



RENEWABLE ENERGY IN AFRICA:

An opportunity in a time of crisis

Côte d'Ivoire (Ivory Coast)

State of electricity

Côte d'Ivoire's electricity supply is powered mainly by natural gas, followed by hydroelectric power which sits at 40% of the installed capacity. The gas power supply is owned by three independent power producers (IPPs) – Ciprel, Azito and Aggreko. The state owns the hydroelectric power plants. Plans to double hydro capacity include five new dams which are planned for the 2020s.¹ The country is a net exporter to the West African Power Pool (15% of production) and this trend is expected to continue.^{2,5} Government is exploring the exploitation of natural gas and crude oil and has signed 27 power-sharing agreements, including for ultra-deep, offshore fields which have prompted seismic surveys and exploration drilling activities along the 400 km of coastline.

Of the population 59.9% have access to electricity, but this includes only 31.5% of the rural population and 88% of the urban population. There are 9.7 million people without access to electricity.

Relevant policy

The government's aim is to achieve installed capacity of 4 GW in 2020 and 6 GW in 2030 in terms of its energy strategy, and is targeting 150 MW of solar by 2020. The National Development Plan 2016-2020 has no targeted procurement policies. The "electricity for all" strategy aims to connect a million homes by 2020 through repairs and extension of the transmission grid, and by subsidising customer connections.

In July 2018, the Côte d'Ivoire government and the IFC released a renewable energy roadmap to achieve its targeted 42% renewable energy share in the country's energy mix by 2030.³ According to Alzbeta Klein, IFC's Director and the Head of Climate Business this target can create a USD 9 billion investment opportunity for the country by 2030.⁴ The only renewables incentive policy to date is a reduced rate of VAT for solar panels.

Potential and ambition

Electricity-generation projects currently in the pipeline suggest that the share of renewables will not increase in the short term. The government's target of doubling the country's total energy production to 4,000 MW by 2020 can be achieved by the announced gas, coal and hydroelectric projects alone.⁵ The new renewable energy sources currently scheduled to be brought on-grid by 2022 are solar and biomass projects, accounting for less than 2% of the energy mix combined.⁶ The country's annual potential for solar generation is estimated to be 10,325 TWh. Less than 5% of the estimated USD 796 million electrification costs to 2020 are to be spent on renewables in mini-grid projects.

¹ <http://global-climatescope.org/results/CI>

² <https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2018/05/8-1.pdf>

³ <https://ifcextapps.ifc.org/ifcext/pressroom/ifcpressroom.nsf/0/2834AC0D5F115BDE852582C1002A1FFD?OpenDocument>

⁴ <https://en.financialafrik.com/2018/07/10/ivory-coast-9-billion-investment-in-renewable-energy-by-2030/>

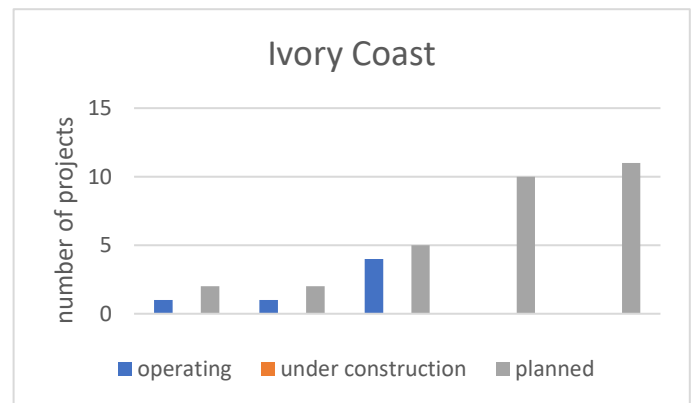
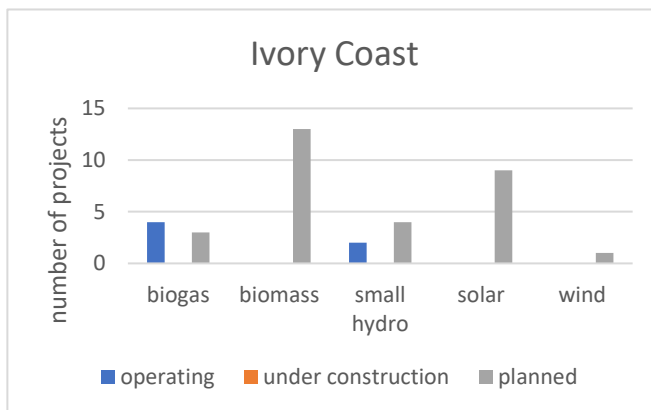
⁵ <https://oxfordbusinessgroup.com/interview/responsible-growth-thierry-tanoh-minister-petroleum-energy-and-renewable-energy-development>

