

Renewable Energy Solutions for the Mediterranean Basin: why and how

Francesco Starace

**President of RES4MED and CEO of Enel Green Power
Member RIAB of IEA**

From Mediterranean Plans to RE Power Plants

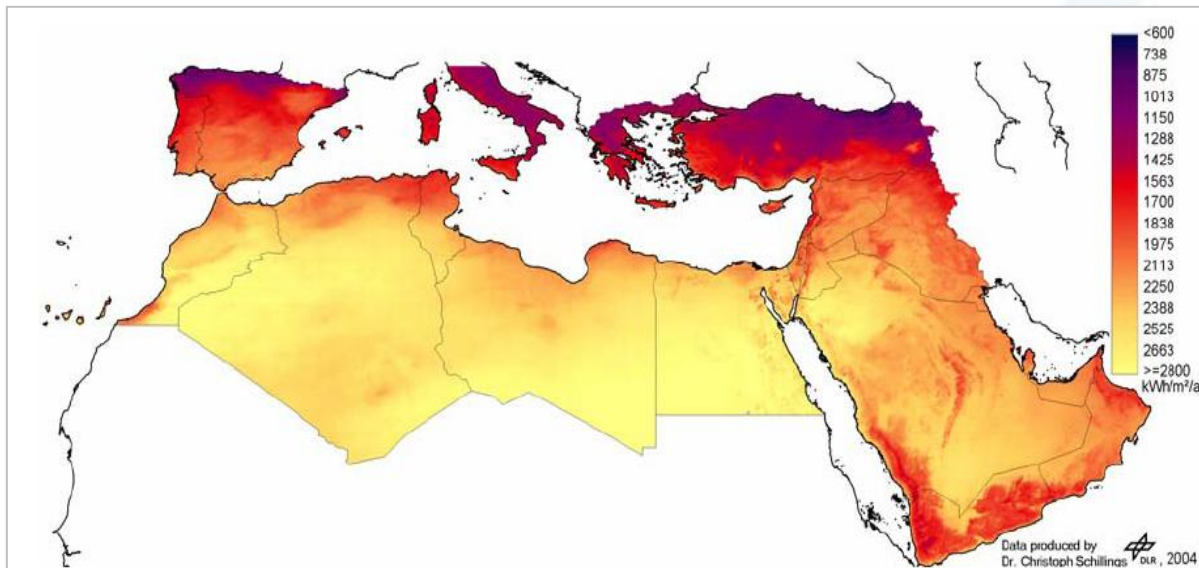
Rome, October 3rd, 2012

Agenda

1. Renewables in Med countries: evidences, barriers and priorities

2. RES4MED mission and objectives

3. RES4MED participants and main activities

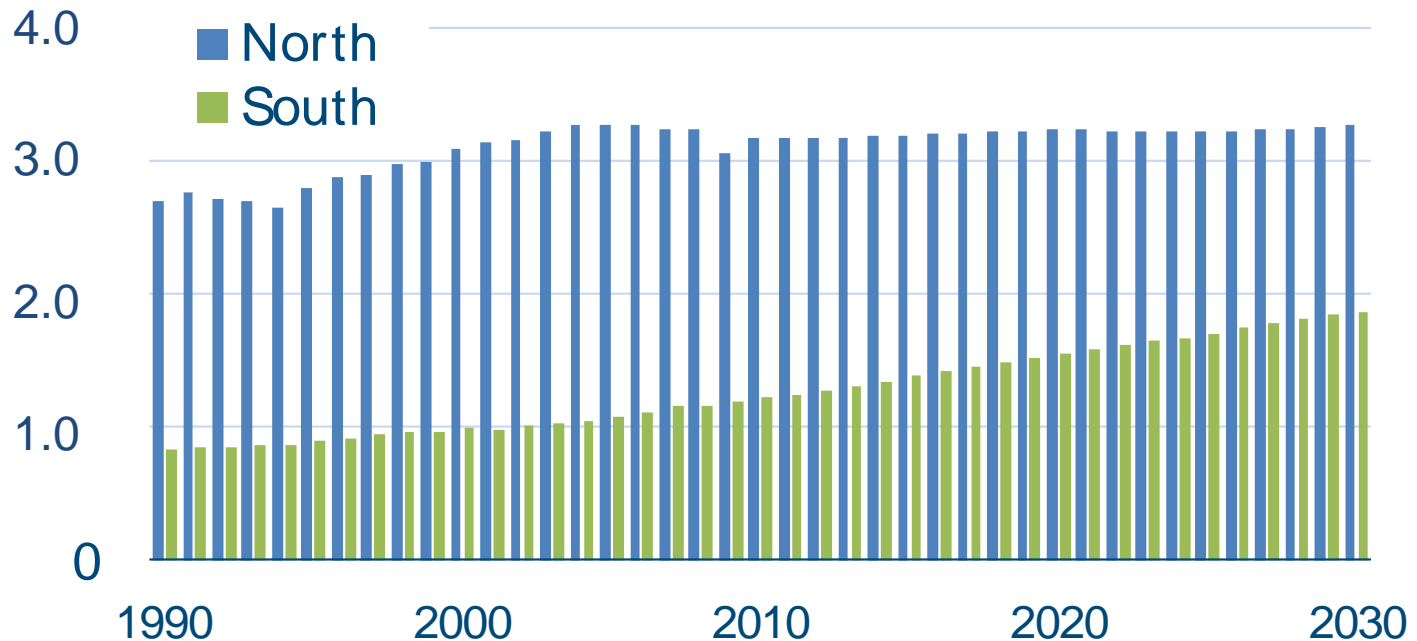


Main evidences for RE in Southern Med countries

- Continued **strong electricity demand growth** (+5% per year by 2030) and water demand due to **population increase** (+6-9% for the next 20 years, some more than 80 millions)
