

ENERGY AND CLIMATE CHANGE

Total energy demand up by almost 50% in 15 years

Energy comes from natural resources (minerals, plants, wind, sun...). It is one of the supports for all human activity and its use produces more-or-less immediate effects on environments and climates (greenhouse effect). Supplying energy requires heavy investment and consequently triggers a long term effect from the economic as well as the social and environmental point of view.

The Mediterranean region provides a perfect illustration of this issue. It gathers together around a common sea a collection of countries unequally endowed with energy resources, yet all of which have some leeway for improving their energy use efficiency and boosting security of supply whilst contributing to more sustainable energy development.

The current situation and trends:

- ✓ Total energy demand could increase by 65% by 2025 (compared with 2000)
- ✓ Energy wastage is estimated at 20%
- ✓ Renewable forms of energy (excluding biomass) represent 3% of the energy mix in the Mediterranean
- ✓ In 2005, 9 million Mediterranean citizens had no access to electricity (South and East) – the figure was 16 million in 2000
- ✓ In 2025 the countries to the South and East could well account for 40% of total consumption (27% in 2000)
- ✓ CO₂ emissions related to energy activity in the Mediterranean could increase by 32% by 2020 (OME)
- ✓ Total primary energy demand could increase by 45% between 2005 and 2020 with electricity growing by 55% over the same period (OME)
- ✓ Electricity consumption in the Northern countries is 3.8 times higher than in the countries to the South and East of the Mediterranean.

In 2000, fossil energies (oil, coal, gas) dominated energy supply in the Mediterranean: over 75% of consumption to the North, 96% to the South and East, the rest largely being made up of nuclear and hydraulic electricity. Leaving out biomass, renewable forms of energy only account for 3% of the Mediterranean countries' energy balance today, although there is great potential for them in the region (particularly solar and wind energy).

The Mediterranean energy system is marked by

- ✓ Its vulnerability in supply and cost terms
- ✓ Unequal natural supply, access and energy consumption between countries
- ✓ The damage it causes to the environment and human health

If the trends observed over the last 30 years persist, total primary energy demand throughout the Mediterranean basin could well increase by 45% between 2005 and 2020 (OME). This growth, which is four times higher in the countries to the South whose populations are expanding, will result in

increased energy dependency, higher supply costs and a notable impact on the environment, in particular a sharp rise in CO₂ emissions.

This model for energy development does not appear to be compatible with the aims of sustainable development.

The Blue Plan scenario proposes more rational use of energy (reducing network loss, insulating housing, energy efficient domestic appliances and industrial technology, transport etc.) combined with more intensive use of the Mediterranean's renewable energy potential (sun, wind). Given the technology currently available, it is estimated that renewables (geo-thermal, sun, wind and hydraulic) could account for 14 % of the primary energy balance in 2025 instead of the 4 % for the trend scenario.

More rational use of energy would provide potential savings in total energy demand by 2025 in the order of 20 to 25 % (depending on the country and the level of waste), using technology which is already available.

Housing and the tertiary sector provide the greatest potential energy savings, particularly on the Southern shores, which are witnessing huge population and urban growth.

Besides the benefits in energy saving terms, this scenario also means that

- ✓ Oil demand can be stabilised in 2025 at its 2000 level
- ✓ The equivalent of half the current demand for natural gas can be saved
- ✓ All the risks and environmental impact related to the consumption, transport and production of energy can be reduced, particularly in terms of gas emissions (-25 %), CO₂ in particular
- ✓ Jobs can be created in innovatory sectors
- ✓ The lifespan of resources can be lengthened in the producer countries to the benefit of future generations.

The Blue Plan is currently conducting a regional study on the subject of « Energy and Climate Change in the Mediterranean » with the financial backing of the European Investment Bank, the three specific objectives of which are:

1/ to update information on climate change scenarios in the region,

2/ to assess specific measures and estimate the economic cost of reducing greenhouse gas emissions, especially CO₂ from the production and consumption of energy,

3/ to assess the needs, effects, costs and benefits of alternative adaptation scenarios for the energy system, to the extent that climate change is already inevitable.