GHANA SEforALL NEWS

GHANA SEforALL SECRETARIAT

GHANA'S SEforALL ACTION AGENDA SEEKS TO:

- Ensure Universal Access to Modern Energy Services
- Increase the Share of Renewable Energy in the National Energy Mix
- Increase the National Rate of Improvement in Energy Efficiency

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PROGRESS ON HIGH IMPACT PRIORITY AREAS

ENSURE UNIVERSAL ACCESS TO MODERN ENERGY SERVICES

* **Universal Access to Electricity**

The People's Green Energy Project

The German Development Cooperation in Ghana is implementing a three-year project, the People's Green Energy (PGE) Project, as part of a global project to improve access to modern energy services and to promote alternative and sustainable technologies using renewable energy and energy efficiency technologies. The project was commissioned by Federal Ministry for Economic Cooperation and Development (BMZ) and is central to the objectives of the German development policy with Africa. The project concept is based on the Marshall Plan which focuses on mobilising private and civic resources for decentralised energy solutions with which a fast and effective supply can be achieved.

Objective

The overall objective of the project is to improve the conditions for supplying rural regions in Ghana with affordable and decentralised renewable energy with the participation of citizens and companies.

Approach

The project has three main components.

Component 1: Develop and introduce training programmes on renewable energy technologies

The project will develop and introduce training programmes on selected renewable energy technologies relevant to the project, such as solar PV powered irrigation systems, in order to

promote and further develop local capacities for these technologies.

The training programmes under Component 1 seek to:

* enhance the skills of existing solar PV installers in the design and installation of solar PV powered water pumping and irrigation systems,
* train users of solar PV irrigation system (SPVIS) and other renewable energy systems in the operation and maintenance of the systems,
* provide training courses on financing renewable energy systems for employees of financial institutions, and
* provide complementary training to farmers and employees of Small and Medium Enterprises (SMEs) and cooperatives to strengthen their agricultural skills and business.

The training programmes will be implemented in collaboration with renewable energy- and agricultural- training centers.

Component 2: Access to decentralised renewable energy systems for enterprises, cooperatives and social institutions

Cooperatives and SMEs will receive technical and financial support for the planning and purchase of solar PV systems for irrigation, cooling, processing agricultural products and for other income generating activities. Similarly, social institutions like schools and health facilities will receive technical and financial support to install solar PV systems to enhance their services. Beneficiary farmers and agricultural cooperatives would be supported through a Results-Based Financing (RBF) instrument. Grants of 15% to 30% of the equipment cost will be provided by the project (lower for individual farmers and enterprises, higher for agricultural cooperatives).

In addition, the People's Green Energy Project will support the development of the Pay-As-You-Go (PAYG) business model to promote solar PV solutions for productive uses by women groups or cooperatives, especially, in cooperation with the Netherlands Development Organisation (SNV).

Component 3: Promote investment and improve the framework conditions in decentralised renewable energy systems

Under Component 3 of the PGE project, interested institutions in rural communities who consume high electricity will be offered technical advisory services to implement renewable energy projects to reduce their energy expenditure and strengthen their competitiveness. The advisory support would include information on mobilisation of financing by banks and crowd funding companies, and facilitation of access to suitable service providers or suppliers. The identification of potential beneficiary institutions and the projects will be done in collaboration with agricultural associations and the regional offices of the Association of Ghana Industries (AGI).

Another key activity under this component is the development of a licensing scheme for suppliers and installers of solar PV irrigation and or water pumping systems. This activity will be led by the Energy Commission.

Key Expected Outcomes

* 125 skilled workers (including 40 women) will receive advanced training in the design and installation of solar pumps as well as SPVIS.
* Three (3) training centers established to develop curricula and training materials for advanced training in the operation and maintenance of SPVIS.
* 100 business enterprises (15 run by women) procure and use SPVIS.
* 30 social institutions acquire and use renewable energy technologies.
* Licensing scheme established for solar pump suppliers and installers.
* Two (2) decentralised renewable energy investment projects undertaken by financiers.

