

## Facts and Figures

Population with access to mains electricity 10%

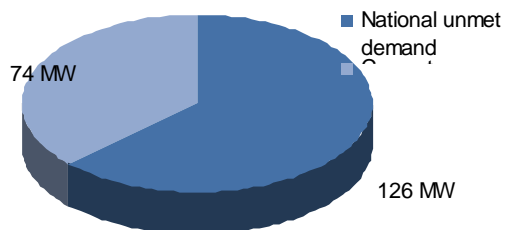
Estimated national demand 200 MW

Current generation capacity 74 MW

Estimated national hydro capacity 1,200 MW

## National Demand vs Current Generation Capacity

Estimated National Demand = 200 MW



Government of Sierra Leone

# ENERGY

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## Sector Overview

- The energy sector is the pivot in the development of any nation and access to reliable and affordable modern energy is an important catalyst for achieving high economic growth and achieving the MDGs .
- A significant amount of progress has already been made since the end of the civil war in 2002:
  - Bumbuna Phase I is complete and will deliver 50 MW of power to Freetown.
  - Rehabilitation of the T&D network has begun.
  - Focus has been placed on utilising the country's abundant renewable sources of energy, including hydro, solar and biomass.
  - The private sector has moved away from vertical Integration.
  - The enabling environment to attract private participation remains high in government's agenda .

### Challenges currently facing the sector

- Cost of producing and distributing electricity remain high.
- Majority of the population do not have access to reliable electricity.
- T&D networks are old and/or damaged.
- Limited capacity to implement and coordinate programmes

## Sector Priorities

- Attain energy independence by exploiting the nation's full potential for power generation.
- Implement a national Energy Policy.
- Significantly increase electricity supply nationwide.
- Develop national capacity to implement and coordinate energy sector initiatives.
- Invest in Research and Development for efficient and sustainable energy production and supply.



## Sector Strategies 2009 - 2011

### Improving Thermal Power Generation

- Exploit commercially viable and affordable electricity generation in the medium to long term through low cost and sustainable power generation.
- Install new Power Generation Plants in both urban/rural areas.
- Make strategic exits from the existing high cost IPP arrangements.

TOTAL COST (FUNDING GAP): \$70 million

### Exploiting Hydro Potential

- Commence the operation of Bumbuna Phase I.
- Develop mini hydro dams nationwide.
- Construct Bumbuna Phase II to increase power generation from 50MW to 1200MWs.
- Generate large investment for these projects through PPPs and/or BOTs.

TOTAL COST (FUNDING GAP): \$100 million

### Exploring other Renewable Energy Potential :

- Explore development of Biomass, estimated at 656,000 tonnes of crop wastes per year, with a total annual energy potential of 2,700 GWH or 308 MW.
- Explore development of solar power, currently estimated at 1,460-1,800 GWH per annum.

TOTAL COST (FUNDING GAP): \$50 million

### Upgrading and expanding the National Transmission and Distribution Network

- Overhaul and upgrade the entire network in Freetown to increase transmission and distribution capacity from 15 MW to around 100 MW.
- Install new transmission and distribution lines for rural electrification.

TOTAL COST (FUNDING GAP): \$50 million

### Promoting Private Sector Investments and Public Private Partnerships agreements.

- Improve Energy Sector Policy and Governance.
- Develop and implement an Independent Power Producers Framework.
- Develop and Implement a Public Private Partnership Framework.
- Streamline existing institutional arrangements.
- Promote access to regional power sector initiatives.

TOTAL COST (FUNDING GAP): \$20 million

## Opportunities for investment and Public-Private Partnerships

### 1. Bumbuna Phase II

- Bumbuna Phase II will increase total installed power to 400 MW with an average annual production of 1,560 GWH thus meeting the ever growing demand for electricity from Freetown and the surrounding areas.
- Construction is expected to take 6 years with total investment cost of € 520 million comprising.
- Civil works, site installations and engineer's site supervision (€ 220 million).
- Electromechanical equipment and hydraulic steel structures (€ 185 million).
- Transmission line extension from Bumbuna to Yiben (€ 55 million).
- Inception works (access roads, site investigations, camp and design) (€ 40 million).
- Population resettlement and environmental investment (€ 20 million).

### 2. Transmission and distribution networks

- Extension of the Western Area Network to allow Bumbuna's power to be delivered to many residential and commercial areas of Freetown (estimated cost of €3.5m).

### 3. Mini-hydros

- Further to Bumbuna, there are many more potential hydro sites around the country between 2 and 10 MW in size.
- Projects include Kono (10 MW) and Moyamba (10 MW).

### 4. Biofuels

- The large amount of agricultural activity in Sierra Leone offers ample scope for Biofuel production.
- This would provide an environmentally friendly energy supply using waste products from the agriculture industry.
- Addax Bioenergy will develop a sugar cane/ ethanol plant in Makeni.

### 5. Solar Street-lighting

- There is currently very little operational street lighting in SL.
- Solar street lighting offers a reliable mechanism for providing street lighting thus making streets safer.
- InterGroup Africa are already in discussions for a BOT in Freetown.

### 6 . Oil Palm Plantations – Gambia/ Matru Oil Palm Estate

- More than 5000 hectares located in Bonthe District , Southern Province, 54 miles from Bo.
- Several other available plantations.
- Palm Kernel Oil (PKO).
- Other ancillary products (soap, CPO etc).