



**DEVELOPING
RENEWABLES**

Renewable Energy that benefits all

Country energy information Sierra Leone

September 2006

SIXTH FRAMEWORK PROGRAMME PRIORITY 3

Underpinning the economic potential and cohesion of a larger and more integrated EU

SPECIFIC SUPPORT ACTION

Project Acronym: RECIPES

Project full title: Renewable Energy in emerging and developing countries: Current situation, market Potential and recommendations for a win-win-win for EU industry, the Environment and local Socio-economic development

Contract number: 513733

Start date of contract: 1st January 2005

Introduction

The information in this report was gathered from publicly available sources (the source list is available at www.energyrecipes.org), like surveys, statistical data from the internet and books and other publications. The information consists of:

1. indicators and indices;
2. descriptions of the relevant energy items/subjects /themes.

Due to differences in availability of data per country the level of detail of these reports will differ.

For all the 114 developing and emerging countries of the INCO list a report like this is available. (see also www.energyrecipes.org for the countries) Except for the following 15 countries, where more detailed reports are available.

Argentina	China	Cameroon
Brazil	India	Ghana
Colombia	Indonesia	Niger
Mexico	Pacific	South-
Peru	Islands	Africa
	Thailand	Uganda

The RECIPES project

The RECIPES project aims to contribute to the implementation of renewable energy in emerging and developing countries. The RECIPES project is financed under the 6th Framework Programme for Research and Technological Development of the European Commission.

The main objective of the RECIPES project is to provide the European Commission and other stakeholders with pragmatic information and recommendations facilitating appropriate action to further the implementation of renewable energy in emerging and developing countries, taking into account:

- | The effects on the local socio-economic situation.
- | The competitive position of European renewable energy industry.
- | The impacts on the local and global environment.

Data collection on the situation and potential of renewable energy in emerging and developing countries is the core of the RECIPES project.

An identification of the RE market potential is carried out for 15 developing and emerging countries. Local experts gathered data for all of these countries. The results of these in-depth studies are extrapolated to 99 other developing and emerging countries for which data is gathered through desk research.

See the RECIPES website (www.energyrecipes.org) for relevant data collected and reports produced.

Environmental problems

Rapid population growth pressuring the environment; overharvesting of timber, expansion of cattle grazing, and slash-and-burn agriculture have resulted in deforestation and soil exhaustion; civil war depleting natural resources; overfishing

Environment - international agreements

Party to: Biodiversity, Climate Change, Desertification, Endangered Species, Law of the Sea, Marine Life Conservation, Ozone Layer Protection, Ship Pollution, Wetlands

signed, but not ratified: Environmental Modification

Energy situation

Approximately 80% of Sierra Leone's primary energy is derived from traditional biomass while the remaining 20% is supplied by crude oil and its by-products, namely kerosene, cooking gas and other petroleum products.

Sierra Leone is a net importer of energy. Total installed capacity for electricity is 126 MW (mostly oil-fired thermal plant). Only 5% of the total population has access to electricity.²⁷

Sierra Leone's Bumbuna hydroelectric project was nearly complete (85%) when civil war disrupted the construction. The government hopes to restart construction in early 2003, but funding is an issue. The cost of completing the project is estimated at \$40.2 million, and the African Development Bank (AfDB) has pledged to provide \$8.7 million. Sources for the remaining \$31.5 million have yet to be identified.²

Energy sector organisation

The Ministry of Energy and Power has oversight responsibility over the energy sector. The National Power Authority (NPA), which was established in 1982 by an Act of Parliament, is responsible for the distribution of electricity throughout the country. Like many of their counterparts in the sub-region, the energy sector of Sierra Leone has been undergoing reforms. The reform process initiated in the power sector is geared towards creating an enabling environment to attract private sector investments in the electricity sector.²⁷

Renewable energy potential

Sierra Leone is endowed with biomass and solar potential. Apart from forest

resources, crop and animal waste generated by the predominant agricultural sector offer rich source of biomass energy.²⁷

Renewable energy

No information is available on Sierra Leone's RE policy.

