



RENEWABLE ENERGY SOLUTIONS
FOR THE MEDITERRANEAN

Renewable Energy investments in the Mediterranean and beyond

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Milan, 30 October 2017

Vision of RE deployment in Mediterranean

Opportunities for a massive renewable deployment in Southern Mediterranean identified from 2008 on, embedding a **consistent import of energy to Europe** for their bankability



Around 2012 the vision of South Mediterranean region as a “green energy reservoir for EU” started to be challenged.

Dii: Power generation from sun and wind energy in the deserts of the Middle East and North Africa

low

Solar potential
(based on direct
normal irradiation)

**Ultimate goal: supply 15% of
electric energy needs of EU
by 2050 (100 GW).**



Indicative solar sites



Indicative wind sites



**Indicative transmission routes to
local and European markets**



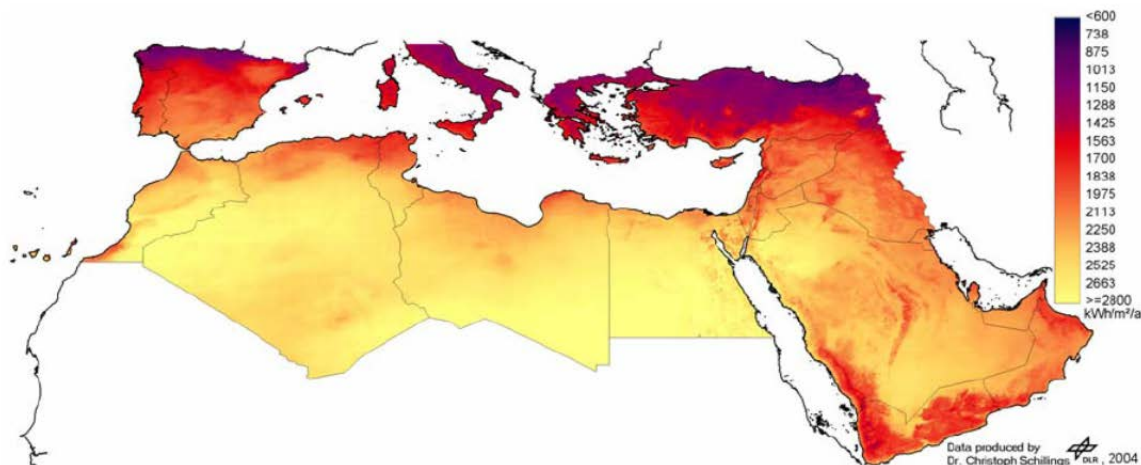
Dii

Renewable energy
bridging continents

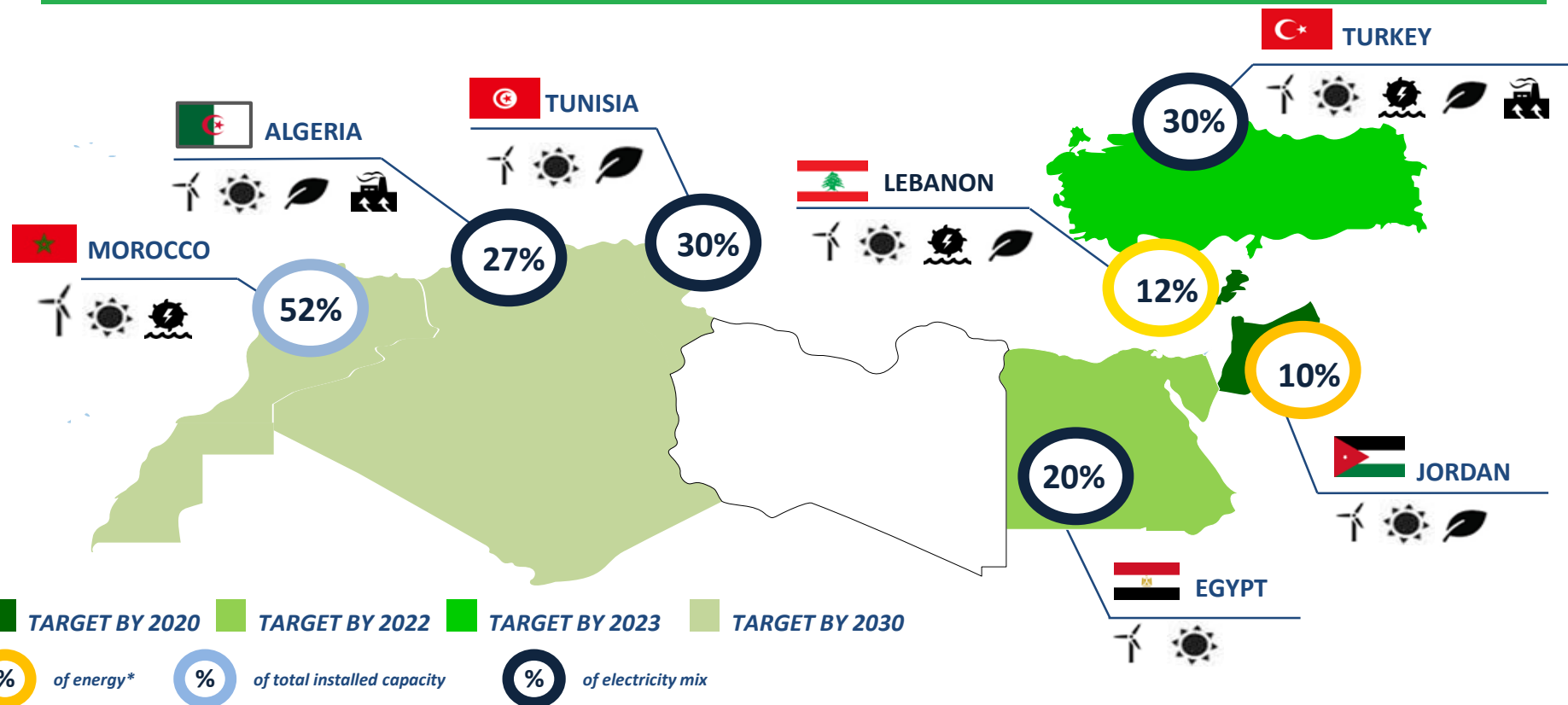
www.dii-eumena.com

Rationale for a greater the use of renewables in the South Mediterranean

