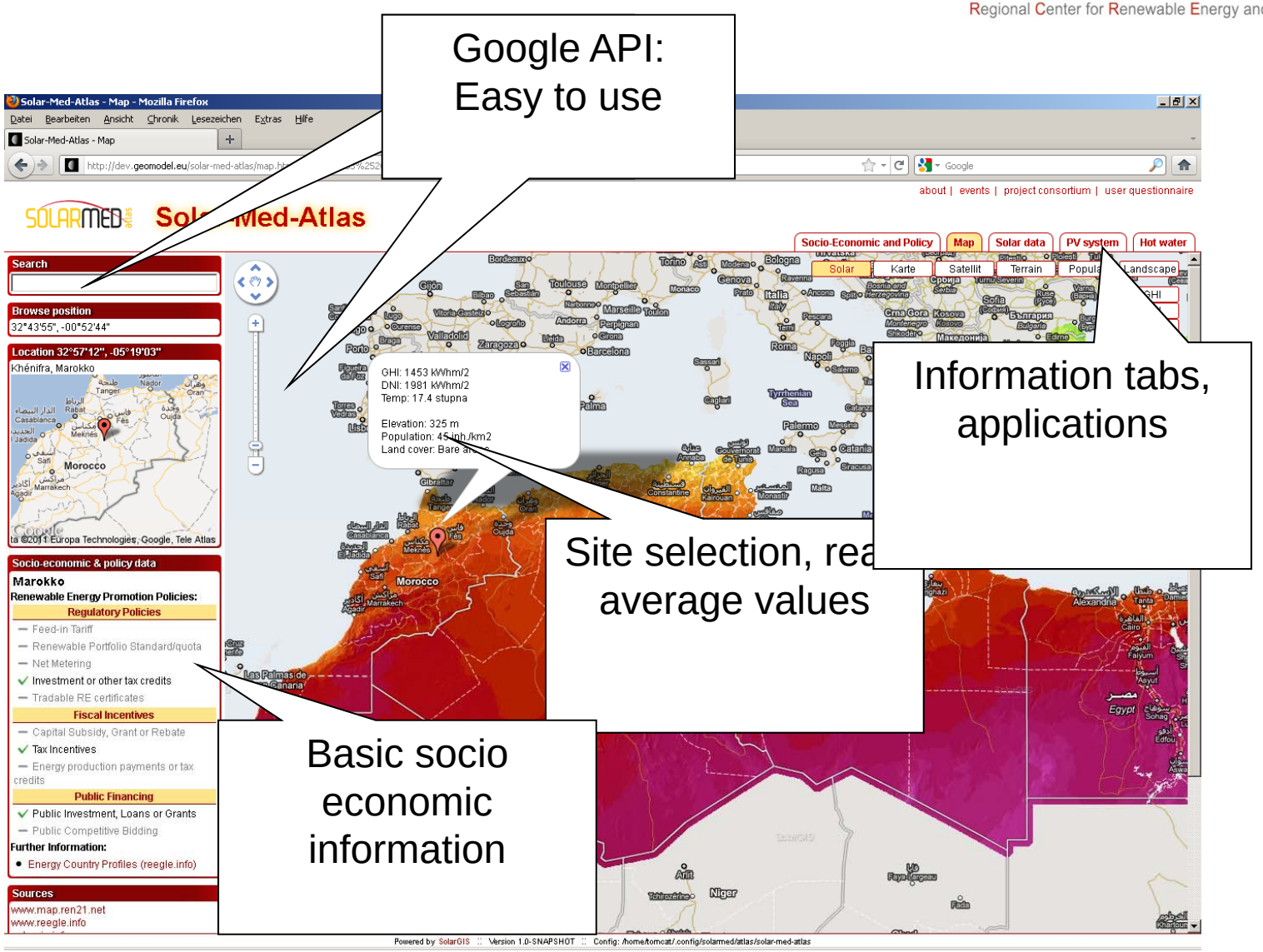
Improve the knowledge data base for solar energy policy making and investments