- Needed **180-200 GW additional power**, some **320 billions € investment** *just in the Southern Med countries and Turkey*
- **Huge potential of solar and wind resources** and very large areas of desert or arid land available
- **Priority to local economic and industrial development:** employment, know how transfer, international competitiveness
- **Security of energy supply and diversification** in an unstable political context:
 - **Extension of fossil fuels reserve** (*Producer Countries*)
 - **Vulnerability** due to **energy dependence** (*Consumer countries*)

Mediterranean energy demand per capita

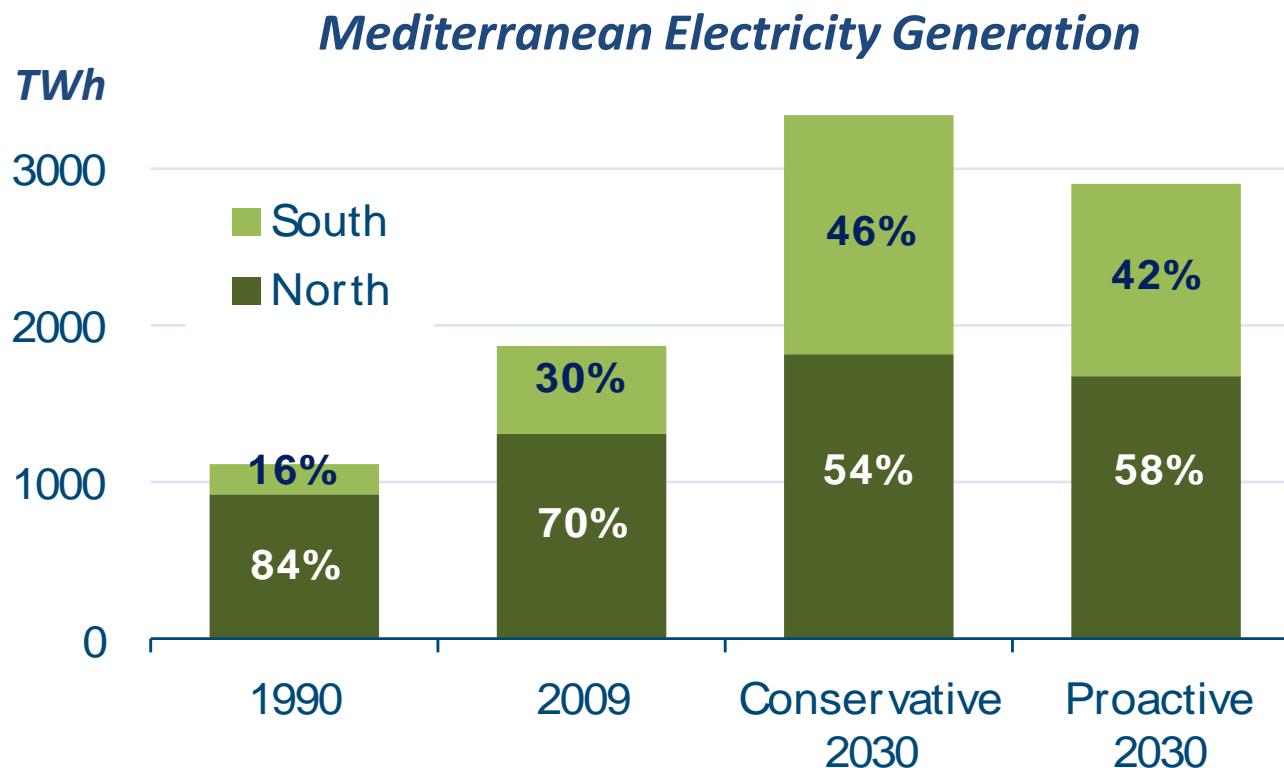
Energy Demand per capita (toe)



