TOWARDS A EURO-MEDITERRANEAN ENERGY COMMUNITY:
Moving from import-export to a new regional energy model

April 2013

In 2011, for the first time, the European Commission talked about an “EU-Southern Mediterranean Energy Community starting with the Maghreb countries and possibly expanding progressively to the Mashreq” (joint communication with the High Representative of the Union for Foreign Affairs and Security Policy, dated 8 March 2011). The European Coal and Steel Community (ECSC) launched in Europe in 1951 proved that the energy domain was capable of bringing about wide-scale regional integration. On a Euro-Mediterranean scale, the interdependence and complementary energy factors that link countries on both sides encourage thinking about more deep-seated regional cooperation. The challenges and opportunities currently facing Mediterranean countries call for urgent action involving the whole region, aimed at concrete results in the energy domain.

IPEMED
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1. The current energy situation north and south of the Mediterranean

The North

Primary energy production in European countries dropped from 1,185 Mtoe in 2000 to 1,041 Mtoe in 2010. This trend is likely to continue over the period 2010-2020. At the same time, primary energy consumption rose constantly over the period 2000-2010, and could continue increasing until at least 2020. Primary energy production in Europe is insufficient to meet energy demand in European countries. In the absence of new domestic energy resources, European countries' energy independence (production/consumption ratio), which was 66% in 2000 and 56% in 2010, could continue dropping beyond 2020. The main hydrocarbon producers in the European Union (United Kingdom, Netherlands and Denmark) and on the European continent (Norway) have seen their fossil energy resources diminished over the last few years.

Table 1. Primary energy consumption and production in European countries (2000 – 2020)

	2000	2010	2020
Consumption in European countries (Mtoe)	1,791	1,829	1,860
Primary energy production in European countries (Mtoe)	1,185	1,041	988
Rate of energy independence as % (production/consumption)	66	57	53

Source: Eurostat (2012), European Commission (2011) European countries = EU 27, Norway, Switzerland, Iceland

To counteract the negative impacts of this situation, it is imperative that European Union countries:

- Respect the "20-20-20" goals of the energy climate package adopted in 2008 (raising the share of EU energy consumption produced from renewable resources to 20%, a 20% reduction in CO2 emissions, a 20% improvement in the EU's energy efficiency).

- Diversify their energy partners: a European Commission communication on securing energy supply and international cooperation recommends that: "It is in the EU's strategic interest to build stable and long-term partnerships with its key suppliers and new potential suppliers."[1]

- Adopt ambitious policies to save and use energy more efficiently in the housing, industrial and transport sectors.

- Facilitate the expansion of renewable energy sources by organizing competitive channels and defining financial incentive measures (buyback tariffs, tax credits, green certificates, etc.).

- Evaluate the economic and environmental cost-benefits of exploiting non-conventional gases located on their territories.

[1] *COM (2011) 539 final*

The South

Primary energy production in Southern and Eastern Mediterranean countries (SEMCs) was 425 Mtoe in 2010. This figure is 24% higher than 2000 production levels. The rise in production could escalate by 2020 to respond to high growth in energy demand (+50% from 2010 to 2020). The presence of major hydrocarbon producers in the South (Algeria, Egypt and Libya) means that the SEMCs taken as a whole have a high level of energy independence (129% in 2010), making them net exporting countries (although Morocco, a non-producing country, shows a much lower energy independence level). However, this energy independence dwindles over the period 2000-2020. The rise in energy demand is set to be more marked in the electricity sector: electricity demand could double by 2020, and even triple by 2030. Electricity production could thus go from 559 TWh in 2009 to 1,534 TWh in 2030 (OME conservative trend-based scenario)

Table 2. Primary energy consumption and production in SEMCs (2000 – 2020)

	2000	2010	2020
Consumption in SEMCs (Mtoe)	230	328	495
Primary energy production in SEMCs (Mtoe)	341	425	600
Rate of energy independence as % (production/consumption)	148	129	121

Source: OME (2011)

Installed electricity production capacity in SEMCs is likely to increase considerably over the next two decades. According to the Observatoire Méditerranéen de l'Energie (OME), in a conservative scenario, 200 GW of additional electricity capacity would be required. In a proactive scenario (expansion of renewable energy and energy efficiency measures), 155 GW of additional electricity capacity would be sufficient, but would entail twice as many renewable energy power plants (i.e. wind and solar power) and a much bigger investment of around 40 to 50 billion US dollars. Whatever the scenario, according to our estimations, new energy production capacities in SEMCs would require investments of between 310 and 350 billion US dollars by 2030.