Solar-Med-Atlas Infrastructure



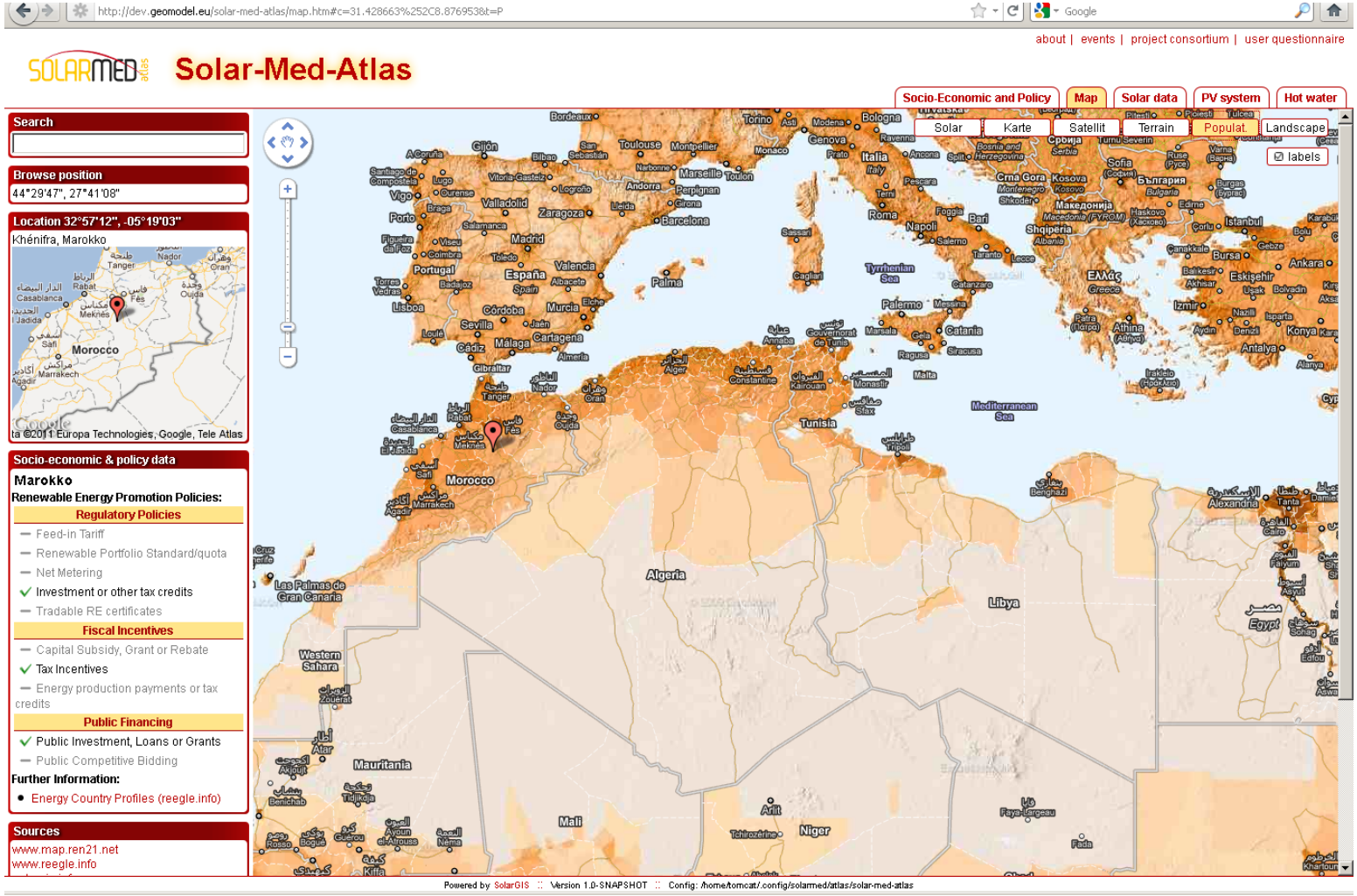
Solar Atlas for the Southern and Eastern Mediterranean,Carsten Hoyer-Klick , DLR, Users workshop , Cairo, Nov. 1st, 2011

