



Mediterranean and National Strategies for Sustainable Development

Energy Efficiency and Renewable Energies Tunisia - National Study Summary

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March 2007

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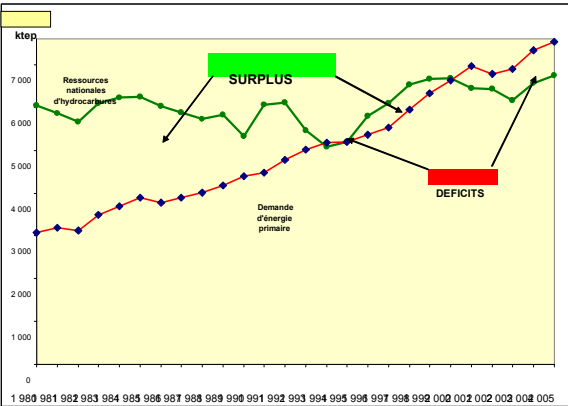
1. Stakes and sustainability of energy

In Tunisia, the consumption of primary energy is assessed at 8.5 Mtoe, covered prevalently by oil products at 49%, while natural gas is today well represented, at 38%. Biomass is essentially used to cook bread and food in rural areas and represents 13 % of primary energy consumption. Lastly, renewable energies (hydropower, wind and solar water heating) level off at a mere 0.6% in the primary energy balance for 2004.

2004 Primary energy consumption in Tunisia per energy type

	Primary energy consumer (1000 toe)	Share (%)
Oil products	4 127	48.7%
Natural Gas	3 184	37.6%
Renewable Energies	47	0.6%
Biomass	1 112	13.1%
TOTAL	8 470	100 %

Since the end of the 1960s, Tunisia has benefited from relatively secure energy balance surplus; but the 1980s saw the advent of the era of energy dependency.



Comparison of evolutions in national fossil fuel availability and demand in Tunisia (kteo)

In 1994 for the first time, Tunisia recorded a deficit in its energy balance. Following the extension of the gas pipeline between Algeria and Italy and the start-up of operations in the Miskar gas mine in 1996, surplus was restored, but as of 2001, deficits appeared again as a result of increasing demand and stagnating supply.

Although a Party to the Kyoto Protocol, Tunisia has no commitment to reduce GHG emissions. However, over the last ten years, the national choices in energy (rational use of energy, development of natural gas consumption) and development (emphasis placed on low-energy intensive industries and a service-focused economy) have led to the decoupling of air pollutant emissions and economic growth.

2. Indicators

The contribution of the three main renewable energy (RE) technologies in Tunisia (Hydropower, Wind, Solar water heating) accounts for 46 ktoe and represents 0.6% of the primary energy balance for 2005.

1000 tep	2000	2001	2002	2003	2004	2005
Hydropower	14,7	12,7	14,4	37,1	33,3	31,5
Wind	5,3	5,5	6,8	7,5	9,5	9,2
Solar water heating	1,8	2,7	3,5	4,0	4,4	5,8
Total Renewable energy	21,7	20,9	24,7	48,5	47,2	46,4
Contribution to conventional primary Energy balance (%)	0,3%	0,3%	0,4%	0,7%	0,6%	0,6%

Contribution of RE in the conventional primary energy balance of Tunisia

According to the strategic study on RE¹, within the framework of a “voluntarist” scenario, the potential achievable by 2010 could represent 310 MW in wind, 28 MW in biogas² and 214 000 m² in installed solar water heating. More recently, the government has decided to upscale developments on the solar water heating market to 620 000 m² by 2010.

The potential in hydropower is estimated at 8 MW and must be included in the RE potential.

The potential in RE is expected to produce 180 ktoe in energy savings by 2010, i.e., 2.1% of national consumption in primary energy.

As regards energy efficiency, Tunisia will have made energy savings of 1.8 MToe between 1987 and 2004.

The 11th Economic Development Plan in Tunisia targets 640 MToe in energy savings by 2010 through ambitious objectives to upscale the policy on rational use of energy (RUE) in all sectors and in “technological” areas, such as cogeneration, building heat insulation, energy certification of household appliances, more efficient lighting.

3. Current RE and RUE policies

To promote energy savings, Tunisia has implemented a financing mechanism through the *Fonds National de Maîtrise de l'Énergie* (National Energy Savings Fund) to subsidize: (i) 20 % of all RUE investments undertaken by corporations; (ii) 50 % of energy audit costs; (iii) 20 % of all solar energy investments; (iv) 50 % of investments in RE and RUE demonstration initiatives ...

Furthermore, gas prices will be supported to promote more general use of gas in all sectors and throughout the country. The support to natural gas has a direct impact on electricity prices since electricity in Tunisia is essentially supplied by gas-powered plants.

Recently, Tunisia has strongly reinforced the regulatory framework governing energy savings with the enforcement of Law 2004-72 to consolidate promotional texts, to clarify the energy savings

¹ Conducted in 2004.