North-South energy imports and exports

The European Union imports more energy than any other region in the world. In 2010, it imported 993 Mtoe, and by 2020 it could be buying 1,045 Mtoe a year. The EU imports over 60% of its gas and 80% of its oil. Its energy dependence (import/consumption ratio) set to rise from 53% in 2010 to over 60% in 2020, could be around 75% to 80% in 2030. The Russian Federation, which is the European Union's leading energy partner providing 32% of oil imports and 40% of gas imports, will benefit from this trend.

Southern and Eastern Mediterranean countries taken as a whole are net exporters of fossil energies. In 2009, SEMCs exported 82 Mtoe of hydrocarbons and could commercialize between 100 and 150 Mtoe by 2020. Depending on the energy directions pursued by producer countries in the south Mediterranean (e.g. use of renewable energy), the volume of exports could either drop considerably by 2030 to 33 Mtoe, or stabilize at around 150 Mtoe. This trend does not reflect the reality in all countries in the South: Morocco is 95% energy dependent and imports hydrocarbons from countries located outside the Mediterranean.

Regional energy exchanges between the north and south sides of the Mediterranean currently reveal that: 20% of the gas and 15% of the oil consumed in Europe comes from North Africa; 60% of oil exports and 84% of gas exports from North Africa are destined for Europe. Electric interconnections with Spain enabled Morocco to import 4.6 TWh in 2011. During the next few years, exports from hydrocarbon producer countries in the south toward north Mediterranean countries could diminish due to the steep growth in energy demand predicted in these countries. On the other hand, electric transfers should progressively increase due to interconnections development.

The energy sector's role in creating national wealth and employment

The energy sector generates significant added value in countries that produce hydrocarbons. On the other hand, it does not create jobs (in Algeria, the energy sector represents 36.7% of GDP, but the sector only employs 2%-3% of the working population). In comparison, in France, energy represents 1.7% of GDP and employs 0.5% of the working population. The energy transition offers countries in the Mediterranean region the prospect of developing new energy industries (e.g. wind power, photovoltaics, CSP, energy efficiency, etc.). In Germany, from 2000 to 2011, the number of jobs in renewable energy industries almost quadrupled (381,600 jobs in 2011).

2. Arguments calling for energy integration between both sides of the Mediterranean

- *Regionalization and globalization: the pertinence of geographical proximity*
  Major powers have a political and economic interest in their neighbours (e.g. United States and Japan). For European countries, West Africa and the Sahel are becoming areas of strategic concern. The Arab Spring has obliged the European Union to propose "a new response to a changing neighbourhood" [2]. The political situation along with the economic development of southern Mediterranean countries have had the effect of stimulating northern Mediterranean countries' interest in their neighbours.

- *The third industrial revolution using renewable energies is underway and it benefits countries in the South*
  The economist Jeremy Rifkin maintains that a third industrial revolution must take over from our current system, which is "spiralling into a dangerous endgame". The solar potential of countries in the southern Mediterranean gives them an advantage in accomplishing this new industrial revolution. The cost of producing electricity generated by photovoltaic solar technology could be around 10 cents of a US dollar (7.8 c€/kWh) in very sunny zones (to compare to the average market price of electricity in France that was 4.69c€/kWh in 2012[3]).

- *Countries in the South, both consumers and producers, want to take part in the energy transition*
  The world is undergoing an energy transition from a fossil model to a non-carbon, non-fossil model. The energy transition responds to the priority climate targets of countries in the north Mediterranean, creating an opportunity for countries in the South to develop new energy industries. Implementing this energy transition remains problematic for countries in the South, whose economic growth is highly dependent on the hydrocarbon sector. In exchange for the resources they supply, they want to be involved as partners in the energy transition. They would like to make this perspective part of their national, energy, industrial and technological strategies, and set up international partnerships to this end.

- *North-South relations in the Mediterranean are now characterized by common energy challenges and complementary assets*
  Countries in the north Mediterranean have developed considerable know-how in the domain of renewable energies and energy efficiency in transport, buildings and the industrial sector. Several competitiveness clusters specializing in energy are developing skills and technologies. Some countries in the South possess significant reserves of hydrocarbons and all SEMCs have solar potential to develop. There is no competitive relationship between the two sides, they have something to offer each other. It is easier to build a community of interest between complementary countries than competing countries.

