

Kingdom of Morocco  
Ministry of Energy,  
Mining, Water and  
Environment



المملكة المغربية  
وزارة الطاقة  
والمعادن والماء  
والبيئة



Bundesministerium  
für Umwelt, Naturschutz  
und Reaktorsicherheit

# 5<sup>th</sup> MIDDLE-EAST AND NORTH AFRICA RENEWABLE ENERGY CONFERENCE TOGETHER, FOR TOMORROW'S ENERGY



MARRAKECH - 15 & 16 MAY 2012





It is a great honour to welcome you to the Kingdom of Morocco which is the host of the 5th edition of the Middle-East North Africa Renewable Energy Conference (MENAREC 5).

This 5th edition of the MENAREC, which is the continuation of the meetings initiated in 2004 in other countries of the MENA region and testifies of the growing awareness on the stakes that renewable energies represent, comes at time of profound changes in the global energy sector.

In the face of both climatic and energetic, constraints and uncertainties, the strong growth of energy demand in the countries of the MENA region and a sustained and volatile increase in the prices of fossil fuel, the use of renewable energies has become a necessity rather than a choice, which will increase energy security, insure an orientation towards more sustainable and safe energy systems, create employment and allow to meet the challenges of climatic changes.

Several countries of the MENA region have already engaged themselves on this path by integrating renewable energies in their energetic portfolio and by promoting energy efficiency.

These countries have made praiseworthy efforts to put in place institutional, legal and governance frameworks favouring the use of renewable energies and the promotion of energy efficiency, of research and innovations, and allowing for closer cooperation with the private sector. These reforms allowed the emergence of an environment that favours investments in the energy sector, the adoption of incentive tariff systems for energy products, as well as the implementation innovative financial mechanisms and instruments.

In Morocco, in accordance to the priorities of the implemented energy strategy, we have initiated the construction of major projects and the adoption of ambitious reform allowing an accelerated implementation of renewable energy technologies, a voluntary promotion of energy efficiency, the mitigation of climate change, and regional market integration.

The strong potential of renewable energies and energy savings in the MENA region and the great technological developments realised in recent years make this a resource ready to be used.

However, these options appear to be under-explored. The challenges of the region will be the large scale generalisation of successful experiences and the creation of a Mediterranean market for renewable energies and energy efficiency.

The success of this energetic transition will be accelerated by all the regional and international initiatives and processes in the energy sector favouring cross-regional dialogues, cooperation and inter-regional coordination. This will allow the integration of renewable energy and energy efficiency in a greater regional vision and make the most of potential synergies and scale up effects.

Aware of these challenges and opportunities, Morocco, together with the countries of the MENA region and the EU, will make this meeting in Marrakech, a milestone in the process of reforming the energy sector for an integrated, harmonious and sustainable socio-economic development of the countries of the MENA region.

I wish the MENAREC 5 every success, and I am convinced that this conference will lead to recommendations that will allow us to strengthen our cooperation and establish operative partnerships in order to accelerate the energetic and economic integration process we all aspire to.

**Fouad DOURI**

Minister for Energy, Mines,  
Water and the Environment  
Kingdom of Morocco



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Dear participants of the MENAREC 2012 Conference,

It is my honour and pleasure as partner country to the Kingdom of Morocco to welcome you in the name of the German Federal Ministry for the Environment, Nature Protection and Nuclear Safety (BMU) and the German Federal Environment Agency (UBA) to the 5th MENAREC 2012 conference in Marrakesh.

The 5th MENAREC conference hosted by the Moroccan Ministry of Mines, Energy, Environment and Water (MEMEE) has ambitious goals. It aims at promoting regional EUMENA partnerships in renewable energy, fostering the development of renewable energy technologies in the region, discussing challenges and identifying options to enhancing the deployment of renewable energy as a sustainable and economic viable energy in the EUMENA region.

The MENAREC conference was initiated in 2004 in Yemen as a regional event to prepare the “renewables 2004” international conference in Bonn, Germany, that mapped the path to an accelerated deployment of renewable energy in a global perspective. Today we are proud that 95 countries have ratified the Statute of the International Renewable Energy Agency (IRENA) founded in Bonn in January 2009.

Those who participated in the previous MENAREC conferences in Yemen, Jordan, Egypt, and Syria will remember the open and enthusiastic conference spirit. We have since then observed a very positive dynamic in the field of renewable energy in the MENA region. All countries have formulated renewable energy targets, almost all have established an institution for the promotion of renewable energy and have eased the access of private producers of electricity to the market, some have introduced support instruments and programmes for renewables and the number running large renewable projects is rising. We want to use the time here in Marrakesh to take steps forward and wish to contribute to finding solutions for an environmental sound, secure and affordable energy supply not only in the EUMENA region but also globally.

Yours sincerely

**Jochen Flasbarth**

President of the German Federal  
Environment Agency

## SUMMARY

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ACRONYMS

THESE	Solar water heater
CSP	Concentrated solar power
DII	Desertec Industrial Initiative
EE	Energy Efficiency
ER	Renewable Energy
EU	European Union
GEF	Global Environment Fund
GHG	Greenhouse Gases
MENA	Middle-East and North Africa
MENAREC	Middle-East and North Africa Renewable Energy Conference
MSP	Mediterranean Solar Plan
Mtep	Million de tonnes équivalent pétrole
Mtoe	Million of Tons of Oil Equivalent
PV	Photovoltaic
REN21	Renewable Energy Policy Network for the 21st Century
REEEP	Renewable Energy and Energy Efficiency Partnership
REEGLE	Information Gateway for Renewable Energy and Energy Efficiency
TCo2	Tons per CO2
TWh	Terawatt-hour
WREN	World Renewable Energy Network.

PROGRAMME

15 MAY 2012

- 08h30-09h30 Registration
- 09h30-10h15 Plenary session 1.1 Opening ceremony
- 10h15-10h45 Coffee break
- 10h45-12h30 Plenary session 1.2 Renewable Energy : Prospects and challenges of regional cooperation
- 12h30-14h30 Lunch
- 14h30-18h00 Topical workshops : Five parallel sessions
- Coffee break from 16.00 to 16.30
- Workshop I : What are the policy options for an accelerated deployment of renewable energy in the EU-MENA region ?
- Workshop II : Training, R&D, and innovation : How to allow for technology acquisition in the MENA region ?
- Workshop III : How to allow for industrial integration and job creation in renewable energy projects in the MENA region ?
- Workshop IV : For a sustainable development through renewable energy in the MENA region -what kind of sectorial integration ?
- Workshop V : State of the art of renewable energy technologies and suitable options for the MENA countries.
- 21h00 Gala Diner

16 MAY 2012

- 09h00-10h30 Plenary Session 2.1 Renewable Energy : Financing
- 10h30-11h00 Coffee break
- 11h00-12h30 Plenary session 2.2 Prospects and challenges for a regional EU-MENA grid and market integration.
- 12h30-14h00 Lunch
- 14h00-15h30 Plenary session 2.3 Summary of conference results
- 15h30-16h00 Coffee break
- 16h00-17h30 Plenary session 2.4 Closing ceremony & presentation of MENAREC 5 declaration

PLEASE FIND A DETAILED LIST OF SPEAKERS IN YOUR CONFERENCE KIT



## I -THE DEPLOYMENT OF RENEWABLE ENERGY IN THE MENA REGION

Globally renewable energy (RE) deployment has expanded significantly during the past decade. The strong growth in energy demand in particular in the emerging countries, the volatility in oil prices, the impacts of climate change and nuclear risks have accelerated this trend : global investment in the R.E. in 2010 reached a record of \$ 211 billion, 5 times more than in 2004. RE is said to have provided 16% of final energy consumption and almost 20% of global electricity production (REN21). The MENA region followed this trend.

