



State of Rural Electrification Somalia

Mogadishu

25/11/2013



Ministère de l'Energie, chargé des
Ressources Naturelles (MERN),
République de Djibouti





INSTITUTION IN CHARGE OF RURAL ELECTRIFICATION

**Ministry of Public Work & Reconstruction,
Marine Transport, Ports and Energy**

Deputy Ministry

H.E Hon. Eng Nadifa Mohamed Osman



Federal Republic of Somalia



- Total population is approximately 12-15 Million
- Rural population is 5,582,448.7 million as of 2011
- Total land Area of 627,337 Km²
- 20% of rural Somalia is electrified
- 80% of rural Somalia is non electrified

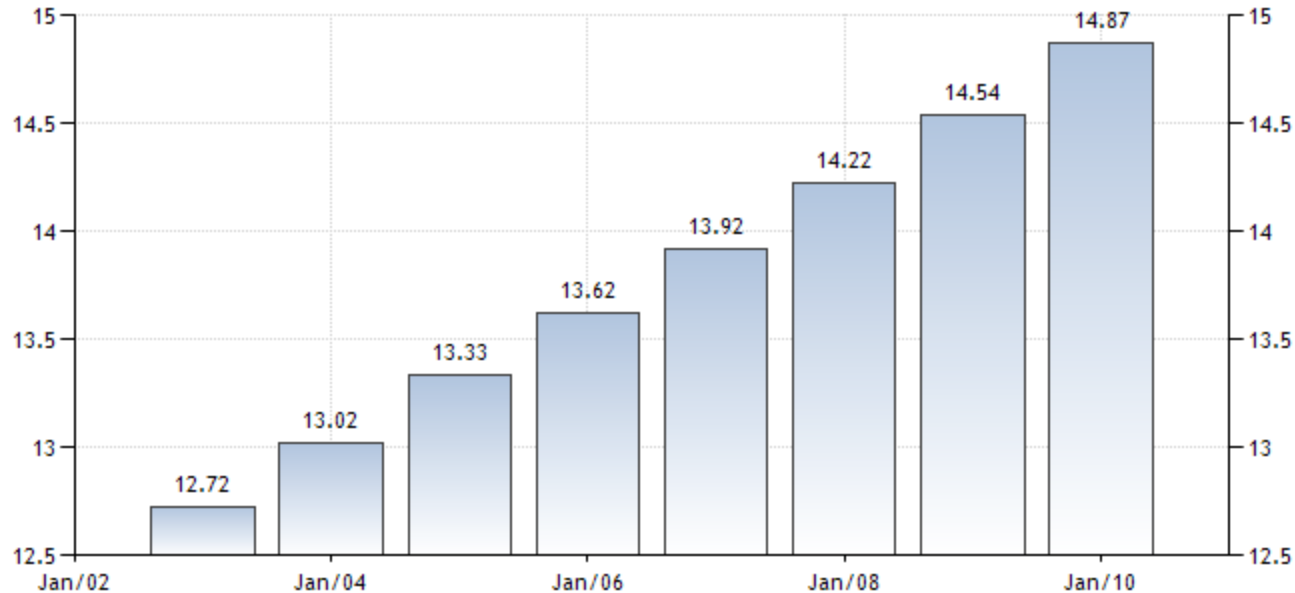


REGULATORY FRAMEWORK



- Electricity Supply Regulation 2013
- National Energy Policy 2013
- Renewable Energy Policy 2013
- Rural Electrification Policy 2013