- ✓ **Continued strong electricity demand growth (6% per year)** and water demand due to the population increase (6-9% for the next 20 years),
- ✓ **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*)
- ✓ **Economic and industrial development** (green economy), employment, know how transfer, international competitiveness
- ✓ **Reduction of migratory flux**, urbanization,
- ✓ **Climate change** awareness

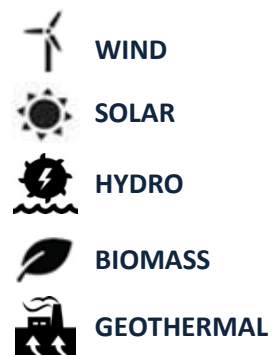


Renewable energy targets* in SEMCs



RENEWABLE ENERGY INVESTMENTS**

Cumulative public and private investments in RES power plants to reach country targets



€
10
Billion

MOROCCO

€
6
Billion

TUNISIA

€
2
Billion

JORDAN

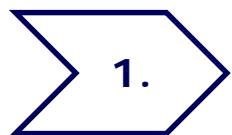
€
10 +
Billion

EGYPT

RES4MED&Africa leverages the **ongoing dynamic renewable energy context** in emerging economies by creating **a unique role** as:

- **a technology-neutral platform** and **bridge builder**;
- across **public and private actors** in **emerging markets**;
- on **sustainable energy market growth**;
- by leading **dialogue**, sharing **expertise**, and building **skills**.