For the countries of the MENA region, the use of RE represents :

- An opportunity to make use of the great potential offered by renewable energy resources in the region (particularly solar and wind) :
  - > The potential of the MENA region for the production of solar energy is remarkable with an annual global radiation between 4 and 8 Kwh/ square meter.
  - > The wind potential of the region is particularly substantial in three countries, namely Oman, Egypt and Morocco, where the wind speed reaches 8-11 m / s.
- A mean to cope with the high energy demand in the region and with the lasting and volatile increases in fossil fuels prices.
  - > In recent years, the price of a crude barrel exceeded by far, repeatedly and over long periods, the \$100 threshold with large and unpredictable fluctuations.
- A way to limit the dependence of the countries of the MENA region on fossil fuels : On the one hand, a diversification of energy production of oil and gas rich countries. On the other hand, a reduction of dependence on fossil fuel imports for countries importing these fuels.
  - > Although the MENA region has 57% of the world's oil reserves and 41% of the gas reserves, only a few countries in the region dispose of these reserves. Other countries are importers of fossil fuel resources and are thus directly subject to the rules of the market and to its fluctuations and hazards ;
  - > Through RE, the oil and gas producing countries will attain more economic diversification and more independence from their ending fossil fuel resources.
- An opportunity for the MENA region to develop new industries with new jobs and positive socioeconomic spinoffs :
  - > The development of green industries to accompany a significant RE / EE momentum may positively affect the local economies of the MENA countries.

- An opportunity to rise on the world scene of renewable energy producers. Renewable energy could become the basis of low-carbon green economies in the MENA countries.
  - > RE sources have experienced a great development over the last years. The production of electricity coming from RE grew by 17.8% between 2005 and 2009. Today, renewable electricity accounts for 19.3% of worldwide electricity production. Hydro energy so far remains the major source of electricity. The other forms of (non-hydraulic) Renewable Energy have however increased by 73% between 2005 and 2009. The production of heat coming from Renewable Energy grew by 5.9% during the same period. The production and use of biofuels also grew significantly. In 2009, it amounted to 3% of the fuels used globally in transportation.
- A mean to mitigate global GHG emissions and to combat the negative impacts of climate change. The MENA countries could also benefit from the climate financing facilities that are devoted to climate change mitigation.
  - > The GHG emissions of the MENA countries were estimated in 2004 at 1.8 billion TC02, i.e. 4.5% of global emissions. 40% of these emissions were due to the electricity and heat production sector, where RE could provide great mitigation opportunities in the region with hydro, solar and wind energy (Figure 1).
- An opportunity for the MENA countries to benefit from their beneficial geographical position for cooperation with other regions that dispose of financing instruments and proven RE technologies, in particular with the European Union.
  - > The EU accounts for a large share of installed renewable energy capacity. Within the EU, RE accounted for nearly 41% of newly installed electricity production capacity in 2010 ;
  - > The EU has set a 20-20-20 goal aiming at improving energy efficiency by 20% and at increasing the share of renewable energies by 20% by 2020.
  - > In terms of the EU's and the MENA region's Renewable Energy potential, there is complementarity : Reserves in Biomass, Hydropower, and Geothermal energy that are rather present in the Northern countries of the Mediterranean, while reserves of solar energy that are rather present in the South ;
  - > The Mediterranean Solar Plan (MSP) is a framework where a EU-MENA cooperation on Renewable Energy began to take shape in recent years (See Box 1, Figure 3)
- An opportunity for wider EU-MENA integration in the field of Energy, for instance through bilateral energy agreements.

<sup>1</sup> IEA-2011, « Deploying renewables »

<sup>2</sup> Paquet climat-Énergie, article 9 de la directive européenne

<sup>3</sup> IEA-2011, « Deploying renewables ».

<sup>4</sup> Paquet climat-Énergie, article 9 de la directive européenne

Figure 1 : GHG emissions of the MENA countries in 2004. Distribution by sectors<sup>1</sup>

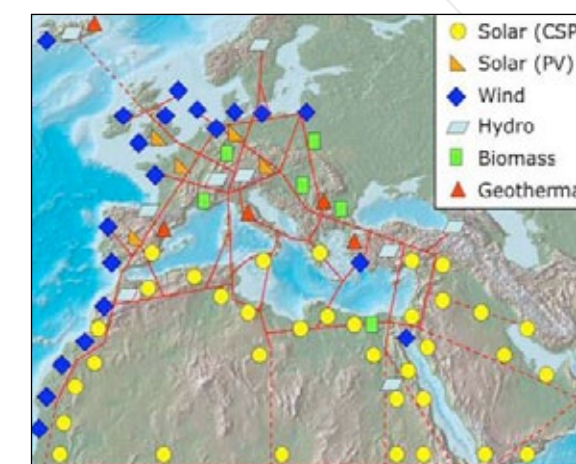
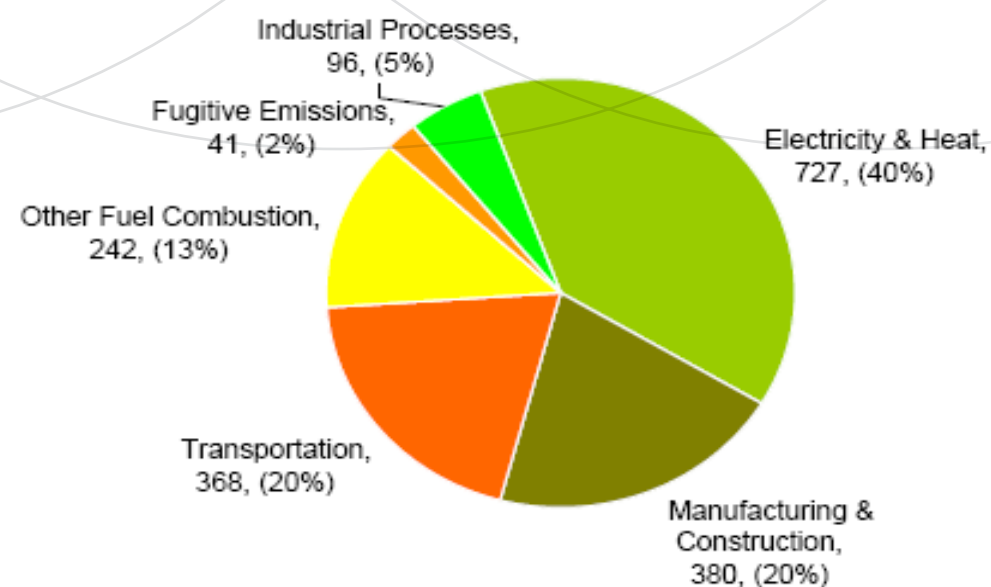


Figure 3 : Mediterranean Solar Plan with 6 technologies

#### Box 1 : Mediterranean Solar Plan (MSP)

The Mediterranean Solar Plan (MSP) is an initiative of the Union for the Mediterranean (UfM). Its main goal is to pave the way for a large-scale process of technology deployment, use of renewable energy and improvement of energy efficiency around the Mediterranean. This ongoing process of implementation requires first :

- The establishment of a common road map in the medium term (the master plan) outlining the necessary steps to be undertaken,
- The development of innovative support tools,
- The launch of the implementation of individual pilot projects.