⁶ http://www.ren21.net/wp-content/uploads/2017/06/17-8399_GSR_2017_Full_Report_0621_Opt.pdf



Renewable energy projects

Utility-scale solar plants under development include a 25 MW facility in the Northern Province of Korhogo, and a 50 MW plant which the Chinese-Canadian manufacturer, Canadian Solar, hopes to build in the region of Poro under the Build Own Operate (BOO) business model. The state reportedly intends to install around 50 solar-powered mini-grids of around 3 kW each with EU funding. Planned biomass projects include a 46 MW palm waste power plant and tenders for two biomass projects – a 25 MW cotton project in Boundiali and a 20 MW-capacity cacao plant in Gagnoa. A further 305 MW worth of biomass projects is planned for tender.⁷ The graphs below show the scale of renewable energy in operation, under construction and being planned, reflecting also the dominance of biomass projects.



Distribution of renewable energy projects in Côte d'Ivoire by technology and scale, by stage of development ('operating', 'under construction', or 'planned'). Source: Authors' estimates from African Energy Live database, September 2019.

Off-grid

The off-grid market is reportedly growing with PEGAfrica and ZECI (Zola EDF Côte d'Ivoire - a joint venture between EDF and Off-Grid Electric) agreeing in 2016 to enter the market and sell solar home systems via mobile money payments. PEGAfrica reports experiencing significant demand for the SunKing products it sells. In 2017, the off-grid solar kit provider, Lumos, moved into the country. Their Global's kits, which cost about USD 600, include a solar panel linked to a battery that supports power sockets, a mobile phone adapter and LED light bulbs.⁸

In June 2018, the AfDB approved a proposal to help ZECI, with a USD 28 million loan and credit guarantee for a catalyst loan facility. The project pilots a small loans facility for 100,000 rural households to purchase pay-as-you-go solar home systems by 2020. This operation would be the first large-scale local currency financing structure for the off-grid renewable energy sector in Africa. ZECI's business model consists of selling solar kits that meet international quality standards, under lease-purchase agreements for a three-year period, for which instalments are paid with mobile money. Benefits include participants developing a credit history, access to financing and ownership of assets.⁹

⁷ <https://www.lexology.com/library/detail.aspx?g=552a0e29-d1eb-494a-8f81-277905ce5740>

⁸ https://ewn.co.za/2018/02/20/off-grid-power-pioneers-pour-into-west-africa?fbclid=IwAR3poBR1SRyle4gsi_CxjnguLall1Va-blaVtZ1cEhg44rOzBIOGijWor5k

⁹ https://www.afdb.org/en/news-and-events/cote-divoire-african-development-bank-to-help-mobilize-over-cfaf-15-billion-to-finance-pay-as-you-go-solar-home-systems-18244/?fbclid=IwAR25ZPayTjbd-OqMtD9KCaqdXsikVeMcr_jA7HvGJm36SMP0cqPzolk_lwo#.WyPc1Ro9iIQ.linkedin



For low-density areas off-grid solutions energy storage prices remain prohibitive.

Visit the report webpage at <https://350africa.org/renewable-energy-report>.