

Mediterranean Solar Plan Strategy Paper

1. The Mediterranean Solar Plan: a positive response to the energy and climate challenges of the Euro-Mediterranean region

The whole Mediterranean region and the European Union (EU) will both face major energy and climate challenges in the coming decades. Energy demand is projected to rise significantly, while fossil fuel prices will most likely continue to follow an unstable and most likely rising trend. To address these challenges, the countries of the EU and the other member countries of the Union for the Mediterranean need to intensify their efforts to develop adequate policies in the field of energy efficiency and energy savings, renewable energies and reduction of greenhouse gas emissions.

The EU is already a driving force behind international climate protection policy and has set itself specific targets in the now approved package of energy and climate policy measures¹.

Progress has already been achieved in the context of the Euro-Mediterranean energy co-operation. A "Priority Action Plan" covering the period 2008-2013 was adopted by the Euro-Mediterranean Ministerial Conference on Energy in December 2007. It includes an agreed list of priority infrastructure projects, as well as important provisions for the development of sustainable energy systems. Furthermore, a series of programmes supported by the European Union directly aim at integrating the Maghreb and Mashrek energy markets (e.g. MED-EMIP², MEDREG³ projects) and at co-operation in the field of energy efficiency and renewable energy (MED-ENEC project⁴). These projects also closely collaborate with the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE) based in Cairo. Additionally, EU Member States together with UfM Partner Countries support a number of relevant initiatives, such as the Mediterranean Renewable Energy Centre (MEDREC) based in Tunis as the focal point of the MEDREP Initiative. Other regional initiatives such as the Mediterranean Energy Observatory (OME) or MEDELEC have also provided a very important contribution.

At Paris summit meeting on July 13th 2008, the Heads of states and governments of the European and Mediterranean countries have launched the Union for the Mediterranean (UfM), a new form of co-operation between the two shores of the Mediterranean Sea. This new partnership aims at fostering development, fighting climate change and strengthening the bonds between all the countries of the Union. It will build on the experience of the Barcelona process, launched in 1995, and integrate its former policies. The Union for the Mediterranean pays special attention to concrete projects and results.

¹ The energy and climate package was adopted in December 2008 and sets binding targets for all EU Member States to achieve, by 2020, a 20% reduction in the EU greenhouse gas emissions and a 20% share of renewable energies in the EU final energy consumption.

² Support to Euro-Mediterranean Energy Market Integration.

³ The MEDREG Association works to support cooperation between Euro-Mediterranean Energy Regulators.

⁴ Energy efficiency in the construction sector.

One of the major projects proposed is the Mediterranean Solar Plan (MSP) whose prime objective is the development of a sustainable energy future in the Mediterranean region. The Mediterranean region has an enormous, and largely untapped, potential in the field of renewable energies. Renewable energies can significantly contribute to the sustainable development of the region. There is an opportunity for cooperation among all interested parties, because the benefits of the necessary investments can be shared in an equitable way.

To this end, the MSP intends to increase the use of solar energy and other renewable energy sources for power generation, improve energy efficiency and energy savings, and develop electricity grid interconnections.

The MSP will complement existing Euro-Mediterranean activities and co-operate fully with existing structures in the field of renewable energy and associated grid infrastructure development, with a specific focus on the following areas:

- Ø **Setting up of an adequate legal, regulatory, economic, institutional and organisational environment** to enable the development and massive deployment of solar energy and other renewable energy technologies, and to facilitate their exchange or trade. A viable business climate, in particular, based on stable and transparent investment frameworks, with adequate pricing policies, will be necessary for long-term investments to take place. The EU directive for the promotion of renewable energy sources will offer key incentives for facilitating the implementation of the Mediterranean Solar Plan by providing, under certain conditions and in line with EU competition and State aid policies, for the import of “green electricity” from third countries to the EU.
- Ø **Examine and promote**, in cooperation with the International Financial Institutions, the best use of all **possibilities to finance investments** in renewable energy sources.
- Ø **Promote the development of electricity interconnections** within the Southern and Eastern Mediterranean, between Southern and Eastern Mediterranean and EU countries, and across the Adriatic Sea in order to establish a viable “green electricity” import and export framework, as well as, where necessary, within the EU in order to allow for renewable electricity trade in the whole region.
- Ø Support **energy efficiency initiatives and energy savings**, in particular through the implementation of comprehensive legislative and regulatory frameworks, incentive measures, supported by awareness raising, training, and exchange of experience to realize the anticipated goals of energy savings by 2020.
- Ø **Facilitate extensive co-operation on all technology aspects** inter alia transferring know how and technology, establishing a regional competitive cluster and networking of relevant research and scientific institutions active in the field of renewable energy and energy efficiency.
- Ø **Avail all EU carbon mechanisms** for the benefits of both Mediterranean sides in purpose of improving the economics of the projects under MSP and fulfilling the obligations of the EU developed countries towards GHG emissions reduction under Kyoto Protocol and beyond.
- Ø **Continue regular dialogues** between the stakeholders of the MSP for close coordination and successful implementation of MSP under an appropriate set up.