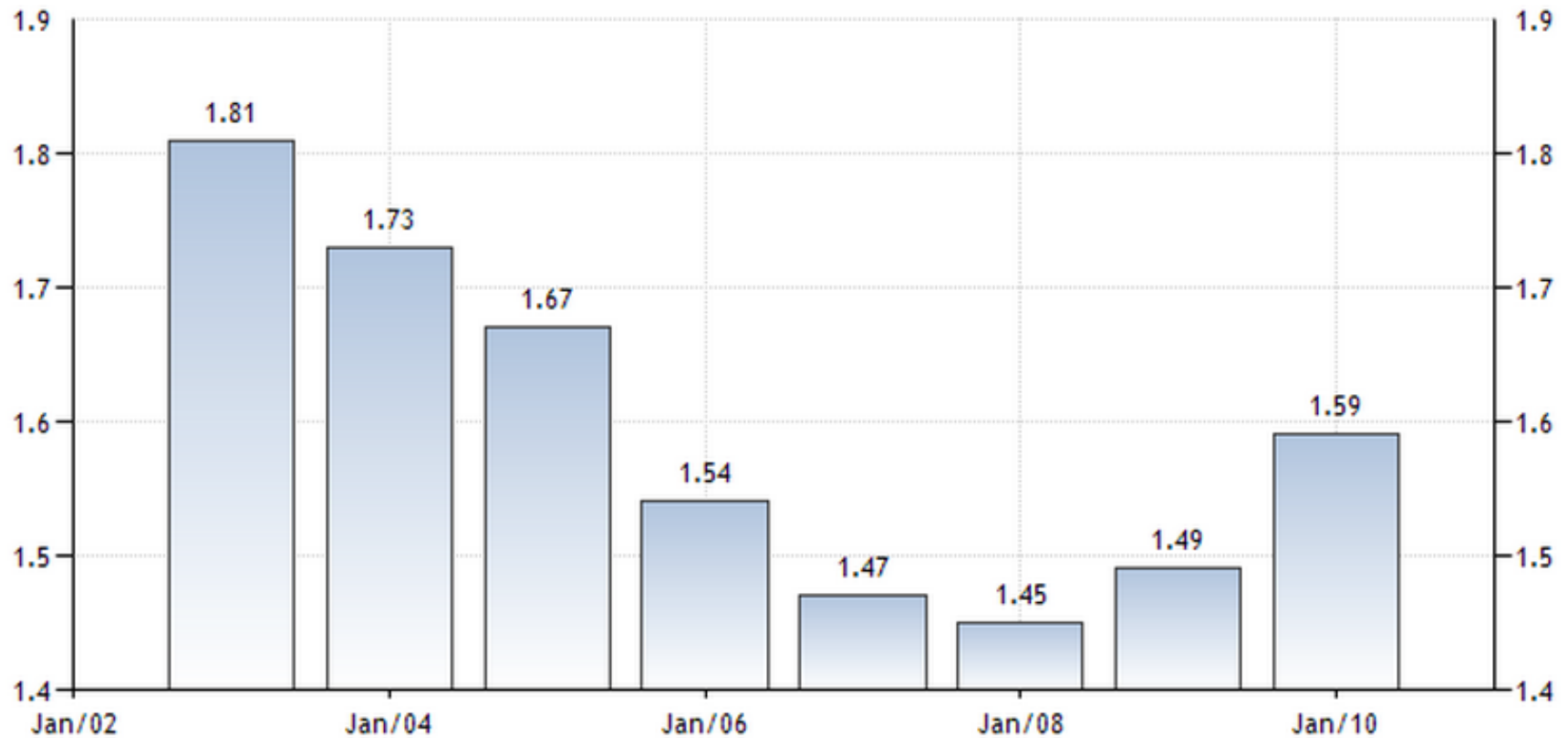
POPULATION DENSITY



The Population density (people per sq. km) in Somalia was last reported at 14.87 in 2010



RURAL POPULATION GROWTH (ANNUAL %) IN SOMALIA





FACTS AND FIGURES



	Previous	Last
Population density (people per sq. km) in Somalia	13.9	14.2
Population in largest city in Somalia	1100311.0	1220214.0
Population in the largest city (% of urban population) in Somalia	34.9	37.5
Population in urban agglomerations of more than 1 million in Somalia	1100311.0	1220214.0
Population in urban agglomerations of more than 1 million (% of total population) in Somalia	12.6	13.7
Rural population in Somalia	5582448.7	5663850.7
Rural population growth (annual %) in Somalia	1.5	1.5
Rural population (% of total population) in Somalia	63.9	63.5
Urban population growth (annual %) in Somalia	3.4	3.4
Urban population in Somalia	3151044.3	3258409.4