User Interface



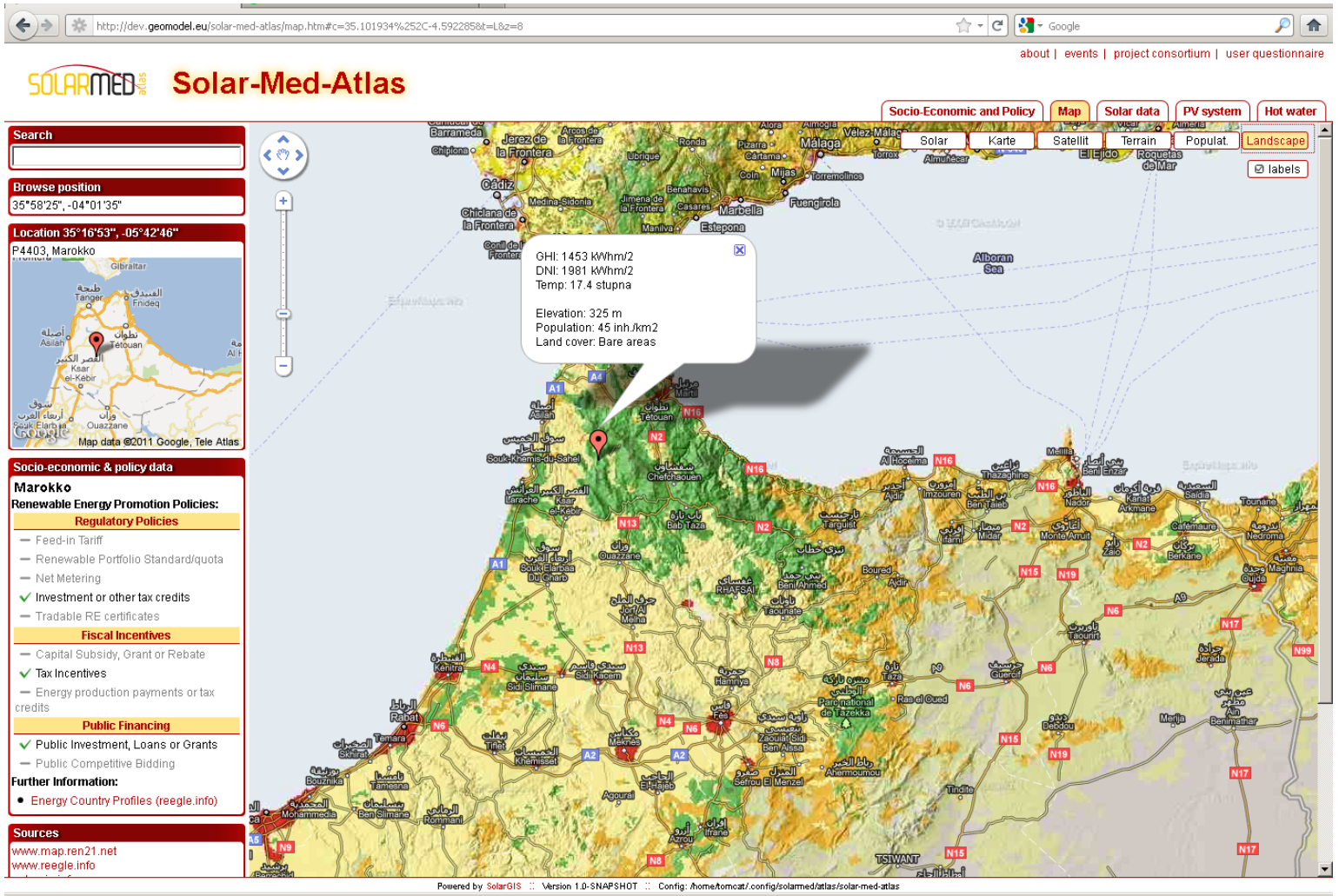
Solar Atlas for the Southern and Eastern Mediterranean,Carsten Hoyer-Klick , DLR, Users workshop , Cairo, Nov. 1st, 2011

