

National Energy Efficiency Strategy

First: Introduction

Energy forms a very difficult challenge to Jordan because of the lack of local energy resources and the great need for energy for social and economic development.

In light of this situation and the social and economic development plan which is being implemented to improve the quality of life for Jordanian citizens, it is expected that the demand for energy will grow to high levels reaching 3% annually and around 6% annually for the electric consumption.

This situation, in addition to the regional development of 2003 have pushed the energy bill to around 800 million Jordanian Dinars (JD) annually constituting 13% of the gross domestic product GDP and around 45% of the value exported goods which is considered by international standards as a heavy burden in addition to the burden of investing in energy production, refining, transport and distribution which amounts to around 150 million JD annually.

This heavy Burden on the local economy requires the implementation of an effective national strategy with the aim of securing the energy needed for a comprehensive development with the least cost possible and to reduce its burden on the economy.

Improving energy use efficiency means using available energy efficiently by eliminating waste and improving the technologies used without negatively effecting production or the standard of living. This can be achieved through a set of policies and the gradual implementation of economical, political, technical and management programs by the government which will aim at improving production and energy use patterns in the different sectors (buildings, industrial, transport...)

International studies in this field have shown the possibility of improving energy use efficiency by up to 15% in the first five years of implementing energy efficiency programs or up 3% annually. in Jordan, this can be achieved through the implementation of the National Energy Efficiency Strategy without disturbing production or effecting the standard of living

and in return saving the treasury tens of million in hard currency annually, in addition to reducing the emission of harmful gasses to the environment.

Second – Goals

The main goal of the National Energy Efficiency Strategy in Jordan is to clearly define the course of action which will achieve sustainable economical development and reduce harm to the environment.

Taking into consideration the strong connection between energy and environmental and economical development, the strategy will basically focus on achieving many goals the most important of which are:

1. Reduce energy consumption without negatively effecting production or the standard of living and in order to lower the imported oil bill on the national level and reducing the emission of harmful gasses to the environment.
2. Improve the standard of living.
3. Achieve balance between imports and exports.
4. Reduce production cost and improve competitiveness of the local industries and other sectors.
5. Reduce investment in the equipment used for the production, conversion, transport and distribution of energy.

Third- General policies:

The National Energy Efficiency Strategy will focus on the following policies to achieve its goals:

1. Tariff policy

The proper energy pricing is considered as one of the best tools to improve energy use efficiency in the different sectors in a way which will force end user to search and adopt the best procedures to conserve energy and to choose the right fuel for his application based on its cost and also purchase the most energy efficient technologies. This will gradually lead to removing subsidies on petroleum products and electricity and applying a pricing structure based on actual cost.

2. Legislations

Obligatory and directed legislation are considered as the most important tools in improving energy use efficiency and increase the demand for high efficiency equipment and services. The following are samples of such legislations:

- * **Taxation policies** which will encourage the implementation of energy efficiency projects and the manufacturing of high efficiency equipment locally.
- * **Technical standards** which will set the minimum standards for energy efficiency for imported and locally manufactured equipments.
- * **Thermal insulation** in residential and commercial building in certain zoning areas should be enforced.
- * **Building codes** should be enforced in certain zoning areas.
- * **Customs Duties** should be used as a tool to encourage importing energy efficient equipment and to discourage importing low efficiency ones.
- * **Traffic Congestion** should be reduced and traffic flow improved to minimize the waiting time at traffic heights in order to reduce idling fuel consumption.

3. Awareness and Training

Awareness programmes for the benefits of the improvement of the efficiency of the energy consumption should be implemented aiming at strengthening the main policies of the strategy through the following:-

- Increase the awareness of the economic importance of the efficiency of energy consumption to the concerned sectors, such as investors and energy services suppliers. This will encourage the supply of the high efficient series and products which will lead to the increase of the investment income.
- Increase the public awareness of the energy consumption efficiency for all energy consumers, which will improve the public behavior in energy consumption. Accordingly the demand on the high energy efficient products and services will be increased.

The awareness of energy consumption efficiency is a continuous process which could be achieved through the effective awareness, such as:- media, education programmes, advertisements, seminars and conferences, schools and universities syllabus. Moreover the private sector and the non-governmental organizations (NGOs) have a positive role in directing and implementing awareness campaigns.