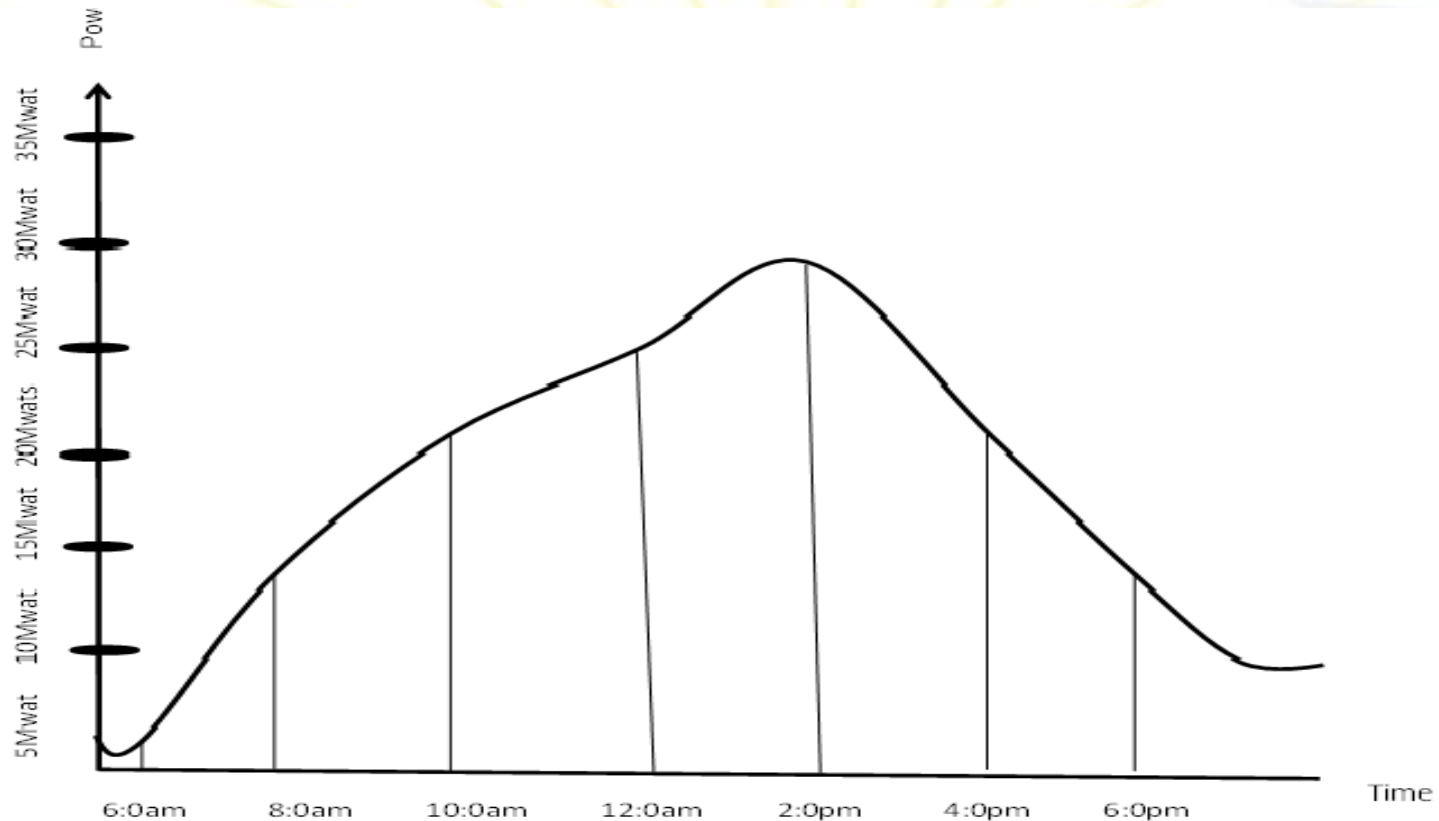


URBAN ELECTRIFICATION IN MOGADISHU (PRIVATLY OWNED)

<i>Company name</i>	<i>Total power estimated</i>	<i>No.Of sub-stations</i>
<i>Somali power</i>	<i>8—9Mwats</i>	<i>13 sub-stations</i>
<i>Somali Energy</i>	<i>7.2---7.8Mwat</i>	<i>8 sub-stations</i>
<i>Somali Electric</i>	<i>6---7Mwats</i>	<i>6 sub-stations</i>
<i>Mogadishu power</i>	<i>0.64-0.72Mwat</i>	<i>3 sub-stations</i>