RES4MED&Africa aims to create an enabling environment for renewable energy investments in target countries through 3 strategic work streams:



Acting as a connecting platform for **dialogue & strategic partnerships** between members and partners to exchange perspectives and foster cooperation;



Providing **technical support & market intelligence** through dedicated RE studies and recommendations based on members' know-how to advance RE markets;



Leading **capacity building, training & innovation** efforts based on members' expertise to enable skills and knowledge transfer that supports the long-term RE market creation;

RES4MED Members



RES4MED Members

RES4MED Members



High-level Annual conferences



2013

*"Renewable Energy **solutions** within the **MED** electricity market"*



2014

*"Delivering Renewable Energy investments in **Morocco**: Challenges and opportunities"*



2015

*"Delivering Renewable Energy investments in **Egypt**: Challenges and opportunities"*



2016

*Enhancing investments for clean tech solutions, beyond MENA **towards Africa**: challenges and opportunities*



2017

***Innovation** as the key enabler to power Africa*

... 2018

Sustainability and bankability of RE power projects

RES4MED&Africa Days

One day scouting workshops

2016 - RES4MED Day Morocco -

"Morocco and Italy for the transition to clean energy towards Africa"

2015 - RES4MED Day Egypt - "A step change in the deployment of RE solutions in the Mediterranean"

2014 - RES4MED Day Morocco -

"A step change in the deployment of RE solutions in the Mediterranean"

2016 – RES4Africa Program launch Kenya - "A step change in the deployment of RE in Eastern Africa"

