



Country energy information Benin

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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

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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 Islands	South-Africa
Peru	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

Inadequate supplies of potable water; poaching threatens wildlife populations; deforestation; desertification

Environment - international agreements

Party to: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Ozone Layer Protection, Ship Pollution, Wetlands
signed, but not ratified: none of the selected agreements

Energy situation

Benin has no domestic production of natural gas, coal or oil. All petroleum is imported and residential energy use consists mainly of traditional biomass.¹³

Benin's total annual electricity consumption in 1997 equaled 275 GWh, representing per capita consumption of 48.8 kWh/year. The country's total electrical installed capacity in 1997 was 15 MW. In 1997, 270 GWh of electricity was imported to meet national demands. Energy consumption is expected to increase by 20%/year during the next 10 years, with electricity consumption rising by 6 per cent/year.¹⁴

Hydro capacity in operation is generated at the 66.4 MW multipurpose Nangbeto development, which began operation in 1987, and 100 MW of hydro capacity is installed at the Adjaralla project on the border of Benin and Togo.¹⁴

Energy sector organisation

Two organisations are responsible for electricity generation and supply in Benin. These are the Societe Beninoise d'Electricite et d'Eau (SBEE), which controls the vast majority of generating capacity in Benin, and Communaute Electrique du Benin (CEB), located in Togo. CEB is a Benin-Togo joint venture for the purpose of purchasing electrical energy from the Volta River Authority hydro facilities in Ghana. The CEB operates a transmission link between the Akossombo dam (Ghana), via Lome (Togo) to the Benin capital Cotonou in order to transport this energy.¹⁴

Plans call for SBEE to separate its water and electricity operations into two separate companies. As part of the privatization, Benin plans to create an agency for rural electrification that would bring power to areas where it was not economically feasible to extend SBEE's grid.²

Renewable energy potential

Based on 1996 estimates, the theoretical hydropower potential of Benin is estimated to be 1676 GWh/year.¹⁴

Renewable energy

No information is available on Benin's Renewable Energy Policy.

	Benin	Unit
General		
Population (2005)	7460025	
Country area	112622	km ²
Total density of population (people/km ²)	66.000	capita/km ²
Growth of people % /year	2.820	%
Land use arable (%)	18.080	%
Land use perm crops (%)	2.400	%
Percentage of total people living in cities	43.800	%
HDI (2002)	0.421	
Social		
Illiteracy	40.900	%
Year of estimation	2002	
Corruption (CPI 2003) 0=high 10=low	0.000	
GDP in ppp mostly \$ 2004 est	8.34	billion
Economic		
Income /capita \$ mostly 2004	1200	
Variability of income/capita GINI index (2004)	0.000	
Population below poverty line	33.000	%
Year of estimation	2001	
Total External Debt in % GDP (2004 est.)	0.000	%
Inflation rate (consumer prices) (%)	2.800	%
Year of estimation	2004	
Growth of economy	5.000	%
Year of estimation	2004	
EDI energy development index	0.205	
Energy development		
Percentage of people connected to the grid (electricity)	24.800	%
Traditional fuel consumption (% of total energy requirements 2002) . Estimated consumption of fuel wood, charcoal, bagasse (sugar cane waste) and animal and vegetable wastes.	81.900	
Oil consumption	11500.000	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)	0.067	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	64739.000	
RE energy electricity consumption (2003)	0.000	billion kWh/year
Total Primary Energy Supply 2000	27.910	billion kWh/year
Share of total renewables in % of TPES 2000	75.500	%
Share of renewables excluding combustible renewables and waste in % of TPES 2000	0.000	%
TPES 2003	26.700	billion kWh/year
Share of Renewables in TPES % (2003)	68.600	%
Hydro (2003)	0.000	%
Geothermal, Solar, Wind, Tide (2003)	0.000	%
Combustible Renewables and Waste (2003)	100.000	%
Total kWh per capita	3124.000	

Energy consumption for various sectors

Industry	4.000	%
Transportation	21.000	%
Agriculture	0.000	%
Commercial and public services	12.000	%
Residential	63.000	%
Other purposes	0.000	%
Total oil production	700.000	bbl/day

Energy production

Total coal production (Million Short Tons)	0.000	millions short tonnes/year
Total natural gas production		
Total Electricity Production GWh	63.000	GWh

Electricity

Electricity production from coal %	0.000	%
Electricity production from oil %	97.000	%
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 %	3.000	%
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)	538.000	GWh
Total final electricity consumption GWh (2002)	498.000	GWh
Electricity used by Industry % (2002)	21.000	%
Electricity used by Transport % (2002)	0.000	%
Electricity used by Agriculture % (2002)	0.000	%
Electricity used by Commerce and Public Services % (2002)	31.000	%
Electricity used by Residential % (2002)	47.000	%
Electricity used by Other Non-Specified % (2002)	0.000	%
Electricity used by Non-Energy Use % (2002)	0.000	%