

CURRENT ENERGY SITUATION IN THE MEDITERRANEAN REGION

South and North: complementary energy issues



FAST RISE IN ENERGY DEMAND IN THE SOUTHERN AND EASTERN MEDITERRANEAN COUNTRIES¹

By 2025, primary energy demand in the Mediterranean is projected to have increased 1.5 times compared to 2006.

Countries on the southern and eastern rim of the Mediterranean look set to rise to 42% of the total energy requirement, against 29% in 2006. Per inhabitant consumption in this region is still 3.5 times lower than that of northern Mediterranean countries, but energy demand is growing 4 times faster: energy consumption rises by 4.2% per year on average against 1.1%, electricity consumption rises by 6% vs. 1.7%. Turkey is set to become the second largest energy consumer in the Mediterranean basin.

In the northern Mediterranean countries, transport is the most demanding sector, consuming 32% of the energy in 2005. In the southern and eastern countries, the industrial and residential sectors are the largest consumers, with respectively 36% and 27% of the consumption.

Fossil fuels (oil, gas and coal) make up 80% of the energy supply: 94% for the southern and eastern countries, 75% for the northern countries. Algeria, Libya, Egypt and Syria supply 22% of the oil and 35% of the gas imports of the Mediterranean basin. The remaining countries are net importers of energy.

Renewable energies excluding hydro-electricity stand at 1 GW in the south and 19 GW in the North, i.e. less than 3% of the total power generation of the Mediterranean basin.

By 2020, the Mediterranean region will have to equip itself with an extra 191 GW of power capacity in order to meet demand: 106 GW in the South and East, and 85GW in the North. These new capacities would double the annual production of electricity in the South and East, raising it to 1000 TWh, and will increase it by around 30% in the North.

In business as usual scenario, projections estimate that renewable energy production capacity will increase by 4 times in the North and will take off in the South and East with 13 GW being installed. Renewable energies, apart from hydraulic and biomass, will however represent a small

proportion of all the power, from 2.8% of primary energy to 3% in the southern and eastern countries, and from 3% to 4.2% in the northern countries.

ELECTRICITY PRODUCTION CAPACITY AND ANNUAL PRODUCTION IN THE MEDITERRANEAN BASIN

	Production capacity	Annual production	Annual per person consumption
Northern rim 2005	321 GW	1 380 TWh	6 471 kWh/pc
Northern rim 2020	406 GW	1 780 TWh	8 815 kWh/pc
S and E rim 2005	103 GW	500 TWh	1 862 kWh/pc
S and E rim 2020	209 GW	1 000 TWh	3 077 kWh/pc

RENEWABLE ENERGY PRODUCTION CAPACITY AND PRODUCTION IN MEDITERRANEAN BASIN

	Production capacity	Annual production
Northern rim 2005	19 GW	51 TWh
Northern rim 2020	73 GW	96 TWh
S and E rim 2005	1 GW	2 TWh
S and E rim 2020	14 GW	33 TWh

Source: Mediterranean Energy Perspectives 2008, OME, December 2008

1. Source: Mediterranean Energy Observatory (OME)

2. Southern and Eastern Mediterranean countries: Morocco, Algeria, Tunisia, Libya, Egypt, Jordan, Israel, Palestinian territories, Syria, Lebanon and Turkey.

3. Northern Mediterranean countries: Portugal, Spain, France, Italy, Albania, Bosnia-Herzegovina, Croatia, Macedonia, Serbia, Slovenia, Greece, Malta and Cyprus.

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CO₂ EMISSIONS AND INCREASING ENERGY DEPENDENCE⁴

▣ **CO₂ emissions** caused by energy consumption might rise by 55% between now and 2025 in the northern Mediterranean countries, and by 119% in the southern and eastern countries compared to 2006. Emissions in Northern and Eastern countries may also rise to 47% of total emissions around the Mediterranean basin, against 33% in 2006, despite per capita emissions 1.8 times lower than those of inhabitants of the northern rim countries.

▣ **Energy dependence** might rise from 77% in 2006 to 88% in 2025 for southern and eastern countries that are net importers, and from 68% to 73% for northern countries. There would be extra social and economic costs caused by rising oil and gas costs.

ENSURING POWER SUPPLY AND DEVELOPPING LOW-CARBON ALTERNATIVE ENERGIES

The North must strengthen its supply chains of electricity by developing links with southern countries, which is where the planned Mediterranean energy network fits in.

The EU has set itself three targets for 2020: 20% lowering of greenhouse gas emissions, 20% renewables in final energy consumption, additional 20% of energy saving beyond existing energy policy measures.

In order to achieve these targets, the EU has planned to cooperate with other countries in building new renewable electricity production capacity in the South. This cooperation between States in the northern and southern parts of the Mediterranean is part of the broader Kyoto process framework and will enable southern countries and project promoters to generate carbon credits through Clean Development Mechanism (CDM) projects.

THE HUGE POTENTIAL OF SOLAR ENERGY

The Mediterranean countries enjoy a great deal of sunshine and have a lot of empty space on which large-scale power generation units can be installed.

Building new solar power plants would supply a proportion of countries' domestic energy needs and would generate revenue from exports. Countries would be able to increase their energy independence and safeguard fossil fuel resources which reserves decrease even in countries that have them. Some Mediterranean countries, for example Israel, Jordan and Tunisia, already have a good experience of using solar heating systems. Photovoltaic cells, projected to be expensive at least until 2020, are used mainly to provide electricity to more remote rural areas- 13MW have already been built south of the Mediterranean.

Concentrated solar power (CSP) is still in its infancy but a few with different technologies power stations are at the planning stage. Production costs are on a par with those of standard power stations, which makes their use in wide-scale commercial production feasible.

It is estimated that around 20 GW of new power generation capacity - CSP, photovoltaic and other renewable energy plants- can be developed by 2020.

4. Implementing a Mediterranean energy network is one of the six priority EC projects aimed at ensuring energy security in Europe. Strategic Energy Review, 13th November 2008