2017 – RES4Africa Program Launch Ethiopia

Next steps: Jan 2018 – RES4Africa Day Kenya

In-depth 3 days Executive Seminars

Algeria Executive Seminar
In collaboration with **Sonelgaz**

13-15th February 2017



Tunisia Executive Seminar
In collaboration with **STEG**

3-5th May 2017



Next step:
Morocco Executive Seminar

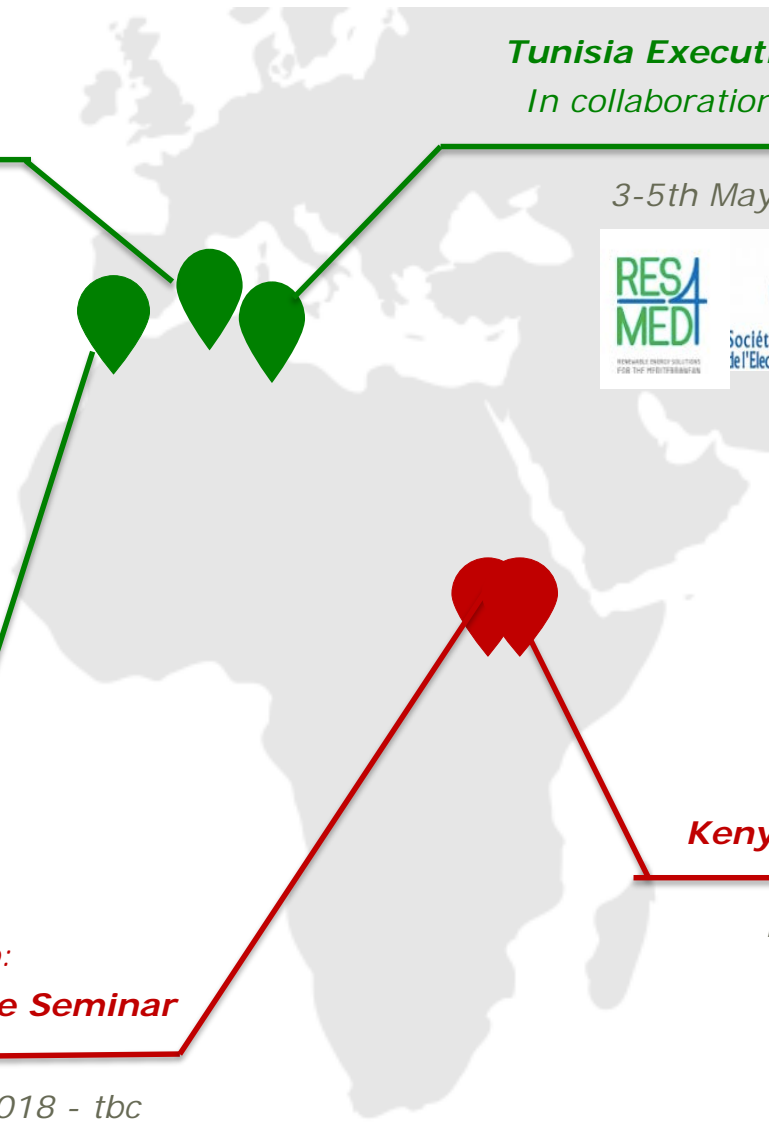
Fall 2018 - tbc

Next step:
Ethiopia Executive Seminar

II Semester 2018 - tbc

Next step:
Kenya Executive Seminar

II Semester 2018 - tbc



Country profiles

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Available on RES4MED website



***November
2015***



***March
2016***



***November
2016***

Next: Morocco, Algeria, Jordan

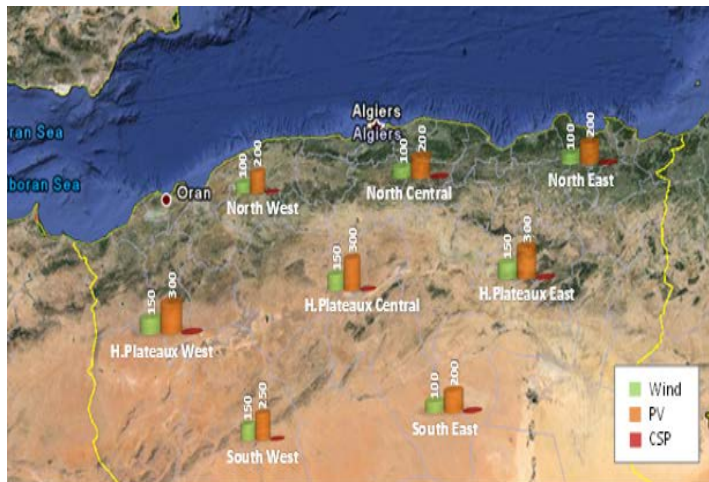
RE integration in the grid

“Integration of RE in the national electric system of Algeria”

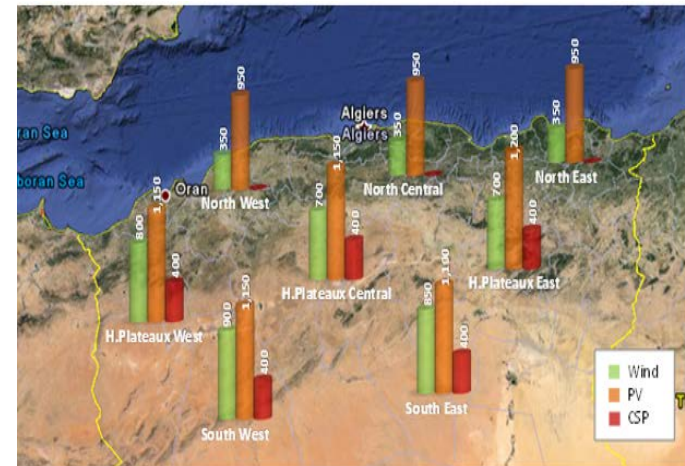


Provide an **assessment of the maximum amount of non-dispatchable renewable generation** that is possible to install in Algeria, ensuring the **reliability, integrity and efficiency of the power system**.