The MSP should contribute to the following objectives :

- The establishment of additional low-carbon electricity production capacity in the Mediterranean of 20 GW in 2020 (particular through solar energy)
- The export of some of the produced electricity to the EU,
- The promotion of energy savings and energy efficiency in all Mediterranean countries.

A MSP master plan is being developed by working groups by experts from the countries of the UfM region. The structure of this plan covers the following aspects :

- issues related to the policy and regulatory framework,
- systems of funding and assistance,
- physical infrastructure,
- industrial policy and employment policy,
- knowledge transfer and capacity building.

The finalization of the master plan (from a technical standpoint) is scheduled for late 2012. After its finalization, the text will be submitted for formal adoption to the Energy Ministers of the UfM.

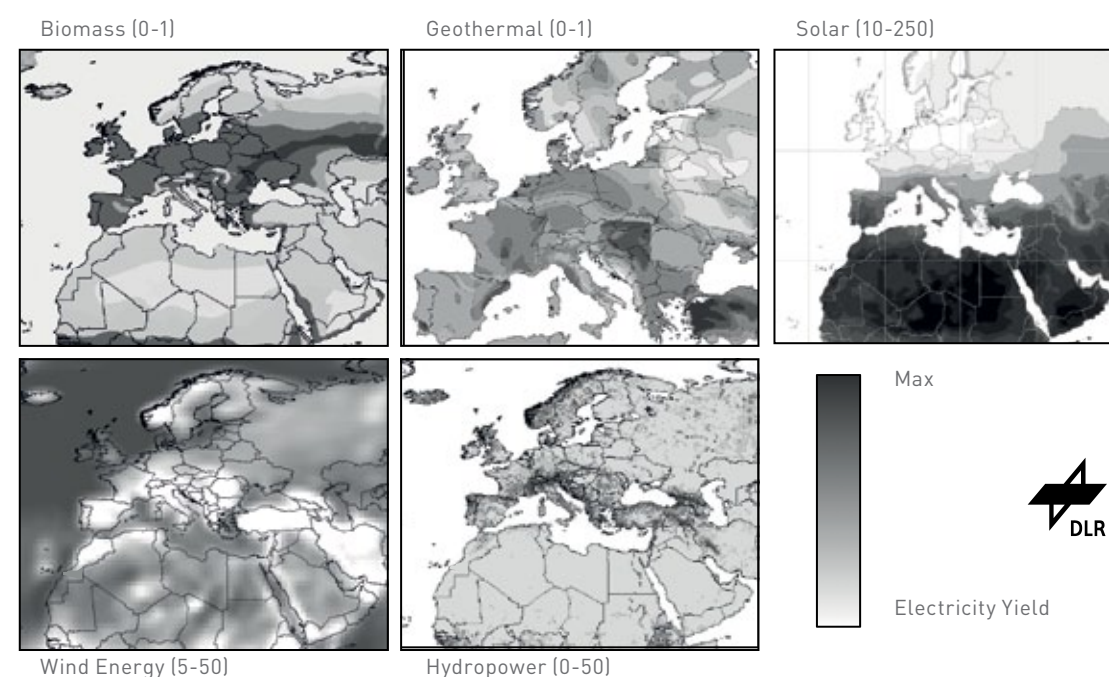


Figure 2 : Win-win potential for EU – MENA through RE<sup>2</sup>

<sup>1</sup> Middle Eastern and North African Carbon Forum 2009, "Preliminary Inventory of Potential CDM opportunities in the MENA region", Cairo, May 06-07, 2009.

## II -THE DEVELOPMENT OF RENEWABLE ENERGY IN THE MENA REGION

Since 2000, aware of the challenges and opportunities posed by Renewable Energy, several countries in the MENA region have adopted ambitious policies in this field and started their implementation. In this sense, significant improvements were carried out in particular in connection with the institutional, regulatory and financial frameworks.

### ELECTRICITY PRODUCTION

In 2009, the renewable electricity production capacity was estimated for seven MENA countries (Algeria, Saudi Arabia, Egypt, United Arab Emirates, Israel, Morocco, Tunisia) at 581Twh. Between 2000 and 2009, the production capacity for these countries grew by 6.3% / year. However, in 2009 Renewable Energy represented only 3.5% of their total electricity production. (Figure 4)

Whereas the overall development of electricity production for the 2000-2009 period was 6.3%, the development achieved with Renewable Energy was limited to 1.95% for the same period. However, the increase of electricity production based on Renewable Energy (excluding hydropower) was by 25%. However, this production remained concentrated in 4 countries, namely Israel, Morocco, Egypt and Tunisia. (Figure 5)

Some studies suggest that the electricity production potential from Renewable Energy for these seven MENA countries will be at 1552 TWh in 2030, that is to say 2.67 times that of 2009 in total. Electricity production from CSP would represent 37.5%, from PV 19.5%, from wind energy 15% and from hydropower 5%. The future for the region in terms of use of renewable energy for electricity production remains therefore very promising. (Figure 6)

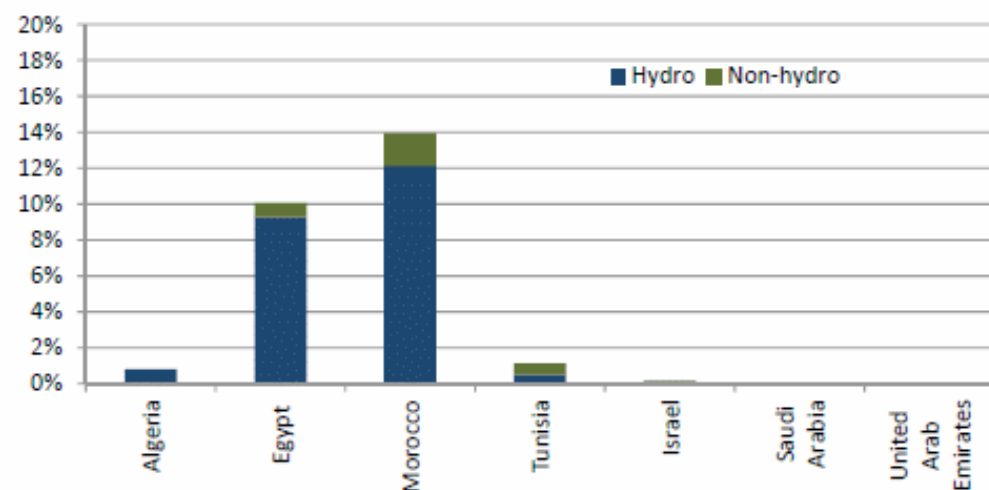


Figure 4 : Share of renewable electricity in the electric mix of seven countries in the MENA region in 2009<sup>6</sup>

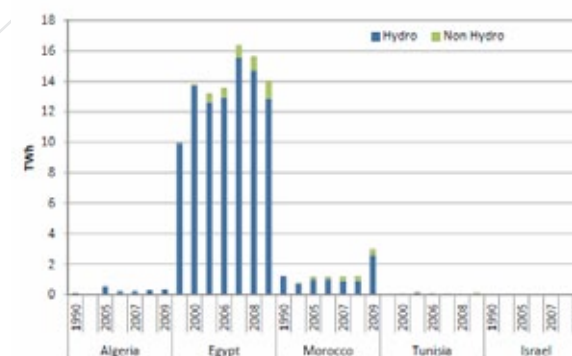


Figure 5 : Electricity generated by RE in 7 countries of the MENA region until 2009<sup>6</sup>

