



National Center for Research & Development/Energy Research Program (NERC)

Draft

National Energy Efficiency Action Plans (NEEAPs)

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Supported by



Our Activities

R & D

Training

Consultations

Testing

Maintenance

Implementation

- Solar Energy
 1. Photovoltaic
 2. Solar Water Heater
 3. CSP
- Wind Energy
- Rational Use of Energy
- Bio Energy
 1. Biomass
 2. Biogas
 3. Bio fuel
- Oil Shale

Key Indicators

No	Indicator	Unit	Year 2010	Year 2020
1	Electricity intensity	GWh/GDP(US\$)	1.13	1.28
2	National end use electricity consumption	GWh/year	14562	29059
3	Projected electricity consumption growth rate	% /year	7.6	
4	Share of electricity in final energy consumption	%	22.7	30.5
5	Share of electricity consumption by sector			
	Sector 1 Residential	%	41	34
	Sector 2 Industrial	%	25	24
	Sector 3 Commercial	%	17	25
	Sector 4 Water Pumping	%	15	15
	Sector 5 Street Lighting	%	2	2
6	Marginal cost of kWh supplied (2011-2013)	USD/kWh	0.0543	

Indicative target

	Baseline consumption GWh/5 years average	National indicative Energy Efficiency target			
		2020		2013 (First NEEAP) 2 years	
		%	GWh	%	GWh
Total	11291	20%	2258	4.4%	502
Sector 1 Residential	4447	25%	1112	5.6%	247
Sector 2 Industrial	3013	15%	452	3.3%	100
Sector 3 Commercial	1875	12%	225	2.7%	50
Sector 4 Water Pumping	1668	23%	384	5.1%	85
Sector 5 Street Lighting	288	30%	86	6.6%	19

Sectorial presentation: Planned and ongoing EE measures for 2012-2013

Residential

No	Title and description of the EE measure	Implementation period	Electricity savings for the first 2 years 2012-2013 GWh
2.1.1	Replacement of incandescent lamps with compact fluorescent lamps (CFL)	2012-2013	123
2.1.2	Energy Label program for four home appliances	2010-2013	68
2.1.3	Installation of Solar water heaters	2012-2013	93
2.1.4	Survey of energy consumption in Residential sector by the end of 2012	2012	N/A

Industrial Sector

No	Title and description of the EE measure	Implementation period	Electricity savings for the first 2 years 2012-2013 GWh
2.2.1	Mobile Energy and Environment Clinic	On-going	64

Commercial Sector

No	Title and description of the EE measure	Implementation period	Electricity savings for the first 2 years 2012-2013 GWh
2.3.1	Replacement of conventional Ballasts by Electronic Ballasts for fluorescent Lamps	2012-2013	31

Street lighting

No	Title and description of the EE measure	Implementation period	Electricity savings for the first 2 years 2012-2013 GWh
2.5.1	Replacement of Mercury lamps by efficient lamps and use Automatic street lighting controls and voltage regulators	In progress	36

Water Pumping

No	Title and description of the EE measure	Implementation period	Electricity savings for the first 2 years 2012-2013 GWh
2.4.1	Phase 1-Improvement of Energy Efficiency of the Water Authority of Jordan (IEE) & Phase 2- (EEP).	Ongoing	60 GWh/year

Detailed information of individual measures

Initiative 2.1.1	Replacement of incandescent lamps with compact fluorescent lamps (CFL)
Objective	The objective of this initiative is in line with the government energy strategy for 2007-2020. It aims at promoting compact fluorescent lamps and enhancing the confidence of Jordanian citizens on the benefits of utilizing CFL lamps.
Description of the measure	<p>This measurer intends to distribute one million CFL in residential sector, specifically for low consumption category. It is intended to replace the inefficient incandescent lamps with efficient CFL lamps.</p> <p>The government of Jordan represented by the Ministry of Energy and Mineral Resources (MEMR) will initiate this process and distribute one million CFL lamps.</p> <p>Electrical Distribution Companies have intention to support the distribution of lamps to the targeted consumers. Therefore, the CFLs will be distributed through distribution companies according to the area under the concession of each company.</p> <p>An implementation plan shall be prepared in full coordination with all relevant stakeholders.</p> <p>A mechanism for collecting the replaced incandescent lamps will be prepared and arranged prior to the distribution of lamps to insure that all CFL lamps will go to the right place.</p>
Implementing agency	MEMR will be in charge and supervise the whole implementation of the program.
Stakeholders involved	The three distribution companies (JEPSCO, EDCO and IDECO) will support this program. NERC also will be involved in the whole implementation process. ERC, NEPCO and Local Suppliers of CFL are also involved.
Target group	Residential sector
Program cost	It is estimated that the program will cost two million JOD (2.86 million USD).
Total resource cost	The end users will receive the lamps free of charge and they will not bear any replacement cost. Therefore, the Total Resource Cost will be as above (2.86 million USD).
Cost / kWh saved	It is estimated that the cost of each KWh saved will be 0.019 JOD/KWh (0.027 USD/KWh).
Reduction of subsidies	<p>Replacement of incandescent lamps with efficient CFL lamps will reduce the power demand by 36 MW based on the assumption of 80% of the replaced Lamps will contribute in the peak demand. This will lead to annual cost saving of 6.8 million JOD (9.8 million USD).</p> <p>It is estimated that the reduction in CO2 emission will be 82 ktCO2.</p> <p>The distribution companies sell electricity to the final residential consumer especially for low consumption category at prices lower than the actual cost of KWh. If this measure is implemented, it will lead to a significant reduction in subsidies given to those consumers.</p>
Source of funding	Not determined (need financing)
Financial instruments	The government of Jordan has exempted all energy efficiency and renewable energy equipment including CFLs from custom duties and sales tax in 2008 which led to a significant reduction in their market prices for the end user.
Awareness	The implementation of this measure will be accompanied with an effective awareness campaign addressing both consumers and CFL suppliers. This campaign will take advantage of the available media and different means of information dissemination.
Monitoring and quantification of impact	Energy Research Program (NERC) will work closely with MEMR and other stakeholders to monitor & evaluate the success of this initiative implementation. It is known that the evaluation process is not an easy task. But with the support of distribution companies NERC can do the necessary measurements before and after implementation of the measure, and also make the necessary comparison between electrical bills before & after implementation for some selected samples in different regions in Jordan.