By contributing to the development of solar and other renewable generation capacities and green electricity trade between the Mediterranean countries and the EU, the MSP will help to address the challenges of internal energy demand in the participating countries. It will help to achieve the objectives of the EU energy and climate package as well as national targets set in other member states of the UfM. But the MSP will also significantly contribute to the sustainable development of non-EU countries, promoting investments and job creation.

2. The Mediterranean Solar Plan: a comprehensive approach to develop renewable energy production and stimulate energy efficiency and create the right framework conditions

The MSP poses two complementary targets: (i) developing 20 GW of new renewable energy production capacities and (ii) achieving significant energy savings around the Mediterranean by 2020, thus addressing both supply and demand.

a) Developing electricity generation from renewable sources of energy

The MSP aims at increasing the use of renewable energy sources for power generation. The key element of the proposal is the setting up of a common framework in terms of legal, regulatory and investment environment for the development, by 2020, of 20 GW of new generation capacity in solar and other renewable energies in the countries around the Mediterranean Sea. To this end, the MSP will build on the enormous potential for solar electricity generation available in the Mediterranean countries, notably through the development of Concentrating Solar Power (CSP) and Photovoltaic (PV) plants, and of other available and mature renewable energy technologies.

The MSP will also promote activities in the field of transfer of know-how and technology to support projects in the field of electricity generation from renewable energies, electricity transmission and energy efficiency. Public and private actors from European and Mediterranean countries could elaborate a proposal to develop a Mediterranean technology transfer network, notably on solar and other renewable technologies. Topics to be covered shall include but not be limited to education and training, research and development and local manufacturing capacities. Collaboration with regional and international institutions, in particular the International Renewable Energy Agency (IRENA), in this field should be encouraged.

b) Energy efficiency and energy savings

The MSP aims at saving significant amounts of energy compared to a business as usual scenario, following inter alia the recommendations of the Mediterranean Association of National Energy Agencies (MEDENER) and in close co-operation with key partners and initiatives such as the Mediterranean Energy Observatory (OME), the Regional Centre for Renewable Energies and Energy Efficiency (RCREEE) in Cairo and the Mediterranean Renewable Energy Centre (MEDREC) in Tunis. The MSP supports developing sectoral programmes, notably in the building and transport sectors, and regional projects and programmes in the field of energy efficiency (such as domestic heating systems, home appliances, efficient lighting,..). The possibility to support the development and/or implementation of National Energy Efficiency Action Plans for the MPCs should also be considered.

c) Creating favourable framework conditions

All Partners cooperating within the framework of the Mediterranean Solar Plan shall actively support all initiatives aiming at creating favourable framework conditions for the large scale deployment of renewable energy sources and in support of energy efficiency, in

particular as regards legislative and regulatory aspects, and electricity transmission capacities.

Regulatory framework

The MSP will pay specific attention to the creation of a regulatory framework favourable to investments in the renewable energy sector. This will be based in particular on past and on-going cooperation and initiatives relating to electricity market reforms, the cooperation among energy regulators and legislative and policy reform in support of Renewable Energy and Energy Efficiency.

Know-how and technology transfer

The MSP will foster and encourage developing the national capacity and transferring the technology to the developing countries in order to strengthen the skills in the domain of renewable energy and energy efficiency.

Electricity transmission

The MSP will contribute to identify and promote the electrical interconnections, which are absolutely vital for the power plants to be able to export a part of their production to other countries. Special attention will be given to the improvement of North-South interconnections in order to make possible the export of green electricity from Mediterranean countries to EU countries.

This work will be carried out in connection with the Mediterranean Interconnection Plan to be proposed by the European Commission, building upon the EU second strategic energy review that has identified the completion of the Mediterranean energy ring as a priority project. In particular, the following issues will need specific considerations:

- a. new interconnections between EU and non EU MSP countries;
- b. investment in new grids and interconnections within and between non EU MSP countries;
- c. reinforcement of existing interconnections;
- d. tariffs and access regime for the transmission of electricity from renewables.

3. Preparation and implementation process

During the initial "preparation stage" (2008-2009) several key actors have launched a number of initiatives and studies aimed at identifying the appropriate strategies in order to achieve the objectives set out by in order to identify the objectives and strategies leading to the MSP. In the ensuing years, the first MSP projects shall be launched in different countries, while at the same time procedures for developing, structuring and financing projects under the Mediterranean Solar Plan will be elaborated. The first projects should be related to renewable energy and energy efficiency and specify which financial mechanisms, incentives and capacity building activities are most appropriate.

A Master Plan will be developed by 2011. During the deployment phase, planned for the period 2011-2020, the Master Plan will be implemented at a larger scale, building on the experience gained during the initial phase.