User Interface Population Density



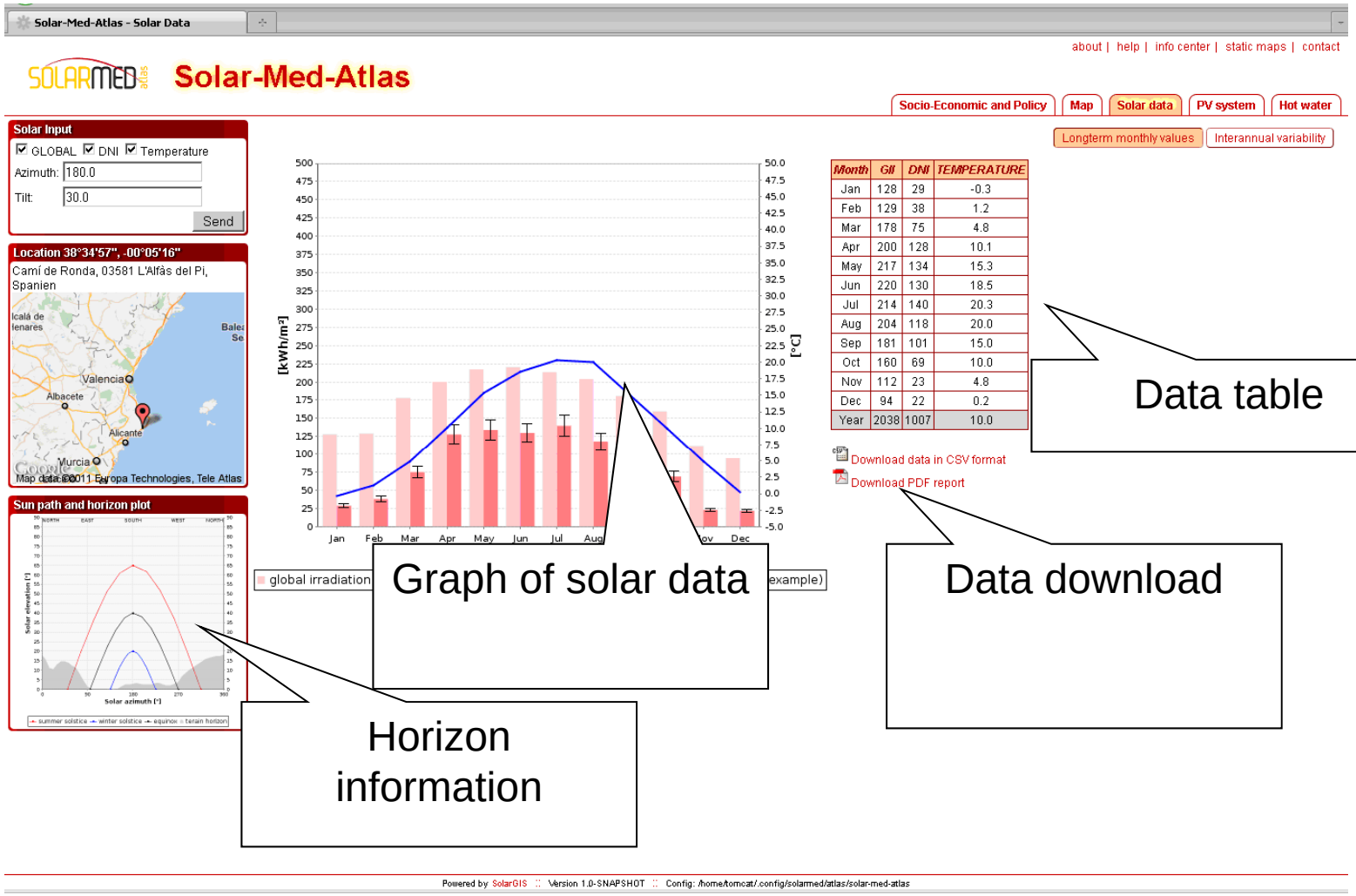
Solar Atlas for the Southern and Eastern Mediterranean,Carsten Hoyer-Klick , DLR, Users workshop , Cairo, Nov. 1st, 2011

User Interface Land Cover



Solar Atlas for the Southern and Eastern Mediterranean,Carsten Hoyer-Klick , DLR, Users workshop , Cairo, Nov. 1st, 2011