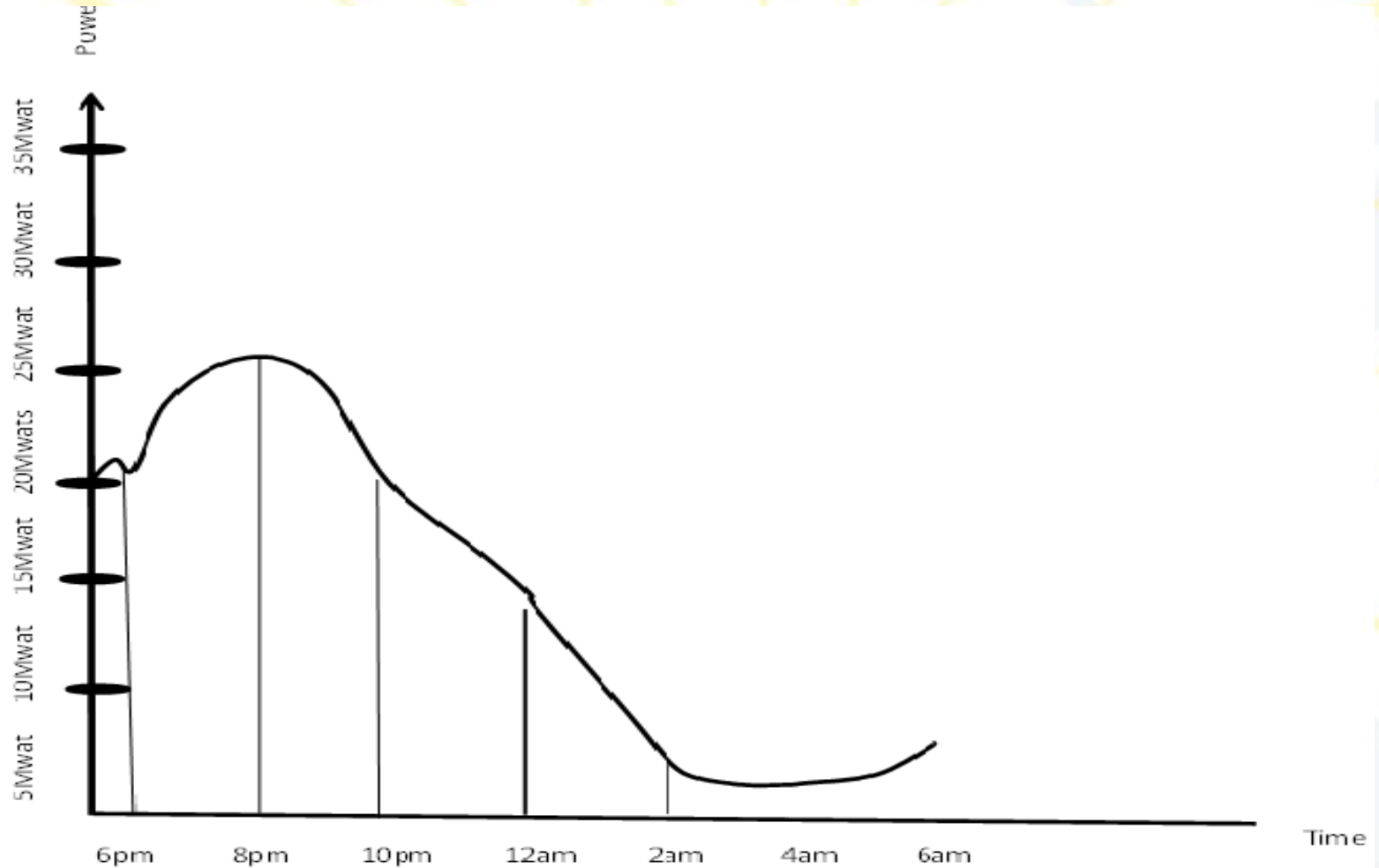
Company name	Total estimated power	No.Of sub-stations
Madina Electric	0.6---0.65Mwats	Only one station
Ramadan Electric	0.5Mwat	three stations
Boqol jirow Electric	0.5 Mwats	one station

DAILY LOAD CURVES



Source: Data from Ministry of Public Works

LOAD CURVES FOR NIGHT



RENEWABLE ENERGY POTENTIAL IN SOMALIA



WIND ENERGY



- wind speeds averages 6-10 m/sec
- 24 hours a day wind blow

SOLAR ENERGY



- Daily solar energy received on a horizontal surface 5-7 kWh/sq/day
- Yearly sunshine duration is between 2900 – 3100 hours/year (8-8.5 hours / day)
- Yearly sunshine average 27 ° C

HYDRO ENERGY



- Somalia has the longest coastline in Africa covering 3,300 KM
 - Which is the 37TH Longest coastline in the world
 - Two main rivers Jubba and Shabelle Rivers