	Sierra Leone	Unit
General		
Population (2005)	6017643	
Country area	71740	km ²
Total density of population (people/km ²)	84.000	capita/km ²
Growth of people % /year	2.220	%
Land use arable (%)	6.980	%
Land use perm crops (%)	0.890	%
Percentage of total people living in cities	38.100	%
HDI (2002)	0.273	
Social		
Illiteracy	31.400	%
Year of estimation	1995	
Corruption (CPI 2003) 0=high 10=low	2.200	
GDP in ppp mostly \$ 2004 est	3.34	billion
Economic		
Income /capita \$ mostly 2004	600	
Variability of income/capita GINI index (2004)	62.900	
Population below poverty line	68.000	%
Year of estimation	1989	
Total External Debt in % GDP (2004 est.)	0.000	%
Inflation rate (consumer prices) (%)	1.000	%
Year of estimation	2002	
Growth of economy	6.000	%
Year of estimation	2004	
EDI energy development index	0.000	
Energy development		
Percentage of people connected to the grid (electricity)	0.000	%
Traditional fuel consumption (% of total energy requirements 2002) . Estimated consumption of fuel wood, charcoal, bagasse (sugar cane waste) and animal and vegetable wastes.	92.000	
Oil consumption	6500.000	bbl/day
Fossil fuel consumption		
Year of estimation	2001	
Coal consumption (Million Short Tons)	0.000	millions short tonnes/year
Natural gas consumption, year 2001 if not mentioned others		
Nuclear power production (Billion Kilowatthours) 2003	0.000	billion kWh/year
Hydro electricity capacity (2003)	0.004	million kilowatts
Renewable energy situation		
Geothermal, Solar, Wind, Wood and Waste Electricity Installed capacity (2003)	0.000	million kilowatts

RE biomass production of primary energy from combustible Renewables and Wast TJ/Year 2002	0.000	
RE energy electricity consumption (2003)	0.000	billion kWh/year
Total Primary Energy Supply 2000	0.000	billion kWh/year
Share of total renewables in % of TPES 2000	0.000	%
Share of renewables excluding combustible renewables and waste in % of TPES 2000	0.000	%
TPES 2003	0.000	billion kWh/year
Share of Renewables in TPES % (2003)	0.000	%
Hydro (2003)	0.000	%
Geothermal, Solar, Wind, Tide (2003)	0.000	%
Combustible Renewables and Waste (2003)	0.000	%
Total kWh per capita	0.000	

Energy consumption for various sectors

Industry	0.000	%
Transportation	0.000	%
Agriculture	0.000	%
Commercial and public services	0.000	%
Residential	0.000	%
Other purposes	0.000	%
Total oil production	0.000	bbl/day

Energy production

Total coal production (Million Short Tons)	0.000	millions short tonnes/year
Total natural gas production		
Total Electricity Production GWh	0.000	GWh

Electricity

Electricity production from coal %	0.000	%
Electricity production from oil %	0.000	%
Electricity production from gas %	0.000	%
Electricity production from biomass %	0.000	%
Electricity production from waste %	0.000	%
Electricity production from nuclear %	0.000	%
Electricity production from hydro %	0.000	%
Electricity production from geothermal %	0.000	%
Electricity production from solar thermal and PV %	0.000	%
Electricity production from other sources %	0.000	%
Electricity consumption GWh (2003)	242.000	GWh
Total final electricity consumption GWh (2002)	0.000	GWh
Electricity used by Industry % (2002)	0.000	%
Electricity used by Transport % (2002)	0.000	%
Electricity used by Agriculture % (2002)	0.000	%
Electricity used by Commerce and Public Services % (2002)	0.000	%
Electricity used by Residential % (2002)	0.000	%
Electricity used by Other Non-Specified % (2002)	0.000	%
Electricity used by Non-Energy Use % (2002)	0.000	%