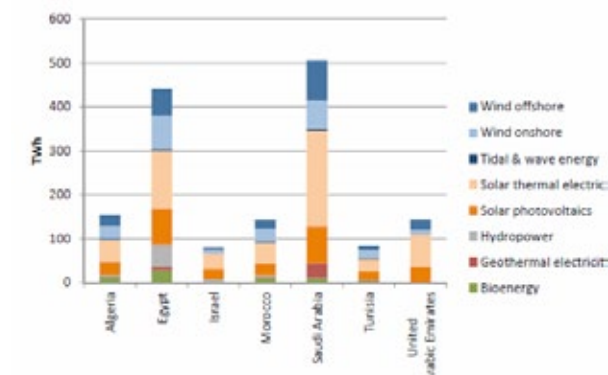
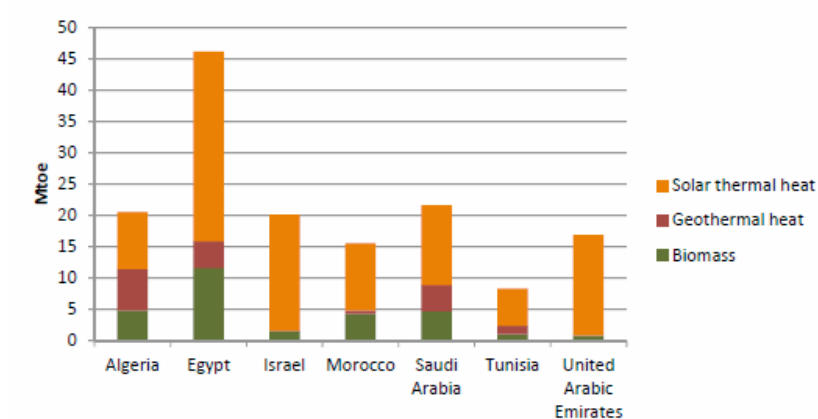


Figure 6 : Prediction of renewable electricity potential for 7 MENA countries in 2030

### HEAT PRODUCTION

In 2009, the consumption of heat in 7 countries of the MENA region (Algeria, Saudi Arabia, Egypt, United Arab Emirates, Israel, Morocco, and Tunisia) represented about 87.6 Mtoe. This consumption increased by 47% since 2000. The increase was mainly due to heat production from oil (46.7%) and gas (48%). Renewable Energy accounted for 4.8% to the final consumption of energy for the production of heat : 3.6% for bioenergy and 1.2% for solar and geothermal. Therefore, the share of Renewable Energy in this sub-sector remains weak.

The potential estimated for 7 MENA countries in heat production in 2030 is 12 830 ktoe. (Figure 7)



Source: IEA analysis based on data from IEE (2010).

Figure 7 : Prediction of heat production potential from Renewable Energy for 7 MENA countries in 2030.

<sup>6</sup>IEA 2011, "Renewable energy markets and prospects by region



# Le Maroc de demain a besoin de réponses durables.

C'est pourquoi nous les bâtissons dès aujourd'hui, avec nos clients au Maroc.

Et c'est aussi pour cette raison que notre technologie est conçue pour durer et préserver les ressources naturelles, que nous aidons nos clients à réduire leurs émissions de CO<sub>2</sub>, que nous imaginons des solutions innovantes pour relever les défis de notre temps avec un portefeuille environnemental qui compte parmi les plus vastes au monde.

Ainsi, nous occupons la première place à l'indice Dow Jones de durabilité dans notre secteur d'activité. Et le Carbon Disclosure Project, organisme indépendant qui collecte des informations sur les changements climatiques liés à l'activité des entreprises, a reconnu l'excellence de notre action en faveur du développement durable.

Toutefois, nous n'avons jamais prétendu avoir réponse à tout. C'est pour cela que, depuis plus de 50 ans, nous travaillons avec nos clients au Maroc. Nous aidons à développer les infrastructures au Maroc, en y promouvant le développement de compétences et en encourageant une croissance économique durable par le biais de projets menés à bien sur l'ensemble du pays. Dans les domaines de l'énergie, de l'industrie et de la santé.

Nous œuvrons aujourd'hui à l'élaboration de solutions durables pour le Maroc de demain.

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## INSTITUTIONAL, LEGAL AND FINANCIAL ASPECTS

Several countries from the MENA country have taken, significant steps during the past decade to provide renewable energy producers with an attractive institutional, legal and financial framework for their investments.

Thus, one can note that out of the ten MENA countries covered by an analysis made in July 2011 :

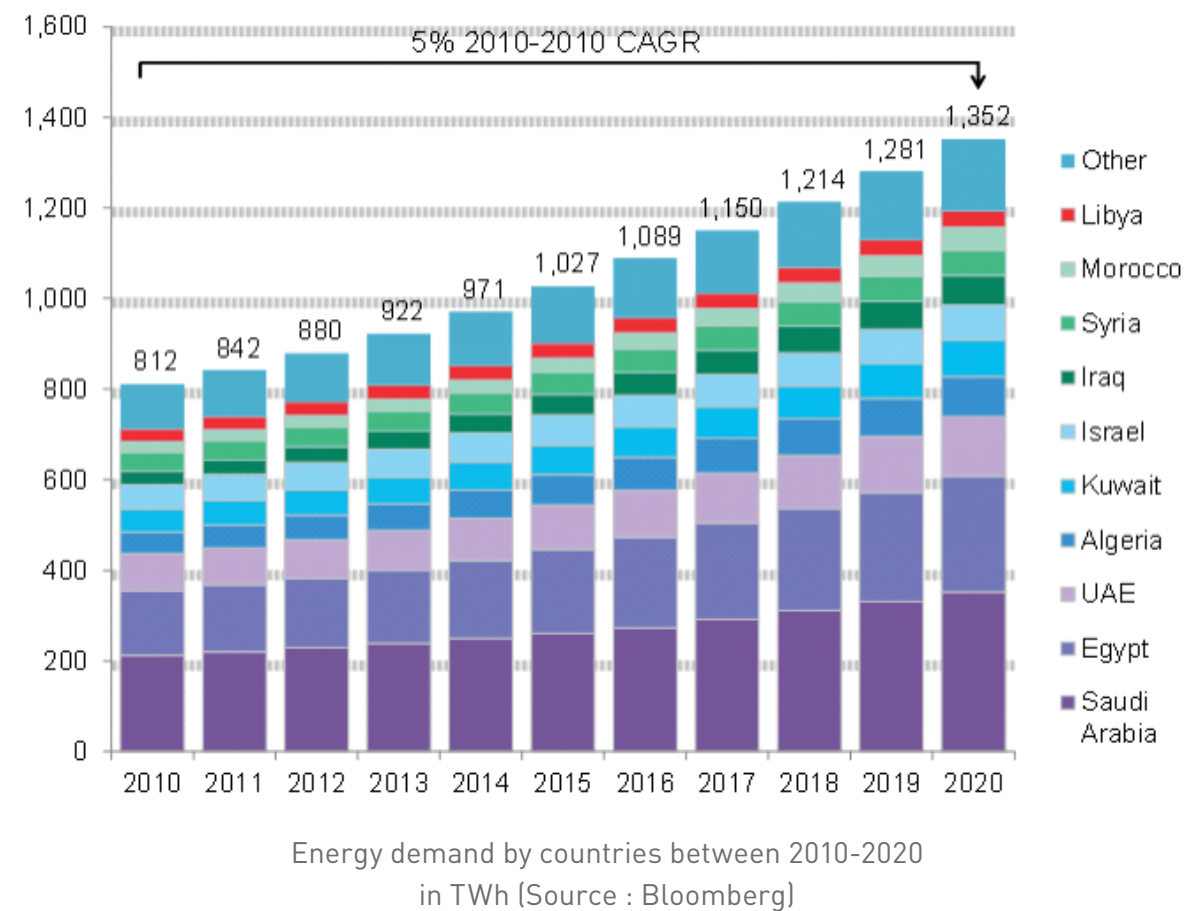
- > 100% of the countries have adopted quantitative targets for the development of Renewable Energy ;
- > 90% of the countries have set up an agency dedicated exclusively to RE and EE ;
- > 80% of the countries have established frameworks for private companies to produce electricity for their own needs, sometimes with the opportunity to sell auto-production surpluses to the national electricity market.
- > 70% of the countries have implemented laws allowing private RE producers to access the national electricity grid.
- > 70% of the countries have adopted legislation on Renewable Energy and Energy Efficiency.
- > 60% of the countries have introduced promotion schemes for Renewable Energy, namely feed-in tariffs, tax rebates, or purchase guarantees for the generated renewable electricity.