2020



2030

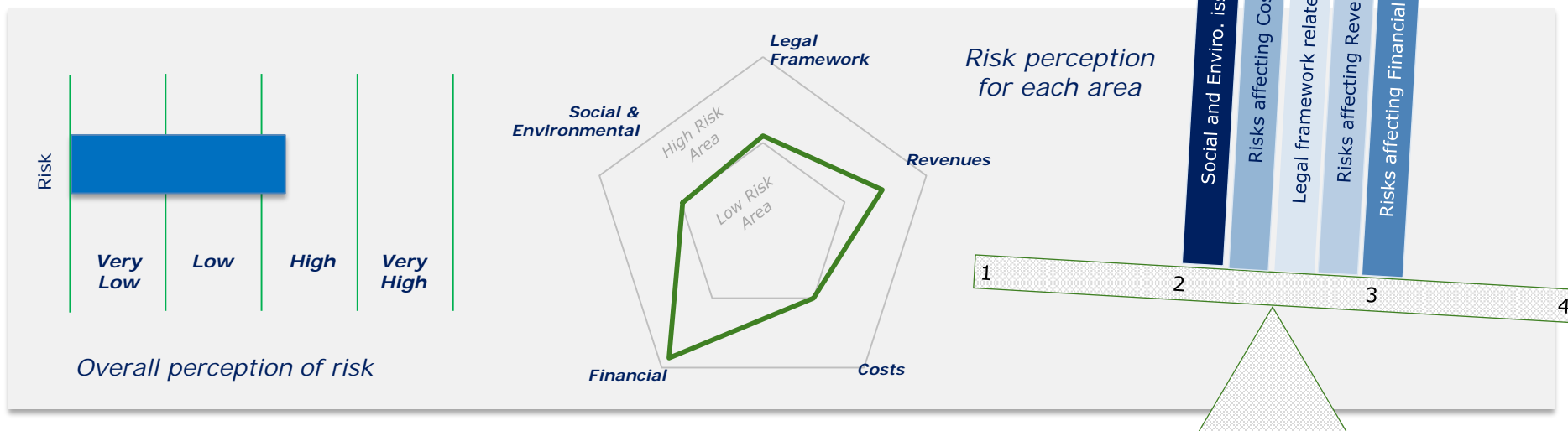


Survey on RE investment risks

In cooperation with  **pwc**

This survey aimed to create basis for an **open discussion between** the two sides of the business arena (**public policy makers and private investors**), in order to match their respective viewpoints. The **Survey participants** were composed by companies which have planned activities or are already engaged in investments, clustered into 3 stakeholders groups: industry, financial players and professional services.

*The main findings – **Egypt** example*



Available on RES4MED website

Job creation from RE

“Job creation and local content” Tunisia

Objective:

To support **MED countries** in the development of an **ideal local workforce** to **stimulate job creation and local jobs** for future renewable energy project development.

Content of the study:

1. Global **analysis of job creation** in RE sector;
2. Presentation of the **skills needs** in RE project;
3. Study Case : job creation on wind project development;
4. **Country focus** : presentation of the **current workforce and recommendations**.



Next: Algeria

Successful RE auctions

“Key factors for successful renewable energy auction” Algeria

Auction schemes considered as a successful free-market support scheme by governments to **attract competition-based RE investments through low prices.**

Objective:

To support Mediterranean countries in **structuring the tenders adapted to their contexts and attractive to foreign investors.**

Content of the study:

1. General presentation of the tender development framework;
2. **Analysis of the country's tender;**
3. Expert opinion and **recommendations.**



Introduction

RES4MED&Africa in partnership with **Enel Foundation** and in collaboration with **Politecnico di Milano**, organizes the training course "Deployment of RE solutions: challenges and opportunities"

