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BANQUE D'INVESTISSEMENT ET DE DEVELOPPEMENT DE LA CEDEAO  
ECOWAS BANK FOR INVESTMENT AND DEVELOPMENT  
BANCO DE INVESTIMENTO E DE DESENVOLVIMENTO DA CEDEAO

## CTI PFAN West Africa Forum for Clean Energy Financing (WAFCEF)

### Project Summaries

#### Overview

The West Africa Forum for Clean Energy Financing (WAFCEF) will be held on October 8 as part of the Renewable Energy Investment Week program of events organized by the ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE), the U.S. Agency for International Development (USAID) and the Climate Technology Initiative – Private Financing Advisory Network (CTI-PFAN), scheduled for October 8-10 in Accra, Ghana. Ten business plans have been selected for presentation at WAFCEF, in the form of brief (15-minute) investment pitches. The investment and financial communities in West Africa and internationally are invited to participate in WAFCEF to establish contact with the promoters of these exciting projects, which will contribute to the economic development of West Africa through the utilization of sustainable energy technologies.

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#### **Wave<sub>2</sub>O™: Clean Water from Ocean Waves (P1)**

**Location:** Cape Verde and Senegal

**Description of project/business:** The Wave<sub>2</sub>O system provides reverse-osmosis desalination powered solely by wave energy. The project involves the installation of the first system Wave<sub>2</sub>O system in Cape Verde. The system will have a capacity of 4,000 m<sup>3</sup>/day, and will supply more than 47,000 people with clean fresh water, eliminating 5,400 metric tons of CO<sub>2</sub>e/year. Further projects are being developed for implementation in other ECOWAS and sub-Saharan African countries.

**Investment requirement:** The total project cost is \$19.8 million, consisting of \$10 million in debt and \$9.8 million in equity, beginning with a \$2-million convertible note to fund a site-specific feasibility study.

**Projected investor returns:** The project will generate \$4.5 million in revenue during its first year of operation, resulting in a seven-year payback period and an IRR above 16% for investors in the notes.

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## **11-MW Small Hydro Power Project (P8)**

**Location:** Sierra Leone

**Description of project/business:** Development and operation of the Moyamba 11-MW small hydro power project on the Gbangba River in the Southern Province of Sierra Leone for captive off-take by three bulk users, including a London-listed mining company, a nearby university and the local community through the local power utility.

**Investment requirement:** Total project capital costs are \$40.1 million. The owner's equity investment is \$500,000, with \$30 million of additional equity sought from investors. After allowing for re-investment of capital in the amount of \$1.2 million, the balance to be raised as debt will be \$8.4 million.

**Projected investor returns:** The project has a break-even period of five to eight years, with a ROI of 15.2% annually and 380% over 25 years based on EBITDA of \$266 million over a 25-year project lifetime. The projected IRR is 19.5% on a projected net cash flow of over \$6 million per year.

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## **Lighting Liberia (P14)**

**Location:** Liberia

**Description of project/business:** Expansion of an existing business for the import and distribution of solar LED lighting kits and cell phone chargers to rural off-grid areas in Liberia. The project plans to distribute over 202,000 kits over the next five years, reaching over 1 million Liberians.

**Investment requirement:** A total of \$1,050,000 is sought: \$450,000 in long-term debt alongside a revolving line of credit of \$600,000 for the purchase of inventory. The long-term loan will be used in 2014-2015 for upfront costs of expansion, and will offer an 8% interest rate with a one-year grace period, in addition to a floating interest rate calculated as a 0.5% to 2% share of the annual gross sales in years 2015-2018. The revolving line of credit of \$600,000 will be repaid

with principal and accrued interest calculated at 8% per annum, within 12 months of the advance, out of the proceeds from selling the solar home systems and solar lanterns.

**Projected investor returns:** Over 12% IRR amortized over five years.

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## **Agricultural Production and Processing by Solar Power (P16)**

**Countries:** Mali

**Description of project/business:** Installation and introduction of solar-PV powered processing and storage technologies to establish temperature-controlled drying and storage facilities for mango, potato and okra, in order to increase the value/marketability of regionally produced cash crops.

**Investment requirement:** An investment of \$1.37 million is needed in the form of debt and equity. The preferred investment structure would be a loan of \$0.52 million, repayable within three years, as well as an equity contribution of \$0.54 million, with the remaining project cost covered by self-financing working capital and an additional contribution by the developers.

**Projected investor returns:** IRRs on investor equity have been estimated at 61% for the first five years. Loans will be reimbursed in full after year 3, with a suggested interest rate of 10%. Substantial positive cash flows are also expected in order to be able to cover annuities right from year one. Assumptions have taken account of a rate of inflation of 3% a year.

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## **AzuriWA (P21)**

**Location:** ECOWAS Regional

**Description of project/business:** Expansion of an existing solar light distribution business into West Africa using an innovative pay-as-you-go payment model based on proprietary software and hardware. The project targets cumulative sales of one million in the ECOWAS region, reaching over five million people within five years.

