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**Strengthening cooperation between EU and MENA:
lessons learnt from EU R&D programmes to
stimulate industry involvement**

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Presentation Roadmap

- New EU policy framework for renewables
- New instruments available to increase the share of new energy technologies
- Europe's achievements in RES development; Examples from solar PV, CSP and wind power industries
- Technology innovation and technology transfer: lessons learnt in Europe

New RES policy in Europe

- **Principles:** be based on long term mandatory targets, include increased flexibility in target setting across sectors, be comprehensive, notably encompassing heating and cooling, provide for continued efforts to remove unwarranted barriers to renewable energies deployment, take into consideration environmental and social aspects, ensure cost-effectiveness of policies, and be compatible with the internal energy market.
- **Targets:** An overall legally binding EU target of 20% of renewable energy sources in gross inland consumption by 2020 and a minimum target of 10% for overall consumption of petrol and diesel in transport for 2020;
- **Objectives:** to **remove the barriers** to developing renewable energy in the electricity sector and the heating and cooling, to enable **better integration of renewable energy sources into the power grid**

Bridging the gap between R&D and markets: Europe in practice I

- **Technology push instruments:** EU Research Framework Programme and associated initiatives (e.g. European Research Area Networks scheme, Risk Sharing Finance Facility of the European Investment Bank, Infrastructures for research, Joint Technology Initiatives and other possibilities under Articles 168, 169 and 171 of the EC Treaty and Title II of the Euratom Treaty), European Coal and Steel Research Fund, national research and innovation programmes, venture capital and innovative financing mechanisms, European Investment Bank, Structural Funds for innovation, COST, EUREKA, European Technology Platforms.
- **Demand pull instruments:** EU directives setting targets and minimum requirements, performance regulations, pricing policies (Emissions Trading Scheme and fiscal instruments such as energy taxation), energy labelling, standards policy, voluntary agreements of industry, feed-in tariffs, quotas, obligations, green and white certificates, planning/building regulations, grants for early adopters, fiscal incentives, competition policy, public procurement policies, trade agreements.
- **Integrated innovation instruments:** a proposed new European Institute of Technology (EIT) will play an important role in enhancing the relations and synergies between innovation, research and education. The Seventh Framework Programme, seeks to remove non-technological barriers that prevent market take-up. In addition, the lead market approach announced in the recent innovation strategy could lend itself well to the launching of large-scale strategic actions aimed at facilitating the creation of new knowledge-intensive energy markets.

Bridging the gap between R&D and markets: Europe in practice II

The Seventh Framework Programme for Research and Development

Main areas: cooperation, ideas, people, capacities, Euratom, JRC

Cooperation: supports all types of research activities carried out by different research bodies in trans-national cooperation and aims to gain or consolidate leadership in key scientific and technology areas. Across all these themes, support to trans-national cooperation will be implemented through.

Ideas: The objective of the specific programme 'Ideas' is to reinforce excellence, dynamism and creativity in European research.

People: aims to improve the quality of the human resources in European R&D and increase the number of employees working in the European R&D sector

Bridging the gap between R&D and markets: Europe in practice III

Capacities: aim to enhance research and innovation capacities throughout Europe and ensure their optimal use. This specific programme also aims to:

- support the coherent development of policies;
- complement the Cooperation programme;
- contribute to EU policies and initiatives to improve the coherence and impact of Member States policies;
- find synergies with regional and cohesion policies, the Structural Funds, education and training programmes and the [Competitiveness and Innovation Programme \(CIP\)](#).

Euratom: to fund nuclear research and training activities under the Euratom Treaty

Joint Research Centers: provides customer-driven scientific and technical support to the conception, development, implementation and monitoring of EU policies

Bridging the gap between R&D and markets: Europe in practice IV

- Intelligent Energy Europe Programme (IEEP)
- High Growth and Innovative SME Facility (GIF)
- European Technology Platforms (ETPs)
- European Research Council

The Global Energy Efficiency and Renewable Energy Fund

Europe's achievements in RES development; Examples from solar PV, CSP and wind power industries

- Solar PV: total installed capacity of photovoltaic (PV) systems in the EU in 2005 was 2 GWp, which represents approximately 0.3% of the total EU electrical capacity (706 GW in 2004) – 40% of the cumulative PV capacity installed worldwide in 2005 was 5 GWp; In the top-10 PV system manufacturers there are 4 European companies.
- CSP: In Spain 20 to 30 projects of 50 MWe size each are planned which, when realised, would amount to 3 times the 500 MWe objective set by 2010;
- Wind: Today, installed wind capacity in the EU is roughly 50GW, about 2/3rd of global capacity; European companies constitute 80% share in the global market;

Technology innovation and technology transfer: lessons learnt in Europe I

- **A successful process of technological innovation** entails at least four important actions that need to be undertaken in parallel to some extent: measures to reduce barriers that inhibit the innovation process, a flexible capacity building programme, measures for early adoption of promising technologies and allocation of financial resources tailored to the stage of development of the respective technology;
- **Factors that could contribute to a successful technological transfer include**
 - Available knowledge and expertise;
 - The presence of early niche markets;
 - Identification of possible competitions with other industries but also synergies;
 - Scope for economies of scale to achieve cost reductions;
 - Establishment of an actor network (suppliers, customers, regulators) whose semi-coordinated actions are necessary to bring about substantial shift in interconnected technologies and practices,
 - Overcoming and accommodation of social opposition and consumer resistance

Technology innovation and technology transfer: lessons learnt in Europe II

- **Good governance** of the process is necessary to **identify early on and act upon market failures**, such as prohibitive cost of technology information, inefficiency of capital markets, particularly in developing countries, prohibitive costs of entering a new market and market inertia due to lock-in of existing technologies;
- **Enhanced international cooperation** is crucial to achieve the “energy revolution”. In **competitive areas** in particular, major hurdle to international (and EU) cooperation remains the issue of **intellectual property rights (IPR)**. With regards to **pre-competitive areas**, cross-cutting issues such as **resources mapping and standards could be first priority for cooperation**