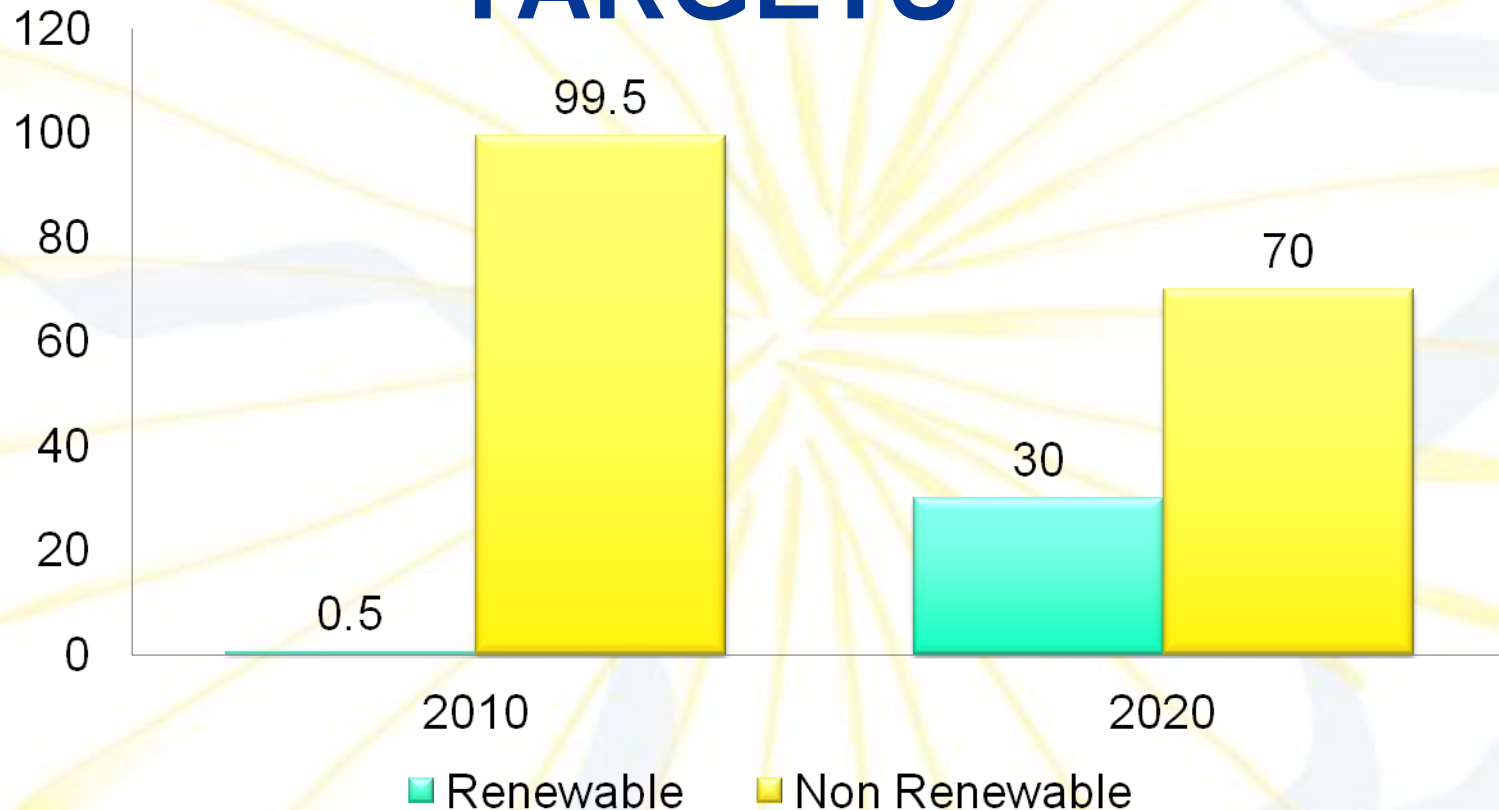
GEO THERMAL ENERGY



- Proven Natural Gas Reserves 5,663,000,000 m³
 - Ranked 89th in the world
- Date of Information 1 Jan 2010



SOMALIA RENEWABLE TARGETS



30% OF ALL ELECTRICITY COMING FROM RENEWABLE SOURCES BY 2020



OIL IN SOMALIA



Overall estimates onshore and offshore oil reserves for Somalia are 110 billion barrels of oil but yet to be explored.



COST OF ELECTRICITY US



Source	Cost per Kwh	Source
Coal Steam	\$0.036	EIA
Nuclear	\$0.024	EIA
Hydroelectric	\$0.092	EIA
Gas Turbine	\$0.049	EIA
Wind, Onshore	\$0.04 to \$0.15	NREL
Wind, Offshore	\$0.07 to \$0.20	NREL
Solar, Photovoltaic	\$0.15 to \$0.59	NREL
Solar, Concentrating	\$0.06 to \$0.30	NREL
Geothermal	\$0.04 to \$0.13	NREL

Data from the U.S. Energy Information Administration (EIA) and U.S. National Renewable Energy Laboratory (NREL).



