

WORLD SMALL HYDROPOWER DEVELOPMENT REPORT 2013

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COTE D'IVOIRE



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1 Africa

1.5 Western Africa

1.5.3 Côte d'Ivoire

A.A. Esan, UNIDO Regional Centre for Small Hydro Power in Africa, Nigeria; Lara Esser, International Center on Small Hydro Power

Key Facts

Population	21,952,093 ¹
Area	322,462 km ²
Climate	Four major climate zones, i.e. equatorial, semi-damp tropical, dry tropical and wet tropical/mountain climate. ² Two air masses are influential: the Monsoon, a moist equatorial air mass, and the Harmattan, a dry tropical air mass coming along with a drying wind, with a saturation of 65-90%.
Topography	Mostly flat to undulating plains in the south; plateaus in the center, hills or hill chains with a height of 200-500m in the North, mountains in northwest. ^{1 2}
Rain pattern	Varying rainfall regimes exist, uni-modal and bi-modal. The annual mean rainfall lies between a minimum of 900 mm and a maximum of 2,250 mm. ³

Electricity sector overview

The Electricity access rate is 47.3 per cent.⁴ Table 1 shows energy sector objectives from the Poverty Strategy Paper (2009).⁵

Table 1

Energy sector objectives in Côte d'Ivoire (Percentage)

Indicator	2008	2013	2015
Proportion of electrified localities	31	43	50
Proportion of households with access to electricity	17	35	55
Proportion of share of new and renewable energies in the national energy consumption (excluding biomass)	0	3	5

Source: Poverty Strategy Paper⁵

Electricity is exported from Côte d'Ivoire to Benin, Burkina Faso, Ghana, Mali and Togo.⁶ Additional capacity development in the thermal and hydropower sector is planned.

Agence Nationale de Régulation (ANARE) is the National Regulatory Agency of the electricity sector. The Ivorian Electricity Company Compagnie Ivoirienne d'Electricité

(CIE) has been granted concession and exploits electricity generation, conveyance and distribution facilities.¹

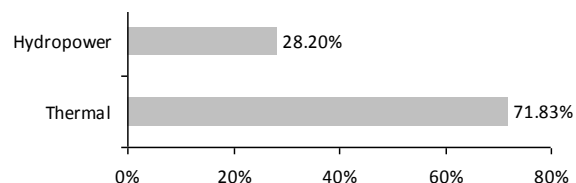


Figure 1 Electricity generation in Côte d'Ivoire

Sources: BIOVEA⁷ and Ministry of Mines, Petroleum and Energy¹⁰

Note: Data from 2010.

Some 28 per cent of the electricity is derived from hydropower in Cote d'Ivoire.⁹

Table 2

Installed hydropower capacities in Côte d'Ivoire

Name	Installed capacity (MW)	Year constructed
Ayamé	20	1959
Ayamé	30	1961
Kossou	174	1972
Taabo	210	1979
Buyo	165	1980
Grah	5	1983
Total	604	

Source: German Agency for Technical Cooperation¹ and Koffi⁹

The economic potential of hydropower is 12 TWh. Hydropower sites with a potential of more than 1,300 MW were assessed by Électricité de France in the 1980s. Four large hydropower sites ranging from 5 MW to 290 MW have yet to be built, as well as several small hydropower sites with potentials up to 5 MW each.¹

Small hydropower sector overview and potential

There is no specific classification for hydropower plants (small, micro, mini).¹⁰ There is one existing small hydropower plant, Grah (5 MW), which was put into service in 1983 (figure 2).¹⁰ Three small hydropower schemes are planned in the long term: Drou (1.6 MW, 2021), Aboissobia (5 MW, 2016) and Agnéby (0.3 MW, 2016).

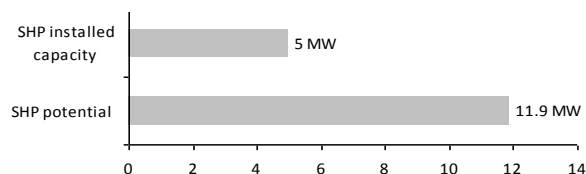


Figure 2 Small hydropower capacities in Cote d'Ivoire

Renewable energy policy

Société d'Opération Ivoirienne d'Électricité supervises the provision of facilities with focus on the implementation of the rural electrification programme.

Sustainable energy through developing renewable and other new energy sources is one of the areas of activities of the 2011-2030 Strategic Development Plan of the Republic of Côte d'Ivoire.⁸ The private sector should play an important role through investments. An assessment of national renewable energy potential is also planned. Furthermore, an increase in production capacities, both thermal and hydropower, is planned to match increasing electricity demand.

