



**DEVELOPING  
RENEWABLES**

Renewable Energy that benefits all

## Country energy information Mali

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](http://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](http://www.energyrecipes.org) for the countries) Except for the following 15 countries, where more detailed reports are available.

Argentina

Brazil

Colombia

Mexico

Peru

China

India

Indonesia

Pacific

Islands

Thailand

Cameroon

Ghana

Niger

South-

Africa

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](http://www.energyrecipes.org)) for relevant data collected and reports produced.

## Environmental problems

Deforestation; soil erosion; desertification; inadequate supplies of potable water; poaching

## Environment - international agreements

*Party to:* Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Ozone Layer Protection, Wetlands

*signed, but not ratified:* none of the selected agreements

## Energy situation

The energy sector is mostly based on traditional fuels, with a low per capita consumption. 90% of energy consumed comes from the unsustainable use of fuel-wood. Biomass producing surface has been disappearing, leading to soil erosion and desertification, and making this the predominant environmental issue linked to energy consumption. Current efforts focus on promoting promising PV applications whilst continuing development of other technologies such as solar dryers, micro hydro, wind power, small scale gasifiers and biogas digesters. Hydro constitutes a large part of total produced electricity, although only 10% of the population has access to electricity.<sup>7</sup>

Mali has a hydroelectric potential of some 1,050 GWh, of which almost 5% was being exploited before the reforms. Electricity generation in Mali was for a long time dominated by hydroelectricity, which represented 57% of EDM's total generation (385.92 GWh) in 1997 and 54% in 1998. By 2002, thermal generation had redressed the balance somewhat, despite the coming on-stream of Manantali hydropower plant.<sup>6</sup>

The objectives of the Malian Government's policy in the electricity sector, are to ensure electricity and water supply for the vast majority of the country's population, under the best possible conditions in terms of quality and cost. The Malian Government is of the opinion that the achievement of these objectives should be based on improvement of the efficiency, privatisation of the electricity industry and execution of a rural electrification programme.<sup>6</sup>

## Energy sector organisation

The National Water and Energy Directorate (DNHE) is Mali's primary governmental institution for

implementing national energy policy, regulating the energy sector and the planning of large energy and water projects. Energy Mali (EDM) is in charge of production of electricity and its distribution.<sup>7</sup>

In 2000, EDM was privatized and the government took a 40% share in the company.<sup>6</sup>

## Renewable energy potential

High degrees of solar irradiation suggests potential in the PV sector, which is only for a small part being exploited as of now. Also, even though electricity is mostly produced from hydro, there is still a huge potential in hydro power present (of some 1,050 GWh).<sup>6</sup>

## Renewable energy

Mali plans to produce 15% of its total energy in the form of renewable energy by 2020.<sup>4</sup>

The Action Plan for Renewable Energy Promotion in Mali was established to achieve the renewable energy target of increasing the share of renewables in TPES from less than 1% in 2002 to 15% in 2020.<sup>13</sup>

Their energy policy is defined by 5 major objectives:

- improving access to energy especially from renewables
- the rational use of existing energy sources
- the efficient use of existing natural resources to produce energy
- sustainable use of biomass resources through the conservation and protection of forests
- strengthening government capacity and streamlining administrative procedures within the energy sector

	Mali	Unit
<b>General</b>		
Population (2005)	12291529	
Country area	1240198	km <sup>2</sup>
Total density of population (people/km <sup>2</sup> )	10.000	capita/km <sup>2</sup>
Growth of people % /year	2.740	%
Land use arable (%)	3.820	%
Land use perm crops (%)	0.030	%
Percentage of total people living in cities	31.600	%
HDI (2002)	0.326	
<b>Social</b>		
Illiteracy	46.400	%
Year of estimation	2003	
Corruption (CPI 2003) 0=high 10=low	3.000	
GDP in ppp mostly \$ 2004 est	11	billion
<b>Economic</b>		
Income /capita \$ mostly 2004	900	
Variability of income/capita GINI index (2004)	50.500	
Population below poverty line	64.000	%
Year of estimation	2001	
Inflation rate (consumer prices) (%)	4.500	%
Year of estimation	2002	
Growth of economy	4.000	%
Year of estimation	2004	
Traditional fuel consumption (% of total energy requirements 2002) . Estimated consumption of fuel wood, charcoal, bagasse	88.300	

(sugar cane waste) and animal and vegetable wastes.

### Fossil fuel consumption

Oil consumption 4000.000 bbl/day

### Fossil fuel consumption

Year of estimation	2001	
Coal consumption (Million Short Tons)	0.000	millions short tonnes/year
Nuclear power production (Billion Kilowatthours) 2003	0.000	billion kWh/year
Hydro electricity capacity (2003)	0.150	million kilowatts

### Renewable energy situation

Geothermal, Solar, Wind, Wood and Waste Electricity Installed capacity (2003)	0.000	million kilowatts
RE energy electricity consumption (2003)	0.000	billion kWh/year
Total coal production (Million Short Tons)	0.000	millions short tonnes/year
Electricity consumption GWh (2003)	763.000	GWh