Energy demand per capita gap between the north and south will decrease somewhat by 2030

North will still be consuming twice as much as the South on a per capita basis (down from three times today)

Mediterranean electricity boom ahead



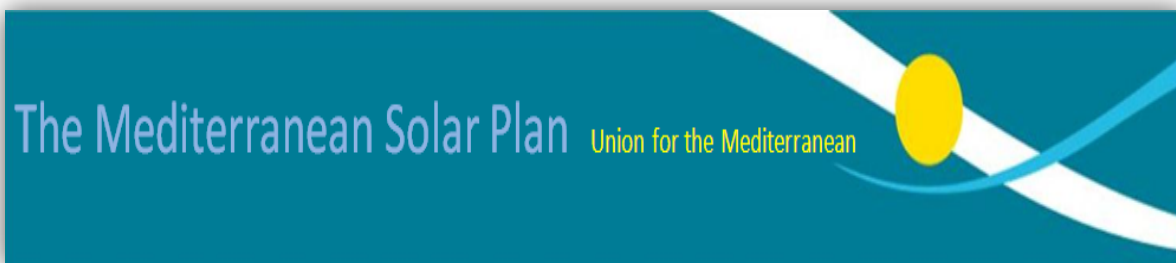
South Med electricity demand will boom at an av. growth rate of 5% p.a.

320-380 GW will need to be added through out the Mediterranean Region to meet this demand

Source: OME MEP 2011

Note: **Conservative Scenario** takes into account past trends, current policies and ongoing projects. It does not assume large-scale demand efficiency programs. **Proactive Scenario** is based on improving efficiency and exploiting renewable energy potential

Institutional Initiatives in support of National plans



2008

PWMSP

Paving the Way for the Mediterranean Solar Plan

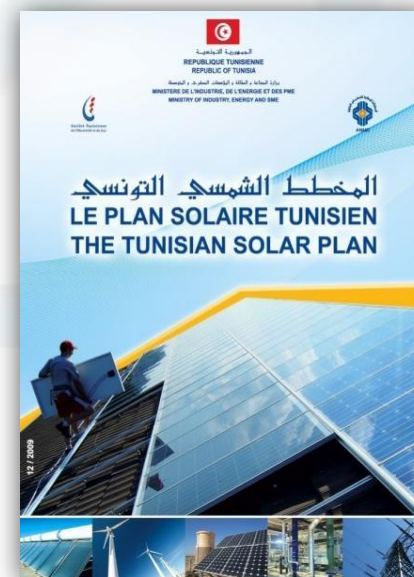
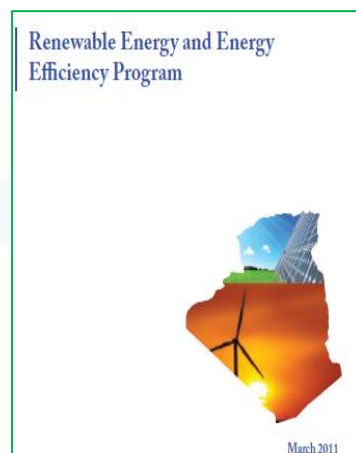
2010