Barriers to small hydropower development

With the support of UNIDO and ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), Côte d'Ivoire plans to concentrate on the following activities to remove barriers preventing small hydropower development in the country:¹⁰

- Update old small hydropower studies.
- Establish a regulatory framework for the purchase of electricity.
- Adapt regulations on the use of waterways to avoid conflict between agriculture, fishing and electricity consumption.
- Provide training session for mapping.

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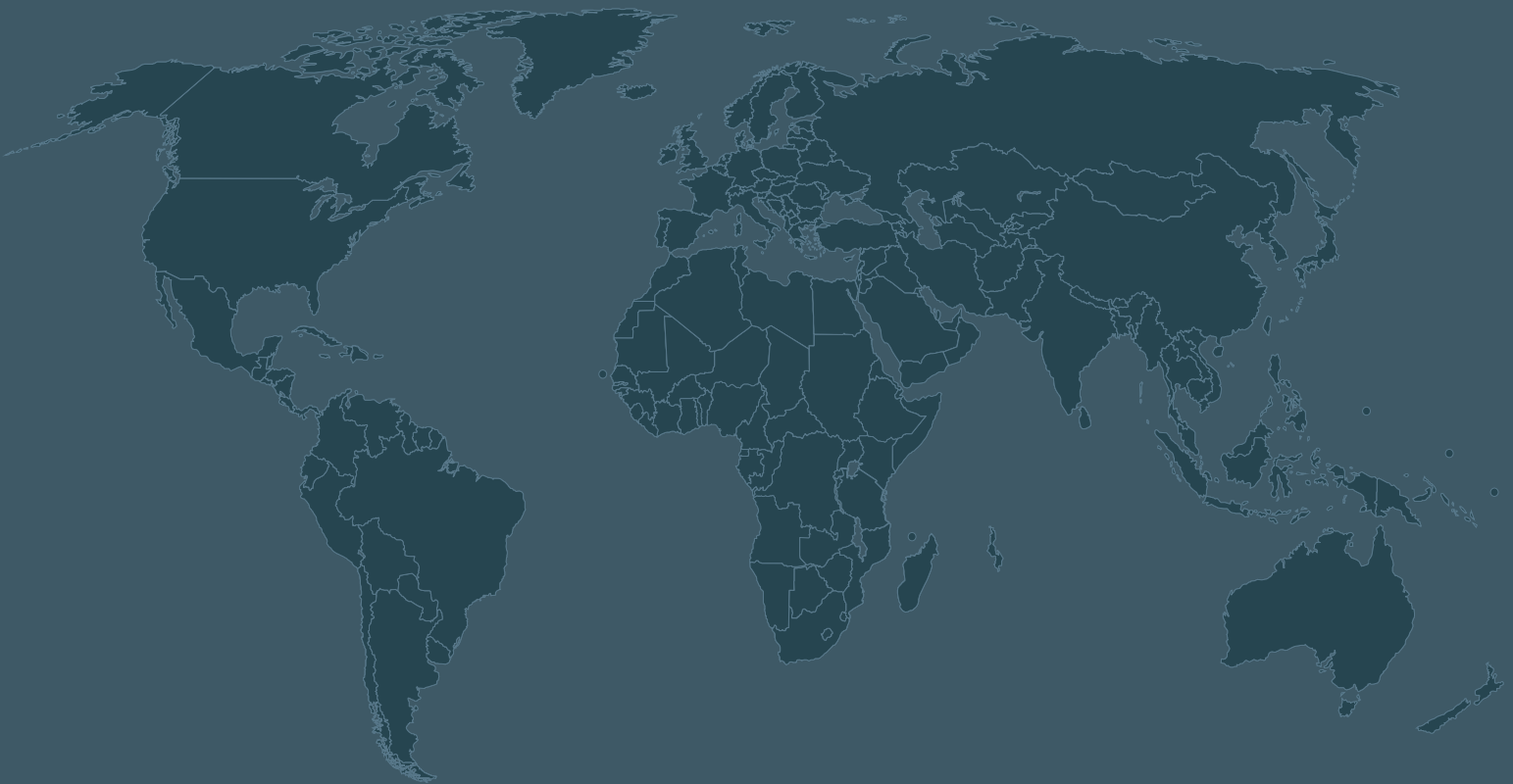
United Nations
Industrial Development Organization (UNIDO)
Wagramer Straße 2, 1220 Vienna
Austria

renewables@unido.org



International Center
on Small Hydro Power (ICSHP)
136 Nanshan Road, 310002 Hangzhou, Zhejiang
Province, China

report@icshp.org



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