Preparation Stage (2008-2009)

The preparation phase has been marked by a conference on 22 November 2008 in Paris that brought together high level policy makers, industry, investors, financing

institutions and specialised agencies from all interested countries. Building on the results of a seminar held in Seville on 21 October 2008 with the European Solar Thermal industry, as well as on a workshop in Berlin on technology options and cost estimates for the development of solar and wind capacities in the Mediterranean region (28 and 29 October 2008), the conference was a major opportunity to discuss implementation issues, to identify investment and financing solutions, to raise awareness about the opportunities of the MSP, to connect relevant public and private actors, and to highlight potential projects in the field of renewable energies.

Action Plan 2010-2011

Based on this Strategy Paper, an Action Plan (AP) shall be set up in order to launch a first set of projects in each field during the period 2010-2011. The Action Plan should also duly cover aspects relating to the improvement of framework conditions (regulation, legislation, technology transfer, business environment).

The Action Plan shall inter alia allow identifying a first set of projects to be launched in 2010-2011. Through the development of these projects, it will be possible to define and test legal frameworks (licences, authorisation, tariffs etc.) and financial mechanisms, and to establish a viable import-export framework for green electricity to the European Union. This phase will in particular allow securing and developing adapted financing mechanisms as currently discussed notably with the World Bank and the European Investment Bank as well as with several bilateral development banks.

This stage should involve, in particular, industry, utilities, transmission system operators, potential investors and financing institutions and the public sector.

Additionally, the Action Plan will, together with the Partners' investment plans and with the Mediterranean Interconnection Plan under development, provide for an assessment of the current electric interconnection situation. This will allow identifying the main links between the different regions involved in the plan that already exist or in the track or will be established in the near future. These include in particular the following interconnections:

- Morocco-Spain (operational)
- Morocco-Algeria (operational), reinforcement under preparation
- Tunisia-Italy (under preparation)
- Tunisia-Algeria
- Tunisia-Libya (existing cables, but not operational)
- Turkey-Greece and Turkey-Bulgaria (existing cables, but not operational).
- Egypt-Libya (operational)
- Egypt-Jordan-Lebanon-Syria (operational)
- Egypt-Greece (under-study)
- Syria-Turkey (Partially operational)

Furthermore, the Action Plan shall also take into consideration the already ongoing initiatives in the field of renewable energy and energy efficiency, including those for energy savings, and transfer of know-how and technology and seek to propose possible synergies and additional support where needed. The Action Plan shall be finalised by end 2010.

Deployment phase (2011-2020)

The long-term implementation of the Mediterranean Solar Plan will take place over the period 2011-2020 and notably aim at reaching the 20 GW target.

The deployment phase will be supported by a master plan to be presented in 2011 and covering the period 2011-2020. Results of the work developed in the initial phase, as well as of all existing and current studies, notably the study "Identification of the Mediterranean Solar Plan", carried out by the EU Commission, shall be taken into account. The instances that will be developing the plan shall work in close collaboration with the team of the EC-funded forthcoming technical assistance project "Paving the Way to the Mediterranean Solar Plan", expected to be launched in the first half of 2010, as well as with the other EU cooperation initiatives mentioned above, and with the MEDREG Association of Energy regulators.

On these bases, the Master Plan should develop a strategy covering in particular the following elements:

- Site selection issues and local industrial capabilities and renewable energy market development in the countries of the Mediterranean region;
- Initiatives in the field of solar and other renewable energies for power generation and energy efficiency in the Mediterranean countries and potential synergy measures to make the best possible use of existing efforts, notably regarding energy efficiency initiatives;
- Progress of legislative and regulatory reforms, institutional and administrative conditions, as well as other relevant infrastructure and electricity sector issues for a phased development of solar and other renewable technologies in the Southern Mediterranean countries;
- Suitable mechanisms for financing (including appropriate support and import-export schemes, concessional financing and carbon finance and other innovative financing schemes) along with the most cost-effective solutions to ensure active private sector involvement, taking into account results from existing or coming publications, such as the Commission's "Communication on financing low carbon technologies" and the FEMIP study on the economic conditions regarding the Mediterranean Solar Plan contracted by the EIB;.
- Address the specific issue of transmission infrastructures to EU countries, taking stock of existing bilateral agreements and the ongoing involvement of transmission system operators, and proposing, in particular, specific electricity grid infrastructure projects that could be of common priority in the Euro-Mediterranean context for establishing an effective green electricity import-export framework and could be addressed in the framework of the Trans-European Networks (TEN) initiative;
- Relevant conditions for the improvement of energy efficiency in the most energy intensive sectors such as buildings, household appliances, industry and transport, including financial and economic aspects;
- Identify further needs for technical assistance and capacity building in the fields of renewable energy production, energy efficiency and technology co-operation and transfer. Synergies with the International Renewable Energy Agency IRENA could be suitable for this purpose.

The plan will include a road map detailing the phases, activities and precise timeline for the implementation of the MSP, providing the necessary flexibility for new projects and developments.