2007



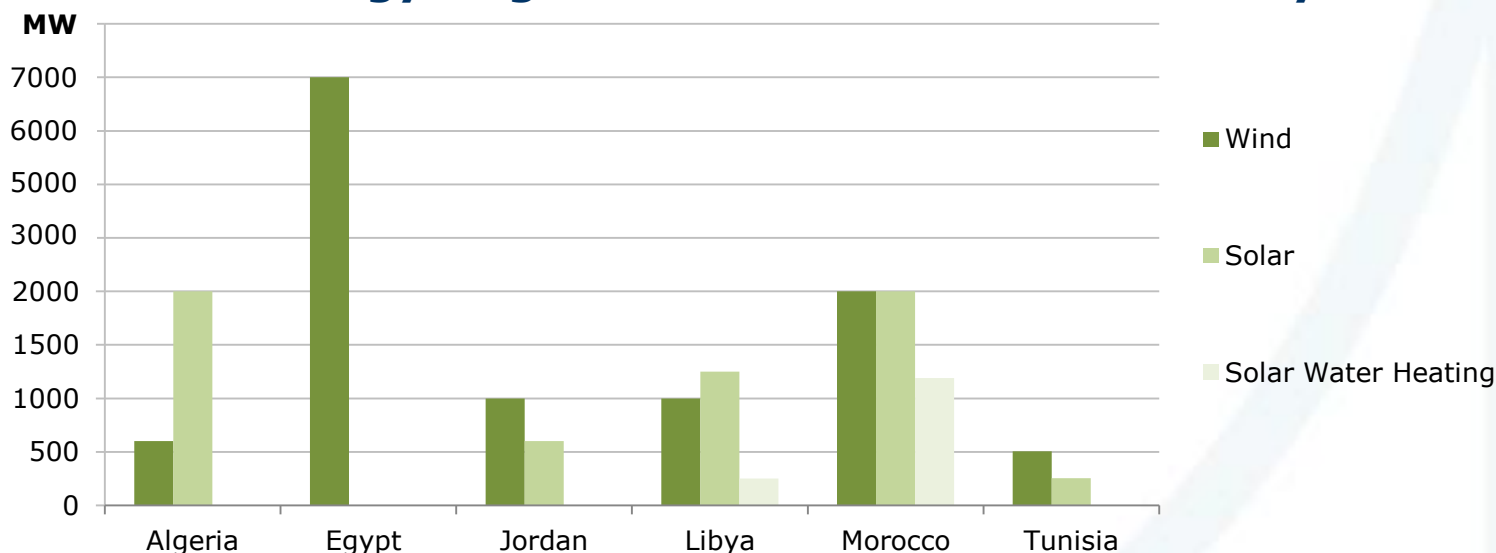
2012



RES
MED

National targets for RE in Southern countries a step change

Renewable Energy targets in North African countries by 2020



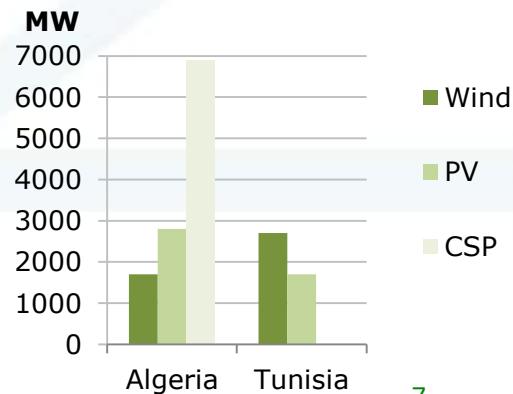
Source: Renewables 2012. Global Status Report, REN21

Source for Tunisia: Tunisian Solar Plan

...and some projections to 2030 ...

Source: Renewables 2012. Global Status Report, REN21

Source for Tunisia: Tunisian Solar Plan



RE deployment: Barriers

Market barriers

- **Lack of bankable reference projects**
- **Subsidies for conventional** energies create market distortion
- So far very little **technology transfer and capacity building**
- **Uncertain institutional, legal and regulatory framework**

Financial barriers

- **High up-front costs** for investors especially relevant for off-grid applications
- **High cost of capital** for RE investments

Other barriers

- **Grid** infrastructure & access
- Social acceptance, **permitting** etc.