User Interface Solar Data



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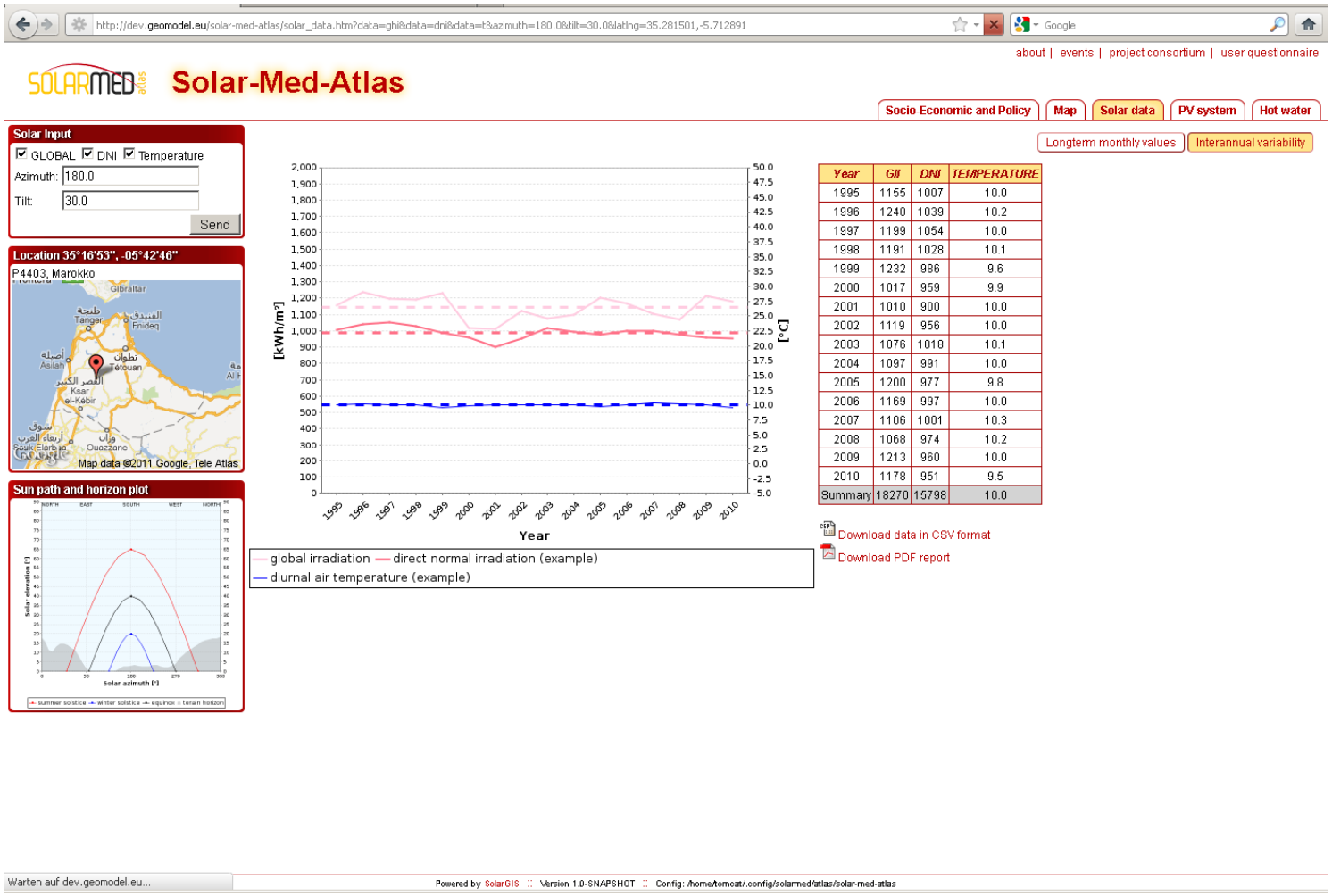
User Interface: Interannual variability



Year	GII	DNI	TEMPERATURE
1995	1155	1007	10.0
1996	1240	1039	10.2
1997	1199	1054	10.0
1998	1191	1028	10.1
1999	1232	986	9.6
2000	1017	959	9.9
2001	1010	900	10.0
2002	1119	956	10.0
2003	1076	1018	10.1
2004	1097	991	10.0
2005	1200	977	9.8
2006	1169	997	10.0
2007	1106	1001	10.3
2008	1068	974	10.2
2009	1213	960	10.0
2010	1178	951	9.5
Summary	18270	15798	10.0