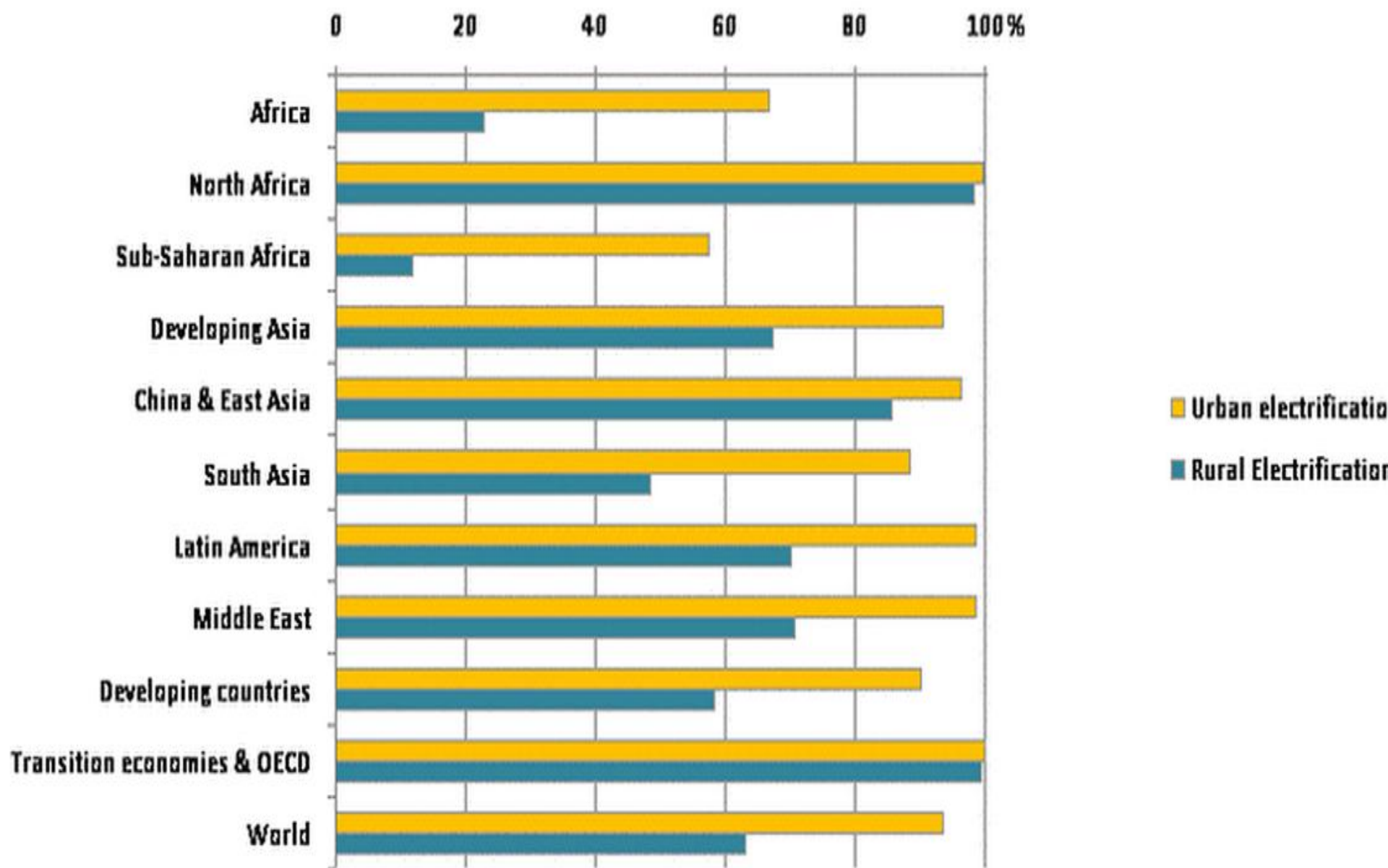
SOMALIA COST OF ELECTRICITY



Diesel Generators

- bulk consumers \$0.70-0.80 per kwh
- Ordinary customers \$1-1.2 per kwh

Urban vs. Rural Electrification rate 2008 %



Electrification rate %