RE deployment: Priorities

- An open dialogue among all stakeholders to share **options and experience**, in order to support decision makers
- Additional tools for **technology transfer** and **capacity building**, both institutional and for manager of agencies, utilities, industries
- Develop new green local solutions such as **distributed generation**, smart grids, solar heating and cooling, desalination
- Strong support from **international financial institutions**
- **Identification of concrete investment opportunities**, developing an **industrial clustering to attract investments**

Entry options for industrial investors in the Mediterranean RE market

Entry Options

- M&A, auctions and greenfield all valid
- Choose local partners to improve the risk/return profile

Technologies

- Wind, Solar PV, Solar CSP as future key technologies
- Follow the natural resource and the grid (development)

Market segments

- Identify suitable off-takers (utilities, large consumers, retail)
- Think of integrating fleets of small-sized plants and supply

Grid development

- Concentrate first on production covering local/national supply
- Mitigate the grid connection risk through proximity and size

Systemic solutions

- Lobby for Super Grids, Smart Grids, Demand Side Management
- Prepare for phase 2 of your engagement

New Industrial Initiatives were launched

To address Renewable energies deployment issues, several initiatives have been established by industrial operators to facilitate institutional and national plans.



1991



Dii
Renewable energy
bridging continents

2009



2010



2012

On going energy initiatives in MED area



Initiative	Type	Area of Activities	Technology focus	Year of foundation	N. of members
OME	Industrial	Analysis of energy Issues	All energy, RE and efficiency	1991	33
MedReg	Institutional	Regulatory framework, supporting scheme	Electricity and Gas	2007	24
Mediterranean Solar Plan	Institutional	Policy, regulatory framework, supporting scheme	Renewable deployment of 20 GW at 2020	2008	43
Desertec Industrial Initiative	Industrial consortium	Markets, transmission regulation	Renewables and infrastructures	2009	57
MedGrid	Industrial consortium	Regulation for grid access for RES producers	Grid network	2010	20
PWMSP	Institutional	Paving the way to Med Solar Plan	All renewable energies	2010	5
MedTSO	Industrial	Transmission system in the MED	TSO	2012	16

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RES4MED Mission

A transparent role of
“a network of networks”

involving key stakeholders

from North Africa, Middle East, Turkey and the Balkans

offering the **expertise, knowledge and experience** of its
members to the whole of the various initiatives

playing **a catalyzing role**
for the ongoing **Mediterranean Initiatives**

RES4MED focus

- **RES4MED**, an **organized “meeting point”**, where the **studies, analysis and strategies** of the MED associations/consortia can converge and be **shared in an innovative way** – like the ***“Knowledge Management System”*** under way
- **RES4MED is an area** for **comparing** ideas, **exchanging and discussing** different points of view, **networking** various experiences and knowledge in the MED area
- **RES4MED** aims to become **a platform for the training and exchanging** of the different **technical, institutional and administrative frameworks**
- **A promoter of studies, analysis and projects** in new fields such as **distributed generation, village power, smart cities**

RES4MED

Liaise and cooperation with ongoing MED initiatives

RES4MED intends to closely **liaise with ongoing Initiatives** by:

- **Proposing collaboration with the key Initiatives by means of MoU**, inviting their representative to sit in the Advisory Board
- **Enhancing** appropriate institutional and industrial **strategies**
- **Assessing other's activities and first results** so far achieved, and **adding value** to their lessons learned
- **Planning exchanges** and comparison of results, organizing **common events** for joint communication and dissemination
- **Creating and sharing a "*Knowledge Management System*"** to provide a comprehensive overview of what is going on

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Preliminary membership

Members

Partners

Enel Green Power, Edison, Gestore Servizi Energetici, CESI,
PricewaterhouseCoopers, Politecnico di Milano, Asja Ambiente,
Terna Plus, Fondazione U. Bordoni

Affiliates

APER - Associazione Produttori Energie Rinnovabili
RSE - Ricerca di Sistema Elettrico
Althesys













Institutions

Institutional support

Italian Ministries
(Foreign Affairs, Industry, Environment, Research)
Camera di Commercio di Milano