These initiatives remain relatively unused :

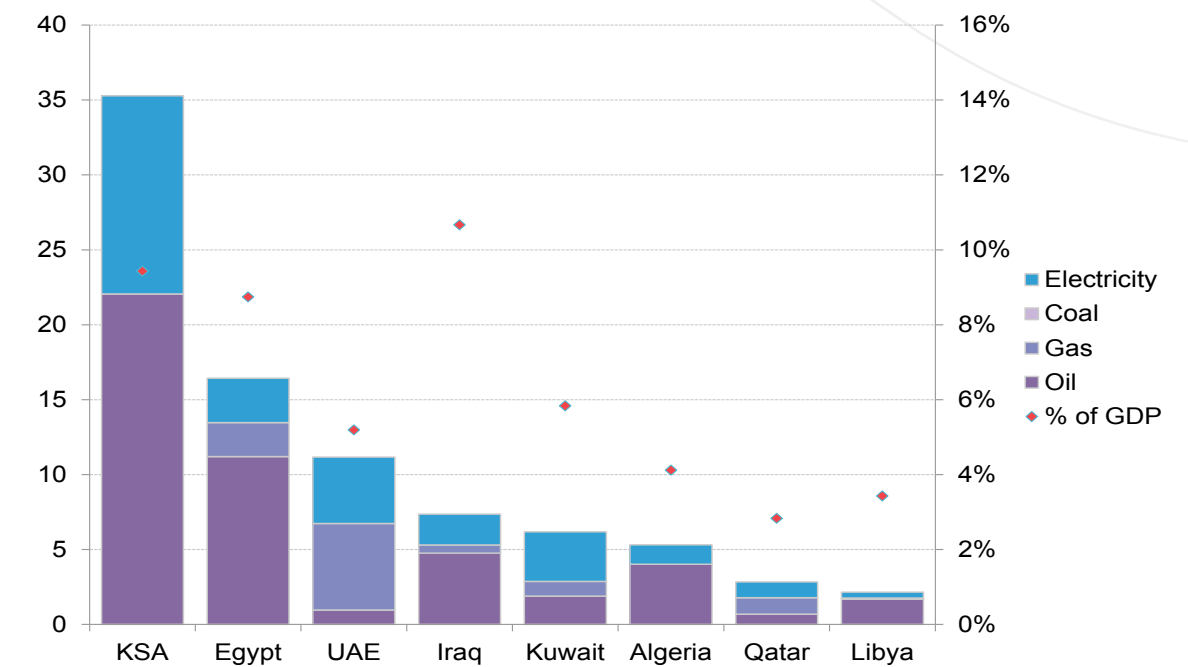
- The private-public synergies capable of boosting the sector have not been found
- The involvement of the finance and private sector remains weak. However, the scale of needed investments in the RE sectors requires a strong engagement of these sectors.
- The relatively high penetration rate of access to electricity, the strong subventions for fossil energies, the support RE support policies adopted to date, are the main hold backs.
- The volume of annual transactions remains low, with \$800M to \$1MM since 2009. During the 2004-2011 period, 37% of projects have been financed on results, 36% through conditional loans of development banks, 16% of commercial debt, 9% in clean funds and 2% through donations. The upcoming projects could also be financed by government fund and Islamic obligations (sukuks) that have financed 17% of energy and electricity projects of fossil origins in 2011. With regards to Islamic green certificates, a workgroup has been put in place in March 2012 by the Gulf Bon and Sukuk Association, the Climate Bonds Initiative and the Clean Energy Business Council of the Middle East and North Africa.



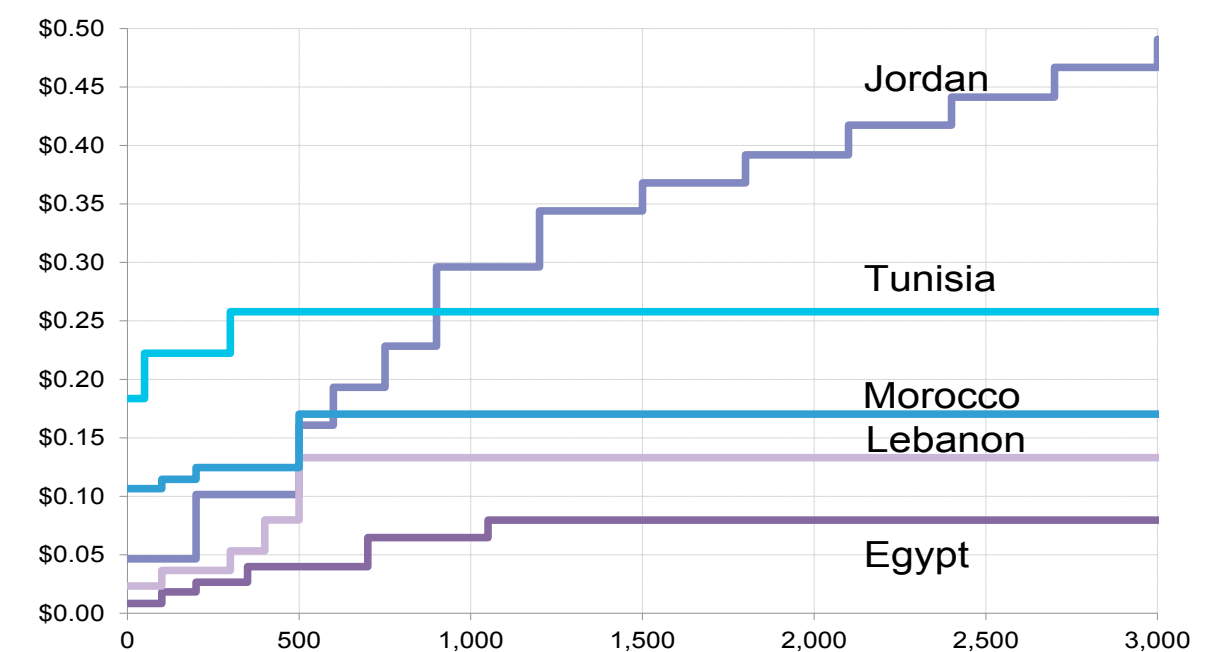
- **Value Chain :** By the end of April 2012, the industrial capacity of the MENA region in the solar sector remains limited. First announcement of projects have been, notably for PV, by the UAE, Saudi Arabia, Algeria and Qatar. However, even though these projects have public support, it is likely that they have underestimated the challenge posed by a global market in consolidation. In January 2011, Masdar gave up its project of panel production because of a decisive lack of regional demand. In terms of cost, the marginal cost of production of polysilicium has now reached \$25/kg. At such a level, some leading international manufacturers have been forced to end or diminish their production.
- **Policy and regulation :** The support mechanisms are very limited. The creation of dedicated institutions by the Moroccan and Saudi Governments open the way to important changes.
- **Levelised cost of energy :** The availability of renewable energy resources, access to concessional finances and in some cases, a beneficial fiscal regime, allows the LCOE to be below global average. For example, the LCOE for wind projects can reach \$55/MWh.
- **Structure of the market :** A large amount of countries in the region, notably the ones that are exporters of fossil energy carriers, have strong electricity subventions. This decreases tariffs, which is a key factor in the development of renewable energies.