Establishing an integrated energy database is very essential for this strategy, which helps energy consumers and energy services suppliers to take the right decisions of the optimal consumption and investment in the energy sector.

In the field of training and national capacity building, it will be necessary to enhance the capabilities of the targeted groups for the high efficient technologies of energy conservation, and provide policy makers and legislators with the needed experiences and information to set the concerned laws and regulations and make available the skilled and trained personnel to the factories and energy consumers to execute the energy efficiency programmes.

4. Financial Policies

Setting proper tools to finance projects and activities of improving energy consumption efficiency is essential to help energy consumers to overcome the investment obstacles through:-

- Increasing the awareness among local financing society of the importance of energy conservation projects and its economic revenues.
- Establishing a special fund for financing the energy conservation projects with a shared capital between the government and donors institutions to provide soft loans for these projects.

Fourth – Implementation procedures

The implementation of the national strategy for improving the energy consumption efficiency requires executing a number of necessary procedures through a continuous process of planning, execution follow-up and evaluation. In addition to that, specifying definite roles and responsibilities for the concerned institutions as explained in the following table. The Ministry of Energy and Mineral Resources (MEMR) should follow-up the progress of the implementation of the procedures and issue a report annually.

Measure	Implementing Institution
1- Gradual elimination of subsidies to oil products and electricity prices in order to make them cost reflective	MOF MEMR ERC
2- Preparation and implementation of public awareness program in the field of energy efficiency	MEMR MOE NERC
3- Preparation of "Energy Efficiency Code"	MEMR MOPWH NERC AOJE
4- Design and implementation of Energy Efficiency training programs for those who are involved in energy efficiency	MEMR NERC AOJE
5- Establishment of Energy Data Bank	MEMR
6- Elimination or reduction of custom duties & sales tax on materials and equipment that contribute to energy saving including thermal insulation materials.	DOSM MEMR ERC NERC
7- Provision of grants and soft loans for large and costly energy conservation projects.	MEMR MOP
8- Oblige importers and manufacturers of energy consuming appliances to fix "energy efficiency label " indicating the annual consumption of the equipment" on their product.	DOSM MEMR NERC
9- Activation of "Building Codes", in particular, parts related to energy efficiency	MOPWH MOGA AOJE
10- Application of thermal insulation & other energy efficiency measures in design and construction of public buildings	MOPWH NERC AOJE
11- Oblige large industrial & commercial institutions to appoint "qualified energy auditor" to carry out periodical energy audits.	MEMR NERC AJOE
12- Taking necessary measures to improve efficiency, including electrical load management, of production, transmission and distribution of electricity.	EU ERC
13- Implementation of energy efficiency demonstration projects like energy saving lamps,	MOF,MOP, MEMR,MOA,

efficient street lighting and solar water heaters	MOM NEPCO,NERC
Measure	Implementing Institution
14- Promotion of mass transportation systems	TRC
15- Encourage ownership and usage of small cars and discourage usage of old cars	MOF DOL
16- Elimination of traffic jams through replacement of traffic lights by tunnels and bridges including implementation of green street traffic lights systems	TRC MOGA MOM
17- Encourage and intensify construction of traffic signs that show directions to different places	MOGA MOM MOPWH
18- Promotion and establishment of "Taxi stop" in several places, printing of maps that shows "bus lines" in different parts of the kingdom and make those maps available to the people	TRC
19- Investigate the feasibility of using trains between Amman and Zarqa for transportation of people & between Aqaba and Amman for transportation of goods	TRC MOT
20- Design and implementation of energy efficiency projects in the water sector	WA NERC
21- Promotion of renewable energy technologies	MEMR NERC

Abbreviations

Ministry of Finance	MOF
Ministry of Energy & Mineral Resources	MEMR
Ministry of Public works and Housing	MOPWH
Ministry of Planning	MOP
Ministry of Agriculture	MOA
Ministry of Transport	MOT
Ministry of Municipalities	MOM
Ministry of Education	MOE
Electricity Regulatory Commission	ERC
Transport Regulatory Commission	TRC
- Municipality of Greater Amman	MOGA
- Department of Specification and Metrology	DOSM
- Department of Cars and Drivers Licensing	DOL
- Association of Jordanian Engineers	AVJE
- National Energy Research Centre	NERC

- Water Authority	WA
- Electric Utilities	EU