Sudanese Electricity Distribution Company

Republic of Sudan

Place, Date

26/11/2013
Rural Electrification & Renewable Energy in Sudan
Contents:

- General Information about Sudan.
- Electricity Sector.
- Rural Electrification Project.
Sudan is one of the largest countries in Africa (1.89 M Sq. Km).

Sudan is bordered by seven countries which are Egypt, Libya, Chad, Central Africa, South of Sudan, Ethiopia, Eritrea in addition to the Red Sea in the east.
General Information about Sudan

- this large area enjoys a variety of climates, from desert region at north, to tropical at south.
- A favorite environment creates integrated investment of agricultural activities from production to processing industries.
Sudan is a relatively sparsely populated country. The total population now (2013) about 33.2 million inhabitants, 34% live in urban areas while 66% live in rural areas.

Population density is 17 per kilometer square. Sudan is rich in land, water resources, and solar radiation.
Energy Situation

According to last evaluation of energy resource consumes at 2012, Sudan meets approximately 64% of its energy needs of biomass. While oil supply 32 % and the remaining 4% are produced from hydro, the heavy dependence on biomass threatens the health and future of domestic forests.
The supply of electric energy in Sudan started in Khartoum the capital of Sudan in the year 1908.

From 2010 the Ministry of Water Resources and Electricity became the responsible state body for the electric power sector in Sudan.

Under the ministry there are 5 companies which are Hydro Generation Company, Thermal Generation, Transmission, Distribution, and Marowe Dam Company.
Electric Power Sector Structure in Sudan

- Sudanese Thermal Generation Company
- Sudanese Hydro Generation Company
- Sudanese Electricity Transmission Company
- Sudanese Electricity Distribution Company
- Marowe Dam Company

THE MINISTER

- Public and Private Companies
- Technical Organ for Electricity Regulation and Control
- Dams implementation unit
- Kinana &Rahad Implementation Corporation
- Consultant Council
- Ministerial Council
- Undersecretary

- General Directorate for Generating Electricity using Nuclear, Renewable, and Alternative Energy
- General Directorate for International Relations
- General Directorate for Investment, Finance and Contracts
- General Directorate for Policies, Planning and Projects

26/11/2013
Electric Power Sector in Sudan

Electricity Generation-2013

Total Installed Capacity = 2,533 MW

- Hydro: 56.8%
- Steam: 17.5%
- Combined Cycle: 16.1%
- Diesel: 7.2%
- Gas Turbine: 2.3%
Electric Power Sector in Sudan

Electricity Transmission

The Sudan electricity generation system comprises approximately 8,560 km of high voltage transmission lines.

In addition, fourteen isolated centres are served by thermal generating plants and local distribution networks.
Electric Power Sector in Sudan

Electricity Consumption by Sectors – 2012

- Domestic: 51%
- Industrial: 16%
- Agriculture: 5%
- Commerce: 15%
- Governmental: 13%
- Domestic: 51%
Electric Power Sector in Sudan

Number of Consumers by Sectors – 2012

Khartoum

- Domestic
- Industrial
- Commercial
- Agricultural
- Governmental
Electric Power Sector in Sudan

Number of Consumers by Sectors – 2012

States

- Domestic
- Industrial
- Commercial
- Agricultural
- Governmental

- 89%
- 8%
- 1%
- 2%
- 0%
Population and Access to Electricity in Sudan:

- 34% of the population live in urban areas, 55% of them have access to electricity.
- While 66% live in rural areas, 29% of them have access to electricity.
Institutional and regulatory framework
General Information:-

- Current Rural Electrification rate is 26%
- SHS project
- Target: 1.1 million solar home system (SHS)
- Period: 2012-2031
- Beneficiaries: 5.5 million, 16% of population
Average daily solar irradiation: 5.8 – 7.2 kWh/m²
Rural electrification SHS project

Development Impact

- Job creation: more than 10,000 (direct and indirect) in rural area.
- Created new business (after sale services)
- Thousand tons of CO$_2$ reduction.
- Saving thousand tons of kerosene and other petroleum products.
- Social and cultural development in rural areas.
## Rural electrification SHS project Plan

<table>
<thead>
<tr>
<th>Years</th>
<th>planned consumers</th>
<th>Total Budget</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Local component (SDG)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>installation</td>
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<tr>
<td>1st year</td>
<td>100</td>
<td>pilot project for proper sizing, and accurate specs.</td>
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<td>2nd Year</td>
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<td>3rd Year</td>
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<td>4th Year</td>
<td>58,000</td>
<td>11,600,000</td>
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<td>5th Year</td>
<td>72,000</td>
<td>14,400,000</td>
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<td>Total(2017-2021)</td>
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<td>50,000,000</td>
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<tr>
<td>Total(2022-2026)</td>
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<td>Total(2027-2031)</td>
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<td>Total Cost</td>
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<td>Total cost USD</td>
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<td>656,382,979</td>
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SOLAR ENERGY PROJECTS

- 10 MW Khartoum Photovoltaic Power Plant
- 5 MW Nyala Photovoltaic Power Plant
- 3 MW Al Fashir Photovoltaic Power Plant
- 2 MW Al Geniena Photovoltaic Power Plant
- 1 MW Al deain Photovoltaic Power Plant
Thank You for your Attention