Subvention levels for energy by countries



Household tariffs for electricity in the MENA region (\$/kWh)



## TECHNICAL AND FINANCIAL COOPERATION

Different cooperation mechanisms have been set up between the EU-MENA countries in order to promote RE development. Initiatives such as the Mediterranean Solar Plan, the Desertec Industrial Initiative, as well as bilateral and plurilateral agreements between EU and MENA-countries aim to contribute to renewable energy deployment in the MENA region. This development could be further endorsed by strong RE cooperation among the MENA countries. Such regional cooperation would be beneficial both from a technological and from a socio – economic standpoint.

### III - THE MENAREC CONFERENCES : 2004-2012

The «Middle-East and North Africa Renewable Energy Conference» (MENAREC) has been organized by a country of the MENA region in partnership with the German Federal Ministry for Environment, Nature Protection and Nuclear Safety (BMU) and the German Agency for International Cooperation (GIZ) since 2004.

#### OBJECTIVES OF THE MENAREC

The main objectives of the MENAREC can be summarized as follows :

- Promote and strengthen regional partnerships on renewable energy development ;
- Foster the development of the most promising renewable energy technologies ;
- Examine the national renewable energy programs of the countries from the MENA region ; Identify barriers and obstacles that so far hinder the renewable energy development in the MENA countries and search for potential solutions.

#### HISTORY OF THE MENAREC CONFERENCES

The first 4 editions of the MENAREC conference, held since 2004, have been characterized by the active participation of officials from MENA countries and by the contribution of leading experts and institutions from the renewable energy field (among those institutions were e.g. REN21, REEEP, MEDREP, JREC, GEEREF, REEGLE, or WREN). Thus, MENAREC conferences have become an important forum for dialogue and exchange for decision makers between MENA countries and between EU and MENA countries.

Further, the participation of ministers and other government officials from the different MENA countries have attributed high political importance to the past MENAREC conferences. Exchange and consultation meetings between ministers, officials and private sector representatives are organized at each edition of the conference.

To date four MENAREC have been organized :

- **The 1<sup>st</sup> MENAREC** was hosted by the Ministry of Electricity and Ministry of Water and Environment of Yemen in April 2004 in Sana'a, Yemen ;
- **The 2<sup>nd</sup> MENAREC** was hosted by the Jordanian National Center for Research and Development in May 2005 in Amman, Jordan ;
- **The 3<sup>rd</sup> MENAREC** was hosted by the Egyptian Ministry of Electricity and Energy in June 2006 in Cairo, Egypt ;
- **The 4<sup>th</sup> MENAREC** was hosted by the Ministry of Electricity in June 2007 in Damascus, Syria.

The 5<sup>th</sup> MENAREC, hosted and organized by Morocco on 15 and 16 May 2012 in Marrakech will have the “Prospects and Challenges for a Sustainable Socio-economic Development of the MENA Region through Renewable Energy” as its central theme.

#### MAIN RECOMMENDATIONS OF THE 4<sup>TH</sup> MENAREC

- > The Conference underlines the need to diversify energy resources and stresses the considerable potential that renewable energy and energy efficiency represent for the achievement of sustainable development ;
- > The Conference invites all participating countries to set national targets for the deployment of Renewable Energy and to take Energy Efficiency measures. In order to achieve these objectives, appropriate policy instruments and economic incentives should be adopted ;
- > The Conference favors the use of all forms of renewable energy in the countries of the MENA region, particularly at large scale, such as through CSP or wind energy, in order to meet their own energy needs and to allow for export to the EU. This vision requires major investments to be made in the infrastructure necessary for interconnecting the EU and the MENA region ;
- > The Conference agrees that a concerted global action to promote renewable energy and energy efficiency is needed. It favors regional and global cooperation for the optimization of national support, the exchange of best practices, the exchange in «know-how» and technological progress through bilateral and regional governmental and nongovernmental arrangements, as well as through government institutions and local partnerships such as REN 21, REEEP, MEDREP, JREC, GEEEF, REEGLE and WREN ;

- > The Conference emphasizes the need for the OECD countries as well as for regional and international financial institutions such as the World Bank, the European Investment Bank, the Arab Fund and banks, to intensify their technical and financial assistance to countries in the MENA region for national renewable energy programs ;
- > The Conference recognizes that significant financial resources, both public and private, must be directed to renewable energy development. This should include the use of innovative and market-based financing mechanisms, such as the Clean Development Mechanism (CDM), as well as the Global Environment Facility (GEF).
- > The Conference invites manufacturers of renewable energy projects, particularly wind and solar manufacturers, to broaden their industrial base to meet increased energy demand and to achieve economies of scale.
- > The Conference calls upon the MENA countries, the regional and international organizations, the private sector and NGOs to focus more on the development and implementation of public education and awareness-raising programs on renewable energy and energy efficiency in the MENA region.
- Taking into consideration the needs of the different social ranks in the MENA countries, the participating countries are invited to promote social justice, economic development and climate change mitigation through their energy production.

#### IV - OBJECTIVES OF THE MENAREC 5

- Summarize and discuss the developments in the renewable energy sectors of the MENA countries during the last decade ; derive good practices and lessons learned for those countries ;
- Exchange views on the latest global advances in renewable energy technologies and discuss the potentials of new technologies in MENA countries ;
- Discuss investment opportunities for renewable energy investors in the MENA countries ;
- Share views on the following issues : :
  - > How to promote the integration of renewable energy objectives into the sectoral policies of MENA countries ?
  - > How to achieve a coordinated and structured approach for the industrial development of renewable energy and for job creation in the MENA countries ?
  - > How to involve actors from the private sector into the industrial development of renewable energy and into efforts for job creation ? What public/private partnership models would be appropriate ?
  - > R&D to allow for a large share of MENA countries in renewable energy development.

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UN ENGAGEMENT DURABLE



- Exchange views on appropriate modes of cooperation between the MENA countries on renewable energy development in order to optimize their returns on the investments and the efforts made (achieve 'economies of scale') ;
- Identify the roles that the European Union can play in supporting and accelerating the development of renewable energy in the MENA region ;
- Identify the necessary steps to operationalize the cooperation between countries of the MENA region and EU member states on renewable energy development.

**Plenary session 1.2 :  
Renewable Energy :  
Prospects and challenges of regional cooperation**

#### OBJECTIVES

- Discuss the achievements, as well as difficulties encountered by MENA countries in the promotion of renewable energy.
- Identify the prospects and challenges for regional MENA cooperation in the development of renewable energy projects.
- Exchange on how to enable further cooperation between MENA countries and between EU and MENA countries in the renewable energy sector.

