

**Société Tunisienne
de l'Electricité et du Gaz**



**الشركة التونسية
لل كهرباء والغاز**

INTERNATIONAL CONFERENCE ON CLIMATE CHANGE STRATEGIES FOR AFRICAN AND MEDITERRANEAN REGIONS

MAIN INITIATIVES FOR ENERGY SAVING IN TUNISIA

BY

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Mr Chairman,
Distinguished Guests,
Ladies and Gentlemen,

It is a great pleasure and honour for me to attend this major event and to have the opportunity to share with you our views about a serious topic, relating to climate change.

Today, it is widely recognised that climate change and global warming have evolved from a scientific fact to a daily reality. They seriously impact our natural resources and therefore the standard way of living of our populations.

Indeed, Energy Conservation must be considered as the cornerstone of energy policies and climate change. All actors and decision makers have to be committed in Energy Efficiency Programs. Serious initiatives have to be taken to save energy and preserve natural resources and environment.

Moreover, I strongly believe that certain vital sectors, like electricity, must integrate energy conservation as an additional and significant parameter to build energy strategy and take medium and long term decisions. Energy policy in general, and particularly electricity, must take into account three complementary challenges:

- Ensuring a secure supply of energy to a large number of end - users.
- Reducing the cost of supply in order to enable access to energy.
- Preserving natural and environmental resources by encouraging energy saving and reducing emission of green house emissions.

Ladies and gentlemen, In my presentation, I would like to put the stress on the relatively new and important issue of Tunisian initiatives to integrate energy saving in energy policy and development strategy. I qualified them by new initiatives, because they actually progressed well over the last decade, in harmony with national programs covering various fields: electrification, infrastructure, technological and social domains and environmental efforts.

Today, STEG is considered as a pioneer in the implementation of energy saving programs (efficient lighting, natural gas cooling, natural gas for vehicles, etc) and also in the introduction of new technologies, like natural gas combined cycle, photovoltaic systems, solar water heating and wind energy.

The electricity sector uses 37% of our national energy resources to generate electricity.

I personally accompanied the evolution of this important public institution and witnessed the achievement of many successful experiences and programs in various domains, starting from the use of small size plants with high specific consumption ratios to the introduction of more economical and environmentally cleaner technologies.

Over the last two decades In Tunisia, and in order to promote energy conservation in general, we concentrated on removing the barriers to energy saving programs. The effort was focused on the main barriers that hinder energy saving actions. To reach this target, several initiatives were taken; the most important are related to the institutional framework, financing and the promotion of new and efficient technologies at an industrial scale.

As a consequence to national efforts, the Tunisian energy intensity decreased from more than 0,4 Toe by thousand Tunisian Dinars of GDP , before 1990 to less than 0,32 Toe currently. The target is to improve this energetic ratio to bring it to the similar level observed in some countries of the northern Mediterranean basin.

Given that the main topic today is related to climate change and before I come to Energy Saving Initiatives, let me first give you a brief introduction on what have been achieved by Tunisia regarding environmental aspects, particularly the Kyoto Protocol.

On July 1993, Tunisia had signed the United Nations Convention on Climate Change and proceeded to Kyoto Protocol ratification on June 2002. To implement The Clean Development Mechanism (CDM) program in our country, a National Designated Authority (NDA) was created and extensive training sessions had been organised for industrial operators and institutions.

As a result, a national portfolio of CDM projects had been defined which target is to achieve total avoided emissions of 12700 kteCO₂ (kilo tons of equivalent CO₂) by the end of the period 2006-2010.

Meanwhile, the legal framework relative to energy conservation and renewable energy was progressively adapted to the energetic and environmental context in order to encourage investment in energy savings. The main topics covered by the new legislation are the followings:

- Regarding cogeneration, the new legal framework intends to enable industries to generate heat and electricity and inject electricity surplus in the grid. A fair tariff is also being implemented. STEG, as a public utility, contributed actively to put in place the suitable legal texts, contractual and technical conditions of in terconnection to the grid.
- For renewable energies, the new legal framework intends to encourage industries to implement electricity generation projects from renewable resources, especially wind energy. Photovoltaic electricity generation by individual installations connected to the grid is also covered. Similarly to cogeneration, STEG was involved in the technical and commercial sides.