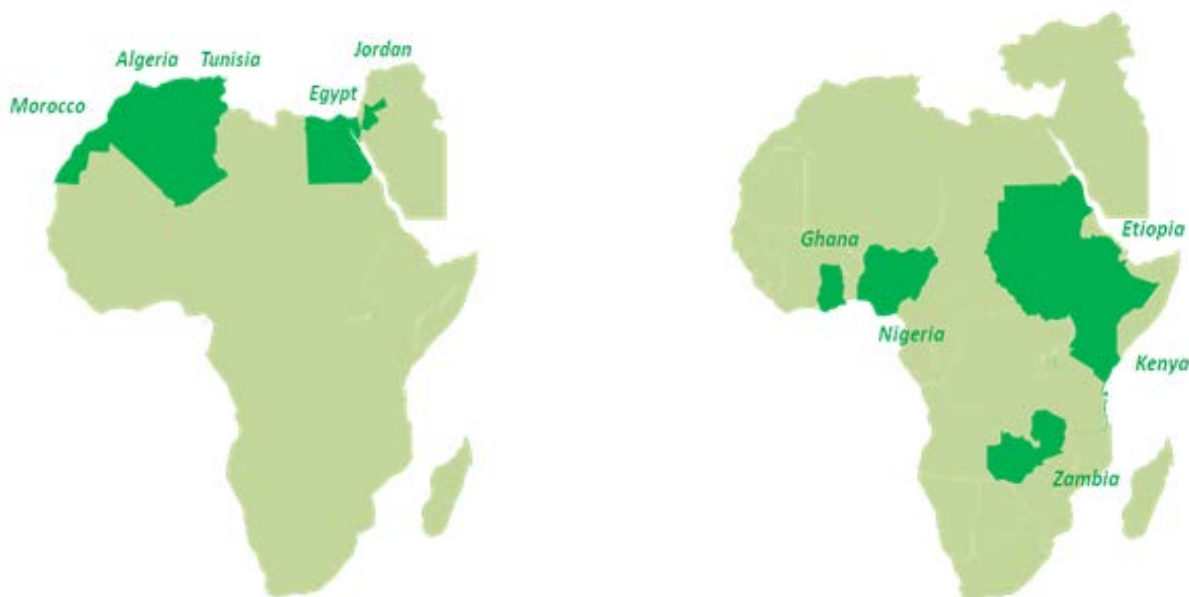
Aim

Providing participants with a set of **technical, economic and regulatory core competences and advanced tools** to assess and deploy the most appropriate solutions in different energy contexts for an efficient and effective integration of RE in emerging electricity markets, whilst nurturing an international network of experts

Target audience

High-achieving individuals -35- serving in public institutions, energy companies, energy centers, universities and research agencies, operating in MENA and SSA countries.

Selected participants IV Edition



Out of 120 candidates...

MENA

The participants for MENA come from Algeria (2), Egypt (4), Jordan (2), Tunisia (4), Morocco (8)

SSA

The participants for Sub Saharan Africa come from Kenya (6), Ethiopia (6), Nigeria (1), Zambia (1) and Ghana (1)

Structure

Lectures on the main **technical**, **regulatory** and **economics** features of electricity markets and associated topics given by qualified international experts, academics and highly skilled technicians. The ATC encourages participants to explore **multidisciplinary approaches** mainly integrating:

- **theoretical and academic sessions**
- **market perspective and industrial view**

The course also foresees energy sites visits and relevant technical explanations, to innovative laboratories and to renewable power plants

Technical and Regulatory lectures	will be held at Politecnico di Milano
Economics lectures	will last two days and will be held at Università Luigi Bocconi
Sites Visits	CESI Headquarter JRC ISPRA

Presentations available on RES4MED website

RES4MED activities 2017 – 2018

Morocco – Algeria – Tunisia

	Morocco	Algeria	Tunisia
Dialogue & strategic partnerships	Closed-door event on Moroccan liberalization Study (Feb 2018)	MoU RES4MED - Sonelgaz (signed in May 2015. Ongoing revision)	MoU RES4MED- STEG-ER (signed in May 2016)
	MoU RES4MED – ONEE (I Semester 2018)	Technical assistance for EU program to support RE sector (EoI expected end 2017)	Closed-door discussion meeting on the auction study (Oct 2017)
	EE business opportunities (2018)		
Technical support & market intelligence	Liberalization Study (Sep, 2017 - Feb, 2018)	Auction Study (Nov 2017 - Feb 2018)	Auction study (Completed)
	Country Report (I Semester 2018)	Job-creation study (I semester 2018)	Job creation study (Completed)
		Internal Market Study (I Semester 2018)	
Capacity building, training & innovation	Morocco and Africa training course <i>In preparation</i>	Algeria Executive Seminar follow-up (2018) Ad-hoc high-level seminar addressed to engineers and middle managers	Tunisia Executive Seminar (end 2017/2018) Open-door 1-day seminar to present the job creation study and auction study (focusing on the Concession Scheme)

Find more about us ...

RES4MED Renewable Energy Solutions for the Mediterranean

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