#### ISSUES ENVISAGED

- Progress achieved by countries of the MENA region in the development of their renewable energy sectors.
- Barriers to alleviate for future renewable energy development.
- Significance of institutional and legal frameworks to encourage the development of renewable energy in MENA countries and to strengthen EU-MENA cooperation in this domain.
- Prospects of industrial development in the renewable energy sector for the MENA region.
- Preconditions for strengthening national capacities in renewable energy generation.
- Challenges for the acquisition of renewable energy technologies in the MENA region ; potential assistance from the EU and its member states.
- Modes of potential renewable energy cooperation between MENA countries and between EU and MENA countries.
- Expected socio-economic benefits and, in particular, job creation effects from the development of renewable energy.

**Workshop I :  
What are the policy options for an accelerated deployment  
of renewable energy in the EU-MENA region ?**

#### OBJECTIVES

- Exchange on experiences of the EU-MENA countries with policy and strategy options for the promotion of renewable energy.
- Discussion of necessary planning processes, required features for institutional, legal and financial frameworks, as well as opportunities for training, R&D and innovation.

#### ISSUES ENVISAGED

- Successful renewable energy strategies in EU member states.
- Renewable energy strategies of MENA countries and their perspectives.
- Encountered barriers for the development of renewable energy in some countries of the MENA region, especially due to fossil-fuel subsidies and consumption-oriented subsidies ; discussion of future options.
- Needs for education and training on renewable energy technologies and design of national frameworks to foster the development of renewable energy in the MENA region.
- Approaches for the financing and promotion of renewable energy projects in the MENA region. Alternatives to the dichotomy of "feed-in-tariffs" and "project financing".
- Challenges for successful integration of national industries of MENA countries in renewable energy projects..
- Use of synergies of EU-MENA countries to achieve market integration in the renewable energy sector.
- Strategies for capacity development and employment creation in the renewable energy sector in the MENA region.

**Workshop II :  
Training, R&D, and innovation :  
How to allow for technology acquisition in the MENA region ?**

#### OBJECTIVES

- Put to light the needs for training to enable the large-scale renewable energy development in the MENA countries.
- Exchange on national and regional initiatives for training, R&D and innovation in the renewable energy sector and their prospects.
- Discuss suitable strategies for MENA countries and ways to implement them ; contemplate potential benefits of EU-MENA cooperation to promote training, R&D and innovation.

## ISSUES ENVISAGED

- The needs in human resources for the development of renewable energy in the MENA region.
- National and regional initiatives for the development of training, R&D and innovation capacities in the renewable energy sectors of the MENA countries.
- The needs to promote research and innovation capabilities on renewable energy in the MENA region, aiming for a structured approach to ensure technology acquisition and strong interaction of the research and the industry community.
- Design of inter-regional mechanisms to share experiences, challenges and best practices in the sector,
- Opportunities of EU-MENA cooperation for the development of training, R&D, and innovation.

**Workshop III :**  
**How to allow for industrial integration and job creation**  
**in renewable energy projects in the MENA region ?**

## OBJECTIVES

- Identify the types of renewable energy industries that are of particular interest for the countries of the MENA region, the achievable levels of their national integration and approaches to foster renewable energy industries locally.
- Exchange on ways to reconcile the attempts of countries to achieve industrial integration and local participation (i.e. through local content requirements) in national renewable energy projects with their WTO commitments.
- Discuss potential benefits from the EU-MENA cooperation for industrial integration and job creation in the MENA region.

## ISSUES ENVISAGED

- Industries that need to be established locally in order to allow for the long-term development of renewable energy in the MENA region, the feasible level of industrial integration in the different MENA countries ; the required institutional framework to achieve industrial integration ; the effects that an implementation of certain policies (i.e. when involving local content requirements) could have on countries' WTO commitments.
- Coordination and optimization of renewable energy deployment among MENA countries in order to allow for economies of scale and market integration.
- Positive effects of industrial integration on the socio-economic development and job creation in the MENA region.
- Potential benefits from EU support for the integration of renewable energy industries in the MENA region, as well as for technology acquisition and investment promotion.



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**Tronica Expo**

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et des Applications Electroniques

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Ministère de l'Industrie,  
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**Workshop IV :**  
**For a sustainable development through renewable energy  
 in the MENA region - what kind of inter-sectorial integration is needed ?**

**OBJECTIVES**

- Show how the integration of renewable energy in different strategic sectors (water, buildings, industry, waste treatment...) can be an asset for the MENA region.
- Identify the sectors that require particular attention in order to successfully develop through renewable energy.

**ISSUES ENVISAGED**

- Opportunities for the integration of renewable energy within the strategies for aligned economic sectors, such as :
  - > Seawater desalination ;
  - > Buildings (homes, tourism, hospitals, administration buildings...) ;
  - > Industry ;
  - > Agriculture ;
  - > Waste treatment.
- Integration of renewable energy in the development strategies of cities, especially newly constructed cities.

**Workshop V :**  
**State-of-the-Art of renewable energy technologies  
 and suitable options for the MENA countries.**

**OBJECTIVES**

- Presentation of State-of-the-Art renewable energy technologies and discussion of their applicability in the MENA region.
- Options for how to integrate renewable energy technologies in the future energy mix of MENA countries.

**SOUS THÈMES PRÉVUS**

- Solar thermal, CSP vs PV, wind and biomass : Presentation of recent and prediction of future development in renewable energy prices ; competitiveness of the different renewable energy technologies ; risk assessment for technology options.
- Grid integration requirements per technology ; technological needs resulting from potential electricity transfers within the EU MENA region.
- Success stories from the EU-MENA region.

**Plenary session 2.1 :**  
**Renewable Energy : Financing**

**OBJECTIVES**

- Identify the financing needs and the required investment conditions for renewable energy projects.
- Highlight the financing options of renewable energy projects resulting from EU-MENA cooperation ; in particular with regard to the inter-regional trade of electricity...

**ISSUES ENVISAGED**

- Available financing mechanisms for renewable energy projects in the MENA region and ways to access them.
- Participation opportunities for the private sector in MENA countries in financing renewable energy projects.
- Opportunities and challenges for project developers to access finance schemes dedicated to preventing climate change.
- Need for MENA-regional financing mechanisms for renewable energy projects.

**Plenary session 2.2 :**  
**Prospects and challenges for a regional EU-MENA grid  
 and market integration.**

**OBJECTIVES**

- Discuss the current state of regional market integration in EU-MENA.
- Identify barriers and ways to alleviate those in order to accelerate the integration of electricity grids and markets in EU-MENA.

**ISSUES ENVISAGED**

- Grid and market integration between MENA countries.
- Grid and market integration between EU member states.
- Opportunities for electricity trade in EU MENA : legal, institutional, technical and financial aspects.



## USE OF THE EIDOS1 TOOL FOR THE CONFERENCE FACILITATION.

During the MENAREC 5 conference, the EIDOS tool will be used in the facilitation and the reporting of the conference. The goal is to :

- Partially guide the facilitation of the sessions and workshops in order to extract relevant and expected information, views and analysis ;
- Highlight the results and conclusions of the debates and discussions by structuring them and presenting them in appropriate and attractive way.

Each of the sessions and workshops, with exception of the opening and closing ceremony of the conference, will be followed by an EIDOS expert. The EIDOS experts are specialised in the use of the EIDOS toolkit. The combine this expertise to their knowledge of the Energy sector.

These experts will use EIDOS to :

- Create and present summaries of the results of activities at the end of each session and workshop.
- Present a global restitution at the end of the conference, covering both days and thus, all the sessions and thematic workshop.

## FACILITATION AND REPORTING OF THE SESSIONS AND WORKSHOPS

In order for the sessions and workshops to be strongly result oriented, each president and panel of the session is suggested to keep the discussions and debates orientated around **30s** :

- > **01.** Stated Objectives around the theme : what is the aim and why ?
- > **02.** Obstacles that hinder achieving those aims at the moment.
- > **03.** Options that can be considered to alleviate these obstacles and reach our objectives.

