



# Energy Efficiency Lighting in Residential, Commercial, Industrial and Outdoor sectors of Pakistan

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# Background: Energy Scenario of Pakistan

Pakistan Population	180 Million
Total Power Generation Capacity 2012	23,538 MW
Power Generation in (2011-2012)	98,664 GWh <sup>[1]</sup>
Estimate Demand Forecast for Electricity generation in 2020	306,797 GWh
Estimate Demand Forecast for Electricity generation in 2035	889,583 GWh <sup>[2]</sup>
Current Energy shortfall of Electricity in system	5000 MW
Load shedding	12 Hours in urban areas and 18 to 20 Hours Rural area per day
Share of electricity consumption in the country: <sup>[3]</sup>	
Domestic/ Residential sector	42.15 %
Industrial sector	23.92 %
Agricultural sector	14.03 %

Sources:

[1] State of Industry report, NEPRA, 2012

[2] Electricity Demand Forecast report, Planning Power NTDC, 2011

[3] National Economic & Environmental Development Study, 2011

# Current Policies

The proposed NAMA activities supported by various policies of Government of Pakistan are mentioned below:

## ■ **National Climate Change Policy, 2012**

- Conserve energy and improve energy efficiency
- Enact/ enforce energy conservation legislation and audit standards
- Improve energy efficiency in building by:
  - Standardizing building
  - Legislating / creating incentives for retrofitting lighting
  - Maximum use of natural light
  - Better insulation and use of energy efficient lights and other appliances

# Current Policies cont...

## ■ National Energy Conservation Policy, 2007

- Encourage and facilitate energy audits in commercial buildings
- Encourage adoption of energy efficiency in the domestic sector
- Encourage use of energy efficient equipment, fixtures and appliances in the buildings

## ■ Renewable Energy Policy, 2006

- Deploying RE at a minimum of 9700 MW by 2030
- Provide additional power supplies to help meet increasing national demand.
- Custom duty and Sales tax are exempted from all Renewable Energy equipment, spares and machinery

# NAMA Objectives

- The proposed NAMA will lead to:
  - Transition to Energy Efficient lighting technologies in all sectors
  - Create a strong base for EE lighting market in Pakistan
  - Enable a supportive environment for private investment
  - Trigger future EE lighting projects/ programmes
  - Reduce GHG emissions of approx 1.97 million tons of CO<sub>2</sub> annually
  - Annual Energy savings in the country:
    - 5.5% of total national electricity consumption
    - 35% of electricity consumption from the lighting sector
- Replicate EE standardization in future for other Energy consuming appliances

# Key Elements of the Proposed NAMA

- Development of a National Efficient Lighting Strategy, national energy codes, standards for appliances, labeling, energy reporting, and development / enforcement of Minimum Energy Performance Standards (MEPS).
- Development of a Measurable, Reportable and Verifiable (MRV) system for GHG emission reductions resulting from deployment of energy efficient lighting projects / programs.
- Design and deployment of an integrated waste management system for destruction of ICLs and recycling of CFL bulbs.

# Key Elements of the Proposed NAMA cont...

- Establishment of a Revolving Loan Fund (RLF) and its linkage with the established Energy Conservation Fund of ENERCON for development of energy efficient lighting projects / programs.
- Public awareness campaign on transition to energy efficient lighting sectors will be launched across the country to educate people from all walks of life regarding the benefits of adopting timely actions relating to energy conservation and efficient.

# Financial Mechanism

- Possible options for financing future EE lighting projects/ programmes:
  - International Donors from Developed Countries
  - Local / Foreign Banks
  - Clean Technologies Fund (CTF)
  - Revolving Loan Fund (RLF)
  - Public Sector Development Program (PSDP) funds of the GoP
  - Green Climate Fund (GCF)

# Revolving Loan Fund (RLF)

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- US\$ 3 Million included as RLF in NAMA proposal
- ECF established in ENERCON in 2002
- Financing option for private sector
- RLF will be implemented in two phases:
  - Public, Industrial and Commercial sector
  - Residential sector
- The NAMA will develop guidelines for disbursing funds to households.
- RLF will help ESCO models to encourage private sector and household participation by addressing the high cost of transitioning to EE Lighting.
- MEPS and other actions are intended to increase demand for EE lighting

# Expected Outcomes

- Pathway to low carbon economic growth
- Energy Conservation of 2000-3000 MW to be achieved in 3-5 years.
- Significantly reduced emission of GHG approx. 1.97 MtCO<sub>2</sub>e annually
- Pakistan in meeting its international Climate Change obligations under the UNFCCC
- Annual savings of \$4 billion by year 2019, corresponding to 3% of the GDP
- Lower electricity bills for consumers over the 7-8 year expected lamp lifetime

# Expected Outcomes cont...

- Jobs created in distribution and installation of EE lighting equipments
- Pakistan supply and demand deficit in the electricity sector will be reduced in short period of time
- Transfer and deployment of most appropriate and energy efficient technologies

# Support Requested

No	Project Component	Grant Amount (US\$)
1.	Development of National Energy Efficient Lighting Strategy, MEPS	500,000/-
	Development of national energy codes, standards for components/ appliances, labeling and energy reporting	500,000/-
2.	Development of MRV system for lighting sector (residential, commercial, industry and outdoor)	500,000/-
3.	Destruction mechanism of ICLs in sustainable manner	500,000/-
4.	Mechanism for Recycling of CFL bulbs	500,000/-
5.	Collection mechanism with district authorities and distribution companies	1,000,000/-
6.	Awareness Campaigns Electronically, Seminars/ Workshops	150,000/-
7.	Establishment of Revolving loan Fund (RLF)	3,000,000/-
8.	Project Management Cost	350,000/-
	Total Project Costs	7,000,000/-

**Government will facilitate implementation of NAMA activities and supports proposed actions in the form of Tax exemptions on RE and EE equipment.**

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# Thanks