



## ENERGY EFFICIENCY IN THE MIDDLE EAST AND NORTH AFRICA

The World Bank is preparing a study on **Energy Efficiency in MENA Countries**. The study aims to:

- Identify the obstacles to energy efficiency
- Highlight the key issues
- Develop an understanding of the political economy of energy subsidies
- Identify implementation strategies for improved energy efficiency

It is hoped that this study will provide a platform for dialogue on energy efficiency in the region.

If you are interested in updates of the study's progress, or in commenting on its findings, please register at:

<http://www.worldbank.org/mena-energyefficiency>.

## INTRODUCTION

Energy efficiency reduces the fiscal cost of energy subsidies and energy sector investments, improves economic competitiveness, raises household welfare, lowers local and global pollution and reduces the perception of national energy insecurity.

In the Middle East and North Africa (MENA) region, governments have accorded a high priority to energy efficiency and expressed a strong interest in better understanding its implications. There is room for improvement: only 6 of the 17 countries for which data are available have energy intensity levels below the world average of 0.21 tons of oil equivalent per unit of GDP. Around a sixth of the World Bank's MENA region energy portfolio explicitly addresses energy efficiency.

The Bank is now preparing a study on 'Energy Efficiency in MENA Countries'.

The objective of the study is to create a platform for policy dialogue on energy efficiency based on lessons of international experience and the specific needs of MENA countries.

The scope of the study is broad. It will identify the obstacles to energy efficiency, highlight key issues to be addressed, develop an understanding of the political economy of energy subsidies and identify implementation strategies for improved energy efficiency.

The Bank will seek to build ownership and partnership by consulting with MENA governments, relevant stakeholders, donors, bilateral and multilateral agencies and the private sector.

A synopsis of the study is provided below.

## ENERGY EFFICIENCY IN MENA

### Evidence of Energy Inefficiency

The study will begin by exploring evidence of energy inefficiency in MENA. While energy intensity provides a relatively good measure for efficiency levels, it does have its limitations in a region such as

MENA with high economic heterogeneity. Thus, the study will aim to arrive at a more robust assessment of the region's energy efficiency performance and benchmark it against other regions or similar economies or sub-regional groupings.

### Why Energy Efficiency Matters

- **Energy Efficiency and Economic Growth:** MENA is characterized by growing energy demand averaging 8-10% annually, high energy subsidy rates at 5-6% of GDP and high elasticity of energy demand to GDP. The study will aim to document the foregone GDP growth due to high energy intensity, the implications of energy inefficiency for public spending and energy security and, where possible, the impact of energy inefficiency on the cost structure of specimen manufacturing industries.

- **Energy Efficiency and Environmental Sustainability:** The study will compile and analyze data on local pollution and global emissions, with a view to assessing the potential improvements in local air quality. For example, at the local level, there are serious concerns with urban air pollution and rural indoor burning of biomass, both resulting in disease. The study will also examine potential reductions in MENA's greenhouse gas emissions.



Gas Flaring in Yemen - by Franz Gerner/WB

### MENA's Current Interest in Energy Efficiency

Several factors make energy efficiency an immediate priority for MENA policymakers:

- **Economic Factors:** High world energy prices increase the fiscal and economic cost of energy inefficiency both for producing and consuming countries. Structural economic changes such as the shift towards tradable manufactures and higher-value crops, coupled with a reduction in

trade barriers, are increasing the political interest in cost-competitiveness.

- **Demographic Factors:** The combination of high population growth and high urbanization rates is creating strong demand for power. Changing gender roles as the female labor force increases, is adding demand for energy services such as transportation, processed foods, etc.
- **Environmental Factors:** An expected increase in energy consumption for water desalination as renewable water resources decrease is a cause for concern.

### Sectoral Performance and Lessons Learned



Tunisia - by Curt Carnemark/WB

The study will investigate energy efficiency constraints and opportunities in several key sectors including: energy, transport, urban, water management, and manufacturing.

The study will also draw regional lessons from various national policies and sector programs or projects. It will identify obstacles to improved energy efficiency, and will bring in lessons from international experience.

### KEY ISSUES IN MOVING FORWARD

To understand why past energy efficiency policies and programs have yielded limited results and what the potential solutions are, the study will examine several key issues including:

#### Energy Pricing

Energy subsidies are widespread and have encouraged demand and hampered the adoption of energy efficient technologies. The study will review: (i) the region's experience with pricing policies and reforms, and the evidence on their impact; (ii) the political context in which pricing policies and reforms have been effected; and (iii) the

methodologies which have been used to justify pricing reforms.

#### Institutional and Financing Framework for Energy Efficiency

The impact of the region's numerous energy efficiency agencies is not clear. The study will therefore review: (i) the legal and regulatory framework for energy efficiency, and the mandates of implementation agencies including the role of municipal institutions; (ii) the effectiveness and cost of financial incentive mechanisms; (iii) examples of effective approaches from outside the region; and (iv) the potential role of global financing mechanisms.

#### Technical Solutions

The study will examine the scope for governments to promote energy efficient technologies. The study will assess the scope for economies of scale through stronger regional integration of energy markets, in particular power, gas, equipment and appliances markets. For instance, interconnected power systems provide more flexibility to import or export power based on least-cost generation and transport options. Greater integration of gas transport systems can also reduce transport and processing costs.

#### SOCIAL ASPECTS OF ENERGY EFFICIENCY POLICIES



Morocco - by Curt Carnemark/WB

required to: (i) identify the winners and losers from price reform, and (ii) consider how to make the transition to more effective social protection strategies. The study will therefore undertake a systematic analysis of who benefits from the current energy subsidies. Drawing upon existing work in the region, it will describe the region's experience of targeted social protection

programs and assess the scope for replacing energy price subsidies with such programs.

#### IMPLEMENTING ENERGY EFFICIENCY

The study will propose a framework for the implementation of energy efficiency policies, based upon international experience. Finally, the study will seek to identify the potential role of global financing mechanisms such as the Global Environment Facility (GEF), the carbon market, Global Gas Flaring Reduction (GGFR), European Investment Bank (EIB), as well as World Bank instruments.

#### WE WANT TO HEAR FROM YOU!

The World Bank will release drafts and invite comments and feedback as the study proceeds. The Bank strongly encourages those interested to sign up at

<http://www.worldbank.org/mena-energyefficiency>.

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