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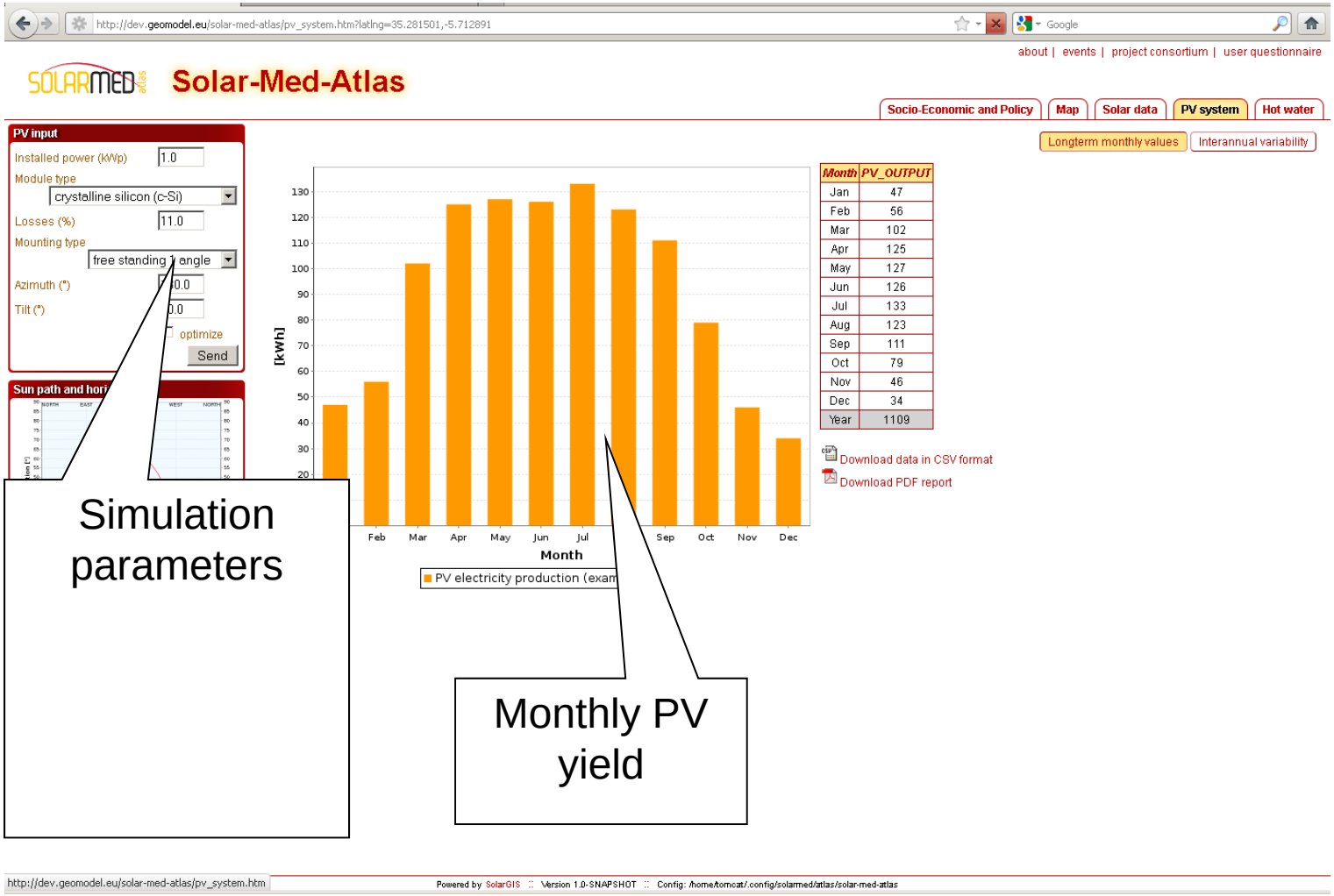
User Interface PV Simulation



