



# Up-scaling Energy Efficiency in the Residential and Services Sectors



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## Background

Rapidly expanding populations, economic growth, and widespread subsidies have contributed to a **rising demand for energy in the Arab world**. In the absence of serious corrective measures, this will lead to a loss in revenues, slowing down of development efforts, increasing vulnerability to international energy price fluctuations and a weakened energy situation across the region. This project seeks to improve energy efficiency in the residential and services sectors of ESCWA member countries through up-scaling energy efficiency programmes in the existing residential and non-residential building stock.

## A Focus on Existing Building Stock

ESCWA research shows that the residential and services sectors represent an important part of the total consumption of energy in the Middle East and North Africa region, with a share of at least one third of all the energy consumed. When looking at electricity consumption alone, this figure rises to 60%, of which the domestic sector represents a whopping 75%. To make matters worse, all forecasts indicate that electricity demand is set to rise in the near future.

Peak electrical demands typically occurred during the hot season (June – September), mainly due to the high electricity needs associated with air conditioning. Such high demand by the domestic sector is often being satisfied at the expense of productive sectors, which are crucial for development.

## Three Aims of the Project

**1 Reinforce the security and sustainability of energy supply by improving energy efficiency** of the residential and services sectors, thus reducing the energy bill for both end users and states and mitigating the impact of climate change.

**2 Alleviate energy poverty of the less fortunate** and most vulnerable groups of women and men. By reducing energy prices and targeting subsidies to the most needy.

**3 Increase regional and local integration of goods and services associated with energy efficiency to foster new employment opportunities and upscale energy efficiency programs** and projects targeting the residential and services sectors.

## **An unsustainable trend in energy consumption in the Middle East and North Africa Region**

Increases in electrical consumption and peak demands are largely due to the growing rate of urbanization and the rising standards of living associated with aspirations for greater comfort. It is further exacerbated by low energy prices, due to large subsidies, as well as inefficient household equipment, which make them affordable and attractive to an increasingly high number of potential consumers.

Energy efficiency efforts in the residential and services sectors in the region have so far failed to realize the vast potential that exists in those sectors to reduce energy consumption by at least 30 per cent and peak electrical demands by a comparable, or even higher, rate.

Should energy consumption patterns continue on their current trajectory, the very sustainability of continuing urbanization and rising living standards will be at risk. A substantial scaling up of energy efficiency efforts, focusing on sectors where greatest short-term gains can be made, is urgently needed.

## **How can ESCWA make a difference?**

Current efforts in most countries in the region focus on programmes and policies that are likely to only have an impact in the long-term, such as the development of energy standards and environmental rating systems for new buildings, expertise to conduct building energy audits, energy performance standards for household appliances and energy consuming equipment, and complex voluntary energy and environmental rating systems.

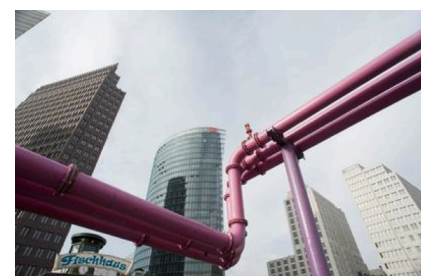
Few efforts, if any, focus on simple, immediate and large-scale actions targeting existing building stock and household consumption, such as improving thermal insulation of roofs, energy performance of large glazed areas, replacing inefficient lighting fixtures by high energy performance lighting systems, or the replacement of old and inefficient refrigerators by highly energy efficient models.

This project will focus on such initiatives and integrate them into low energy building design guidelines, tailored to special needs of communities in the ESCWA region. It will also develop appropriate financing schemes, involving private and public resources, to provide targeted end users with easy access to the finances required.

## **Synergy through collaboration**

The project will build on existing work that has been undertaken or is currently being implemented in the region and elsewhere, and strive to complement regional energy efficiency initiatives, such as the development of National Energy Efficiency Action Plans (NEEAP), led by the League of Arab States with the help of RCREEE and MED-ENEC, by helping countries meet their NEEAP commitments.

The project will seek the endorsement of the ESCWA Energy Committee and the Arab Ministerial Council for Electricity at the League of Arab States, as well as other relevant regional organizations. The project will also develop several related policy and implementation tools that can be adapted to different national contexts. Through these channels, the project seeks to inform and help shape other mid- and long-term programmes and initiatives targeting energy efficiency in the building sector.



### **Some Key Outputs of the Project:**

- ✓ Household and other equipment energy labeling systems and Minimum Energy Performance Standards
- ✓ Energy efficiency communication and awareness-raising campaigns
- ✓ Large-scale implementation schemes for disseminating energy efficient equipment and appliances as well as improving the thermal quality of existing building stock with public and private financing
- ✓ Training programmes for suppliers and installers of household equipment and construction materials
- ✓ Regional online platform for knowledge and information sharing