**Investment requirement:** Investment of \$6.6 million is sought, including subordinated debt of \$600,000, repayable at a 50% premium to the issued amount, together with a \$6-million revolving loan facility. The revolving senior loan facility will be secured with cash flows from sales of Azuri's pay-as-you-go scratch cards, with an ample "cushion" or "overcollateralization" of total card revenues in excess of amounts necessary to pay interest and principal under the loan, and the added protection of a "first-loss" risk borne by the \$600,000 "high-yield" mezzanine note holders.

**Projected investor returns:** ROI of over 20% and cash return of double the initial investment over four years.

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### **Lojas Sta Claro (LSC) (P33)**

**Location:** Guinea-Bissau

**Description of project/business:** Creation of a retail business to distribute small-scale solar PV systems for household and small business applications in the Bafatá region of Guinea-Bissau, using a mobile phone payment platform to facilitate payment collection and a specially equipped vehicle to serve as a mobile store. The venture builds on the developer's experience in the area since 2009.

**Investment requirement:** The total investment required for LSC is \$910,000, of which \$340,000 is being sought from outside investors and lenders in debt and equity, while the remaining \$570,000 will be provided by TESE and its donors.

LSC seeks equity in the amount of \$140,000 and a five-year loan in the amount of \$200,000, to complement a grant that is being sought from two donor agencies, the Portuguese International Cooperation Institute (Instituto Camões) and the Calouste Gulbenkian Foundation (FCG).

**Projected investor returns:** The projected ROI for the investor is 18%.

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### **Scaling Distribution of Clean Cooking Technology Through a Partnership for a Cleaner Western Africa (P47)**

**Countries:** Nigeria and Ghana, with expanded distribution to Togo, Benin, Cameroon, Western DRC, Ivory Coast, Liberia, Mali, and Senegal

**Description of project/business:** Scale-up of an existing manufacturer of clean energy cook stoves, through a joint-venture partnership with a well-known local distributor of kitchenware, and the establishment of a local production facility in Nigeria. The JV projects sales of 350,000 cook stoves, reaching over 1.7 million people in Nigeria and Ghana in two years.

**Investment requirement:** Investment in establishing the JV, its operations and distribution network will total \$6.2 million, of which the JV will provide \$2.75 million from revenue and carbon financing funds. It will receive \$0.45 million from Shell Foundation, and is seeking additional investment of \$3 million in the form of a revolving working capital facility and term debt. The JV partners are open to equity or quasi-equity proposals as well.

**Projected investor returns:** Return on investment is 14-20% after five years.

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## **Sun Light Pay-As-You-Go, Solar Technology in Nigeria (P52)**

**Country:** Nigeria

**Description of project/business:** Scale-up of an existing business for the distribution of solar lighting kits to rural, off-grid BOP communities in Nigeria, using a hire-purchase business model, facilitated by mobile phone payments and SMS technology. The distribution network is supported by microfinance institutions, local co-operatives and community groups.

**Investment requirement:** The projects needs seed capital of \$150,000 and \$2 million in form of debt and equity or a combination of instruments. The funds will be used to purchase container loads of kits for shipment to Nigeria.

**Projected investor returns:** A \$2.15 million investment will yield the following returns: at year end 2015, \$3.3 million (53% simple ROI); and year end 2016, \$12.2 million (466% simple ROI).

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## **Cook Stove and Ethanol Bio-refinery Plant Scale-up in Nigeria (P55)**

**Country:** Nigeria

**Description of project/business:** This project entails the spin-off of a successful second-generation bio-ethanol production (using proprietary and patented technology) and cook stove manufacturer into a separate company, in order for it to achieve scale as a stand-alone business. Existing production will be increased from 10,000 liters/day (l/d) to about 100,000 l/d for distribution through a unique, existing and expanding network of distribution centers and individual distributors to service rural and peri-urban Nigeria.

**Investment requirement:** Green Energy and Biofuels Limited (GEB) is seeking equity and debt investments of \$17.1 million (out of total investment of \$26.1 million). SMEFunds will contribute \$9 million worth of assets to the company, including intellectual property and key personnel. Equity investment of \$1.4 million and debt investment of \$15.7 million are needed to scale up production facilities.

**Projected investor returns:** The project will yield a total financial return of \$20.87 million in Profit after Tax (PAT) within a five-year period, with an IRR of 16% for a five-year payback period.

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## **Production and Commercialization of Biomass (P64)**

**Country:** Senegal

**Description of project/business:** Scale-up of an existing production facility for the production and distribution of bio-charcoal from charcoal residue and other biomass to establish a wholesale distribution operation.

**Investment requirement:** The investment required is \$925,000, of which \$425,000 is equity for equipment acquisition, while the balance will be a loan of \$500,000, repayable in ten years for working capital (inventory of feedstock, expenses, etc.).

**Projected investor returns:** Payback period on the investment is 10 years. The project expects to generate a total cash flow of \$981,558, and the NPV based on a simulated interest rate to 8% is \$175,194, with an IRR of 13.08%.