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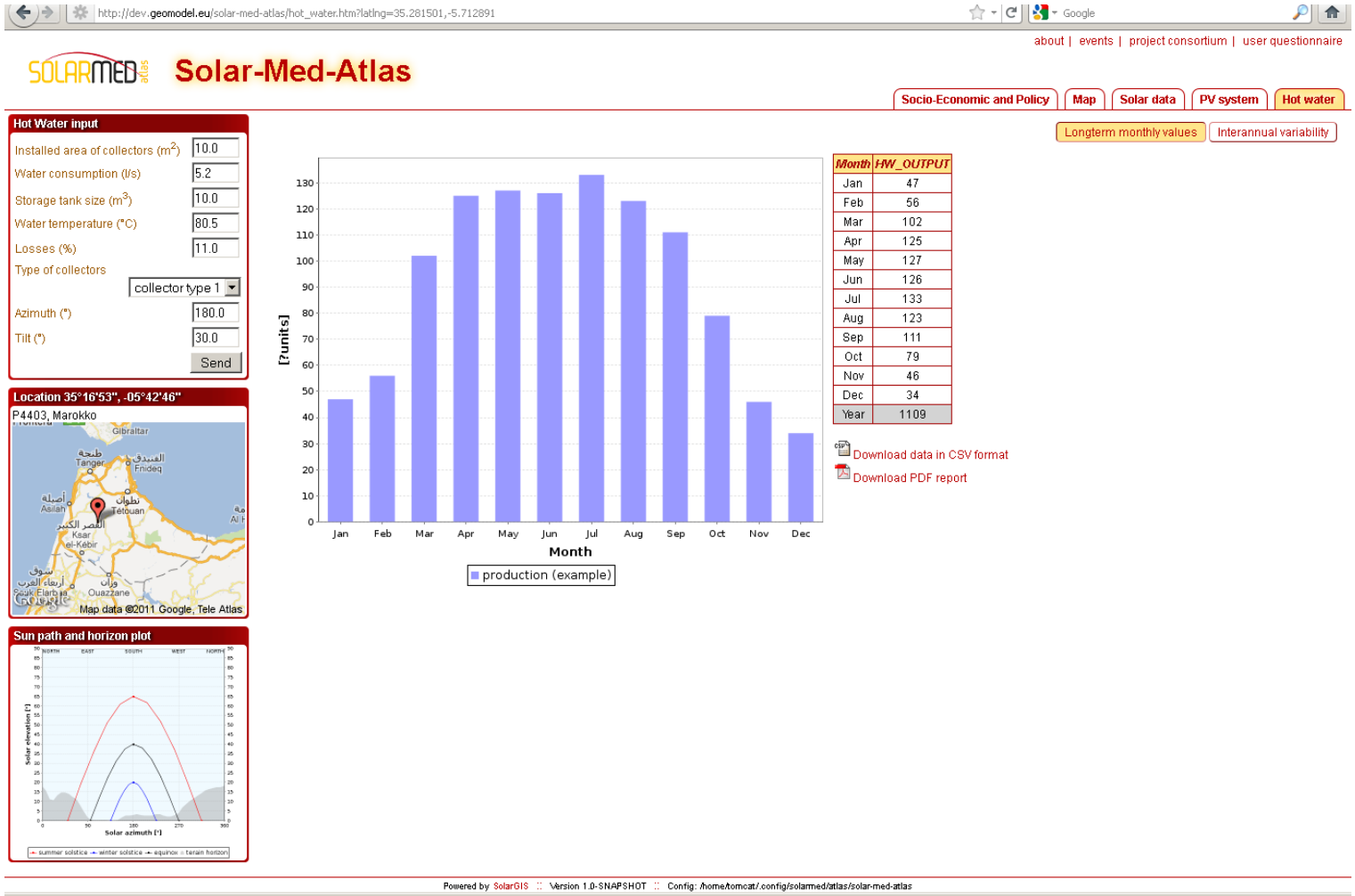
User Interface Solar Hot Water System



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"Speed is irrelevant if you are going in the wrong direction."

Mahatma Gandhi

RCREEE Experience in Data Collection!!!

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Regional Center for Renewable Energy and Energy Efficiency

We always get responses to our questionnaires and surveys, but always with delay (processes/resources problem!!)

Units, conversion factors, periods covered, assumptions, sums … (metadata!!)

Repetition and redundancy (qualitative data!!)

Non homogeneity and some time conflicting data/information from different/same "National" sources (internal communication, previous answers!!)

Terminology (Arabic translation from English/French!!)

Format; e.g. "," or "." for decimals and removal of rows for data not available (guidelines and samples for answering!!)

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RCREEE

Regional Center for Renewable Energy and Energy Efficiency

- **RCREEE highly welcomes REDAF and is ready to cooperate and synergize efforts with IRENA, REN21 and all national, regional and international stakeholders**
- **<u>We are ready to collaborate in all REDAF phases including</u> :**
  - **Pilot case studies in RCREEE countries,**
  - **Development of standard reporting template,**
  - **Regional workshops for validation/dissemination,**
  - **Regional multi-stakeholders capacity building activities,**
  - **Replication in RCREEE countries.**

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The best way to predict your future …

is to create it.

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Regional Center for Renewable Energy and Energy Efficiency

Thank You

Maged K. Mahmoud

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