These **30s** will be used by the EIDOS facilitators to illustrate their conclusions and recommendations for each session and workshop, as well as for the global restitution of the conference.

1. The Parmenides EIDOS tool is a module pack integrating software specifically created to support the analysis process needed for decision making. This tool offers an innovative and participative approach by allowing the visualisation of complex situation, looking for potential compromises and by supporting the identification of possible action lines.

## V - USEFUL INFORMATION

### MARRAKECH

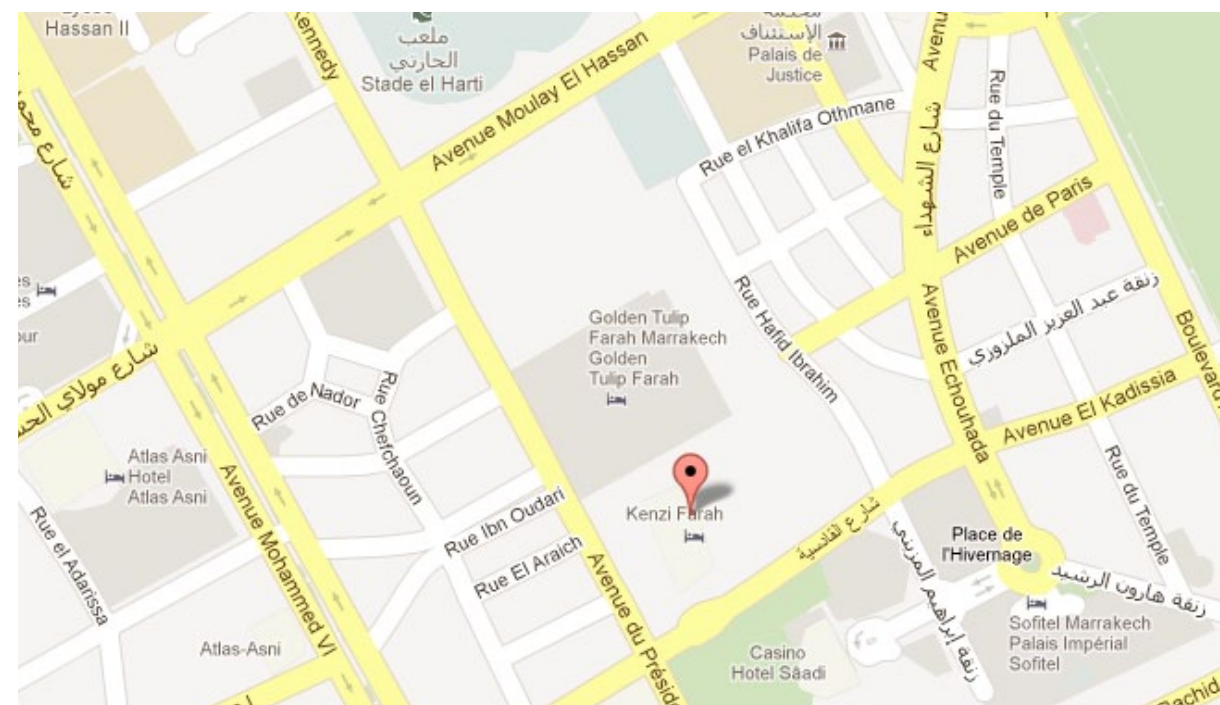
Marrakech is one of the imperial cities of the Kingdom located in the heart of the Haouz plain, at the foot of the Atlas mountains. The city is one of the country's prime tourist destination.

The Medina, or historic city, is located within the ramparts. It is classed as a world cultural heritage site by UNESCO. In the center, lies Jemaa El Fna Square, a world oral heritage site, the true beating heart of Marrakech. Interesting cultural or historical places are located inside the Medina.

The new town which is located outside the ramparts consists chiefly of the Gueliz and Hivernage districts. Gueliz is the commercial center and extends around the Avenue Mohammed V. Hivernage has a large concentration of hotels.

### CONFERENCE LOCATION

The conference center for the MENAREC 5 will be the Kenzi Farah hotel at the heart of Marrakech.



Near Koutoubia and the very famous Jemaa El Fna Square, it is located in the residential neighborhood Hivernage.

## GALA DINNER

### Place

The Pacha complex is located in the new hotel area of Marrakesh. This extraordinary complex is combining clean lines and lush vegetation and includes four areas restaurants that can accommodate various events.

### Gastronomy

Pride of Moroccans, original and tasty Moroccan gastronomy is the product of a long cultural tradition. This fine food has a story and has become, over the centuries, a real mode of expression.

Celebrated around the world, Moroccan gastronomy has been enriched over the centuries with many influences.

It adapts with refinement vegetables and fruits, rare spices and scented, delicate fish and tasty meats.

## GOOD TO KNOW

### Time zone

Local time in Morocco is Greenwich Meridian UTC+0 or GMT+0. Morocco passed in summer time GMT +1 since Sunday, April 29.

### Electricity

In Morocco, electrical sockets type C, E and F, provide alternating current of 220 - 240 Volts at 50 Hertz.

### Currency

The local currency is the Moroccan Dirham. Its ISO Code is MAD. It is divided into 100 centimes :

- > Notes of 20, 50, 100 and 200.
- > Coins of 1, 2, 5 and 10 and 5, 10 dirhams , 20 and 50 centimes

Conversion of Moroccan Dirham's : [http : //www.forexticket.co.uk/en/conversion/monnaie-MAD](http://www.forexticket.co.uk/en/conversion/monnaie-MAD)  
Bank cards (Visa, MasterCard) are accepted in certain large establishments.

Currencies imported in the form of banknotes must be declared at the entry into Morocco in case the amount is equal to or greater than the equivalent of 100,000.00 MAD.

### Tax-free

Any person not resident who has spent a short time in Morocco (up to three months) will be entitled to reimbursement of Value Added Tax (VAT) on purchases intended for use abroad above a minimum of 2000 DH including tax spent on the same day in the same shop.

### Telecommunication

Telephone numbers are composed of 10 digits. Zero is the first digit of fixed and mobile telephone numbers in Morocco.

The national dialling code is 212. To call a subscriber in Morocco from a foreign country, dial the international access code of the country of origin, then 212 and finally the subscriber's number without the "0".

In cybercafes, an hour of Internet costs less than 10DH.

The conference centre of Kenzi Farah is equipped with a free internet access system (WI-FI). The majority of hotels have free Internet connections (WI-FI) in the foyer.

## L'Environnement, un engagement au quotidien



La responsabilité envers le milieu naturel et les générations futures est au cœur de la stratégie du développement de la SAMIR.

Notre Société développe au quotidien des technologies et des compétences pour répondre aux besoins en énergie du Maroc dans le respect des impératifs de l'environnement et du développement durable.

La SAMIR est triplement certifiée GSE depuis Décembre 2010







## **Nourrir la terre pour nourrir la planète**

OCP est fier de contribuer à nourrir une population mondiale grandissante en lui fournissant des éléments essentiels à la fertilité des sols et à la croissance des plantes.

Fort de ses 90 ans d'expérience, OCP est leader sur le marché du minerai de phosphate et de ses dérivés. OCP, offre ainsi une large gamme de produits fertilisants adaptés pour enrichir les sols, augmenter les rendements agricoles et nourrir le monde de manière économique et durable.

Basé au Maroc, à Casablanca, OCP travaille en étroite partenariat avec plus de 130 clients sur les 5 continents.