- By the demand side, It is worth mentioning interesting mandatory energy saving actions like energy audits in the industrial and services sectors; especially fridge and ongoing air-conditioner labelling project. Recent surveys of STEG utility showed that the refrigerator is responsible of almost 40% of Tunisian household electricity consumption. As for the device of air-conditioning, it is growing faster and has an impact on the way to operate plants to meet loads in summer.
- Recently, and in order to encourage energy savings, STEG created a subsidiary: STEG International Services, an Energy Services Company (ESCO) which will contribute actively in promoting energy efficiency actions such as cogeneration, industrial process optimisation and any other technical support, especially in the domains of electricity and gas.

As for the financial aspect, which I think is the main barrier to energy saving, two main initiatives must be underlined.

- The first one is related to the creation of the National Fund For Energy Conservation decreed on august 2005. This fund intervene in financing several actions, starting from energy audits and pilot projects to energy efficiency actions, fuel substitution and solar water heating.

To feed this fund, a special tax on new individual cars and air conditioners was established in the same year.

- Another recent and interesting initiative in the same field, was the first partnership between public operators (STEG, ANME, banks) and private actors (private bank, equipment suppliers) to set up an interesting financing scheme to support a large scale market operation in order to promote solar water heaters.

By using the electricity bill to collect payments from its customers, STEG plays a key role in the financial scheme: It secures the bank, makes the acceptance of the device easier by the customer while guaranteeing payments to the equipment supplier.

As a result, the expansion of solar water heaters market was more than satisfactory over the last two years: sales increased from 36000 square metre last year to 47000 square metre on October 2007. The objective is to reach more than 500 000 square metre at the end of 2011.

Ladies and gentlemen, energy saving initiatives in Tunisia were focused not only on the demand side; the offer side was also targeted, especially in the electricity sector where technical initiatives have been taken in order to support national energy strategy.

Regarding conventional electricity generation and network operation, strategic decisions was taken in several domains. The objective was to endow our country with a strong and also energetically efficient electrical system that supplies clean and cheaper kWh, while preserving fuel resources.

Let me present the most significant initiatives.

- Thanks to the introduction of gas combined cycle technology with an efficiency exceeding 50%, specific consumption decreased significantly to reach 240 Toe currently, against more than 320 Toe previously. Positive environmental results were also recorded. Presently, electricity generation carbon intensity is only around 540 gram per kWh versus more than 600 gram per kWh in the Northern Mediterranean basin.
- The use of an economical dispatching to operate electrical grid was more than profitable in terms of primary energy efficiency and rational use of fuel by STEG.

- Furthermore, keeping technical and non technical losses at an acceptable level (12%), despite the large expansion of the grid and the load growth was also an important source of energy saving. This was enabled by suitable planning and good maintenance.

Ladies and Gentlemen,

Maybe the most important initiative to save primary energy and contribute efficiently to preserve the environment in Tunisia, was the courageous decision to start early the integration of wind energy by STEG. The global framework of this initiative was threefold: promote this new technology of renewable energy, save fuel and participate to environment preservation.

The wind installed capacity in the site of Sidi Daoud, evolved from 10.5 MW installed capacity in 2000 to 19 MW within 2003 and will reach 54 MW in the near future. In addition, following a governmental decision, STEG is implementing 120 MW new capacities, expected to be in operation in 2009.

With this new project, the share of electricity generated from this renewable resource is expected to reach more than 4.2%, one of the highest rates in electricity generation field.

Ladies and Gentlemen, I would like to conclude my speech by formulating some remarks:

- Nowadays, as I have stated at the beginning of my address, there is no need to demonstrate the negative effects of climate change on human activities and ecological equilibrium. It is time to boost energy saving as a privileged means to mitigate these effects.

- Developed countries still have an important role to play in this field; offering partnership based on suitable financing, technological transfer and scientific research cooperation.
- As a public utility STEG had always helped actively in developing industrial and social national programs for energy savings. On the medium and the long term, we aim to be one of the main vectors of a large scale energy saving programs.

Thank you for your attention