² Essentially supplied by household waste disposals.

concept, to increase the responsibilities of the ANME (National Energy Savings Agency) and to increase financial support to RUE initiatives.

Decree n°2005-2234 has further enlarged the scope by increasing the subsidies for energy savings initiatives from 5 % to 20 %, and by adding a 20 % subsidy for the purchase of solar water heaters.

Lastly, the National Energy Savings Fund was created under the Law of Finance n° 2005-106 to further consolidate the energy savings policy.

In 1985, Tunisia reinforced its institutions with the creation of the Agence Nationale de Maîtrise de l'Énergie (ANME). Despite fluctuations, the ANME has always demonstrated its expertise and the scope of its responsibilities was enlarged in 2005, supported by a larger staff, increased financial resources and wider areas of intervention.

4. Obstacles, possible solutions, necessary reforms

Although substantial experience has been acquired over the last 20 years in the field of energy management, many obstacles remain which could considerably impact the achievement of targeted results.

The energy management program is expected to yield an annual 2% drop in global energy intensity, under the 11th Economic Development Plan.

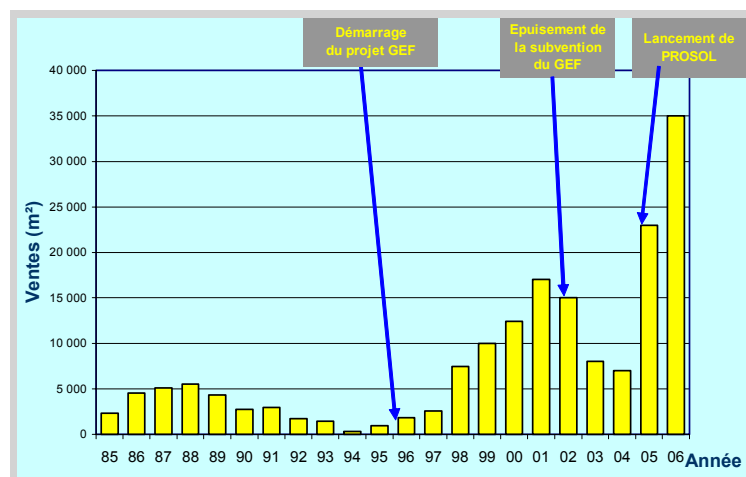
To achieve this ambitious objective, Tunisia is planning to implement innovative funding mechanisms in the field of energy efficiency, such as investment funds, specific credit lines, interests rebate, and loan guarantee funds, in cooperation with the National Energy Savings Fund.

In addition, the application of fair energy prices is one the main objectives of the 11th Plan. It is clear that this objective will not be easy to achieve in view of the social and economic stakes involved, but it remains the key success factor for a successful energy savings policy and public authorities will need to show the strongest resolve in this area.

Regulatory measures are also necessary to achieve the targets of the 11th Plan, particularly as regards electricity and oil. Furthermore, operational reforms are required to make the National Energy Savings Fund more attractive, by increasing resources and enhancing flexibility.

5. Success Story

- i. **PROSOL residential:** this project was started in 2005 to boost the solar water heating market through an innovative mechanism combining investment subsidies and interests rebate, with loans from the banking sector. The system is original in that loan reimbursement are included in the electricity bill (STEG, Société Tunisienne d'Electricité & Gaz), which secures pay-back and therefore makes it possible for banks to offer more favorable interest rates. The market has undergone major recovery with PROSOL and has attracted new industrial operators and installer networks, leading to the prolongation of the PROSOL residential initiative, to the renewed involvement of the STEG and to the stronger involvement of the banking sector and lastly, with the support of UNEP and the Italian Ministry for the Environment, the forthcoming launch of a « tertiary PROSOL », similar to PROSOL residential.



Evolution of the solar water heating market in Tunisia

ii. **A boosted industrial energy efficiency program:** Tunisia has boosted its industrial energy efficiency process through the implementation of the following measures:

- The creation of a specialized unit within ANME, endowed with significant human and financial resources, and dedicated to industrial energy efficiency.
- The implementation of an IGCE (Industries Grosse Consommatrice d'Energie) Task Force to cooperate closely with the relevant players and to contribute technical and institutional support in the application of energy efficiency programs.
- The launch of a « generic action » process based on the identification of selected branch-specific actions, self-evident, simple, efficient and, as shown by experience, easy to generalize. The process is based on the simplification of procedures applicable to contract-programs and to the access to subsidies.
- The contribution of experts, acting as relays in the field with industrial establishments, to identify energy efficiency actions, contract-programs preparation, support to the set up of action plans, and monitoring of contract-programs.
- The launch of cooperation projects with companies, targeting each branch, including training workshops as well as consultation, organization and best practice presentation seminars on energy efficiency.

This set of measures has already yielded results as regards the number of signed contract-programs (75 in 2006, i.e. as many such contracts signed by the industrial sector over the period 1993-2005), as well as regarding efficiency and speed of implementation by companies.