[2] *Joint communication from the High Representative of the European Union for Foreign Affairs and Security and the European Commission dated 25 May 2011, COM(2011) 303*
[3] *RTE*

- *North-South energy relations cannot be restricted to commercial relations, which have shown their limits in creating value and jobs in the South*
  The energy exchanges developed between the two sides of the Mediterranean are restricted to simple commercial exchanges to the detriment of developing a dynamic energy sector that creates jobs in producer countries. Moreover, the rise of spot markets means that commercial relations tend to privilege the short term. It is, however, vital that European countries secure their supplies over the long term. This turnaround of perspective puts companies at the heart of regional energy strategies. Only a North-South relationship based on production and a long-term relationship can result in a durable relationship of trust and encourage the investment needed for energy transition in the region.

- *An opportunity to create regional industrial channels that create jobs*
  Traditional energy industries (i.e. oil and gas) and new ones (i.e. renewable, energy efficiency, etc.) are being organized without any particular coherence between the two sides of the Mediterranean. Countries that produce hydrocarbons in the South cannot develop their activity downstream and distribute gas right to the final consumer in Europe, which does not encourage them to invest in new deposits. In addition, if they are to develop industrial channels in renewable energies, SEMCs will need to acquire the appropriate know-how. At the same time, European companies working in renewables (especially solar), faced with stiff competition, are unable to raise their experience curve and reach critical size. A move to organize North-South value chains into renewable channels while creating segments with high added value on the south side would help transfer European know-how and create jobs.

- *Several factors point to dynamic integration in the western Mediterranean that could constitute a laboratory for the whole region*
  Given the strong complementary factors between countries on both sides of the Mediterranean when it comes to a requirements/resources balance, in particular between the Maghreb and Western Europe, and the strong fabric of cultural, historical and linguistic relations, the western Mediterranean seems to offer a suitable framework for starting up a new type of energy-based partnership.

3. Potential action in view of a Euro-Mediterranean Energy Community (EMEC)

The dynamics at work call for the definition of a “New Energy Partnership” in the region. This new partnership approach, based on a common vision of regional energy challenges and the desire to devise strategies that generate added value on both sides, should lead to a “Euro-Mediterranean Energy Community”. To accomplish this, several structuring actions could be initiated:

- Coordinate a common strategy: associate North and South in coordinating a common strategy through an equally balanced body bringing together stakeholders from both sides.

- Converge standards: update legislation and technical standards to encourage a partnership approach, and support cooperation between the electric and gas regulators (Medreg network).

- Promote energy efficiency policies: develop common standards and reinforce networks of energy management agencies in the Mediterranean region (Medener).

- Strengthen interconnections to move towards a common area and ensure that the network remains fluid (support for Medgrid), and accompany the cooperation between Mediterranean electricity transmission system operators (support for Med-TSO network).

- Propose new industrial combinations of energy through co-production: set up Euro-Mediterranean industrial energy channels, strategic partnerships, connection points between national and international companies in the region.

- Build partnerships between industrials, universities and research centres: encourage more interaction between stakeholders in new channels and research into innovative technologies (e.g. clusters, competitiveness clusters).

4. Step-by-step plan

Towards a Euro-Mediterranean approach

In parallel with the debates underway within member states on the project of a European Energy Community, IPEMED recommends opening up a Euro-Mediterranean component involving a Euro-Mediterranean Energy Community. This measure would provide a solution for an energy-focused Europe. By involving countries that produce hydrocarbons and solar energy in current European negotiations, it would be easier to reach a compromise between all partners in the region. At the same time, European energy dependence on the Russian producer would diminish. This approach involves:

- Involving those southern Mediterranean countries that are interested in projects relating to the Euro-Mediterranean component of the European energy project.
- Setting up committees of organizations working on standards, interconnections, networks and energy market networks at Euro-Mediterranean scale, some of which are already underway.

In parallel with the ongoing integration process through energy standards and markets occurring between the two sides of the Mediterranean, strategic energy partnerships able to improve energy transfer between countries of the region should immediately be developed.

Western Mediterranean: a pertinent geographical space to launch the EMEC project

In the short term, the western Mediterranean appears to be a suitable geographical area to launch the first phase of the EMEC project. The first actions could be decided in a group of countries from the 5+5 Dialogue. As part of the European Union's reinforced cooperation procedure, several countries in southern Europe could also get together to make propositions to Maghreb countries.

It is by gradually building up a "Euro-Mediterranean Energy Community" (EMEC), with a strong production dimension, that energy will act as a driving force in Euro-Mediterranean economic integration.