The Initiative is now open to international stakeholders

RES4MED first partners profile

	Member Name	Type	Sector	Areas of expertise
	Enel Green Power	Partner	Global renewable energies	All value chain of all RES
	Edison	Partner	European leading utility	Electric power and hydrocarbons
	Gestore Servizi Energetici	Partner	Agency implementation RE policies	Regulatory and market
	CESI	Partner	Energy innovation and operational improvements: consulting and testing	Engineering and Grid studies
	PricewaterhouseCoopers	Partner	Leading consulting firm	Power & Utilities
	Politecnico Milano	Partner	Leading Technical University	R&D and training
	Asja Ambiente	Partner	International developer and building of RE power plants	Biogas, wind, solar
	Terna Plus	Partner	Developing new business in the energy sector	Smart grids, RE, efficiency
	Fondazione U. Bordoni	Partner	Telecommunication & ITC application	ITC in electric markets
	APER	Affiliate	Association of Italian RE producers	Promotion and assistance
	RSE	Affiliate	Research for Italian electric system	Storage, Forecast
	Althesys	Affiliate	RE energy investment analyst	Strategic and financial analysis

A network of 12 Members (9 Partners, 3 Affiliates) with a diversified background and know-how

First priority service: a Knowledge Management System

Given its role as a “*Network of Networks*”:

RES4MED starting point is the creation of a **shared and exhaustive information platform, to be accessed by exclusive operators**, according to a cooperative and mutual exchange spirit

➡ the “*Knowledge Management System*”

- Access to qualified information through a direct link to **sites** and **databases** of initiatives/operators
- Effectiveness in **data gathering** and straightforward query criteria
- **Standardization** and **comparability** of data sources

RES4MED Knowledge Management System is aimed at:

- **Creating synergies** within a privileged network
- **Avoiding duplication** of already existing analyses
- Sharing **skills** and **know-how**
- Identifying **potential partnerships**
- Creating efficiencies in management of **development funds**

First priority service: a Knowledge Management System - Content

Specific Search

SPECIFIC QUERY

<input type="text"/>	<input type="text"/>
	INITIATIVE ASSOCIATION CONSORTIUM PROJECT NAME COUNTRY TEAM LEADER TEAM MEMBER EXTERNAL PARTNERS DATES DURATION

GENERIC QUERY

<input type="text"/>

Extraction
from a
Database of

1. Strategic information of ongoing studies



2. Specific reference projects

3. Additional documents on specific issues



Value for Partners of RES4MED

- Become part of a wide RES4MED **platform of industrial, institutional, political and financing stakeholders**
- **Interact with leading Initiatives**, Consortia, Partnerships (Desertec Dii, Medgrid, OME, Medreg, UfM, MED TSO, etc)
- **Propose and/or participate to specific projects/analyses**
- Reserved access to the "**Knowledge Management System**"
- Leverage on RES4MED brand for **communication** activities, and learning events
- Presence on the **Partners Factsheet, Annual Report and Newsletter** (in preparation)

RES4MED in support of the IEA

- Make use of the **outstanding analytical products of the IEA RE Division and the results of the cooperation agreements** on key technologies
- Engage in **providing additional visibility to IEA RE messages and their strategic recommendations**, such as roadmaps, policy deployment, scenarios *both in the Knowledge Management System, in its projects and in the broad selected Communication tools*
- Support to the IEA initiative on **Low Carbon Technology Platform and create a direct bridge with Med basin**
- Input to IEA **RE Industry Network** and the **RE Industry Advisory Board** in the Medium term market report and in new initiatives

RES4MED Next steps

- **Dialogue** with on going Initiatives and creation of **Advisory Board on 12th November at Euromed Milan**
- **Create a true** South Mediterranean and Balkans **international membership** - agencies, utilities, industries, academia
- Provide the **"*Knowledge Management System*" in operation by November**
- **Perform prefeasibility studies of new RES4MED projects** involving Med partners by spring 2013
- **Contribute to organize high level meetings** (*today with IEA and RIAB and Euromed Milan 12 November*) to discuss critical factors and propose shared solutions/options



Thanks for your attention

www.res4med.org

secretariat@res4med.org

info@res4med.org