The funds available to implement the PGE project is Euros. The project is expected to end in September 2022. The Ministry of Energy is the lead executing government agency for the project.

For more information about the project, contact Mr. Gideon Plange, Technical Advisor via gideon.plange@giz.de

INCREASE THE SHARE OF RENEWABLE ENERGY IN THE NATIONAL ENERGY MIX

BMBF Funded 400 kW Waste-to-Energy Project

The Federal Ministry of Education and Research (BMBF) is supporting the establishment of a 400 kW hybrid waste-to-energy power plant to be situated in Gyankobaa in the Atwima Nwabiagya district of the Ashanti Region. Under the €5.8 million environment and sanitation project, an in-depth research would be conducted to design a tailor-made municipal solid waste treatment for Ghana with the generation of electricity as a by-product.

The project is expected to boost agriculture by soil structure improvement through the production and sale of compost to farmers to reduce the use of mineral fertilizer. The project is also expected to create opportunity for small and medium scale German enterprises to extend their products and services in waste-to-energy in Ghana. Broadly, it would contribute to Ghana's Climate Change Mitigation Strategy as well as increase the contribution of renewable energy to the national electricity mix.

The project was commissioned in February this year in Accra and Kumasi with the support of the Minister of Environment, Science, Technology and Innovation; Professor Kwabena Frimpong-Boateng. The German Ambassador to Ghana, His Excellency Christoph Retzlaff, represented BMBF, the

project sponsor. In his remarks, the Ambassador affirmed his government's commitment to support developmental projects in Ghana. Honourable Frimpong-Boateng also expressed confidence that the waste-to-energy project will contribute to curbing the solid waste menace, which has bedevilled the nation, and enhance local human capacity in this field.

Experiences drawn from this four-year project would be useful in the design and construction of 10 additional waste-to-energy facilities in Ghana over the next two decades.

The West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL) is responsible for coordinating the project locally, while the University of Rostock, Germany is the overall coordinator who will report to the BMBF through its representative, the Project Management Agency Julich (PTJ).

(Source: https://wascal.org/bmbf-funded-project-on-400-kw-hybrid-waste-to-energy-power-plant-kicks-off-in-ghana/)

INCREASE THE NATIONAL RATE OF IMPROVEMENT IN ENERGY EFFICIENCY

Capacity for a Successful Implementation of the Renewable Energy Act (C-SIREA) Project - Energy Efficiency for Households and SMEs

GIZ implemented a multi-year technical assistance project called Capacity for a Successful Implementation of the Renewable Energy Act (C-SIREA) from 2013 to 2019 in collaboration with the Ministry of Energy Commission and various public and private organisations. Under this project, a participatory demand-driven approach was used to identify and define specific tasks of relevance for the successful implementation of specific provisions of the Renewable Energy Act, 2011 (Act 832) on large scale renewables, and net-metering and distributed generation.

The project engaged technical experts to build the capacity of personnel from key government institutions to better equip them to implement specific provisions of the Renewable Energy Act. Tools were developed and licenses purchased for special software for energy modelling and planning purposes.

Another key component of the C-SIREA Project was focused on energy efficiency for households and SMEs. Under this component the project sought to:

1. to train and certify 280 Energy Efficiency Advisors (EEAs), and
2. introduce no or least cost energy efficiency advice to 16,000 households and SMEs through door-to-door service and evaluate the savings realised by 10% of the beneficiaries.

The implementation of this component was led by the Energy Foundation in collaboration with the Ministry of Energy, Energy Commission and GIZ. The Brew Hammond Energy Centre at the Kwame Nkrumah University of Science and Technology (KNUST), and the Engineering Department of the Koforidua Technical University (KTU) supported in the project roll-out. It commenced in March 2017 and was completed by April 2019.

The project engaged the services of ESOKO (an APP development organisation) to develop an app-based energy audit form, and an online reporting and analysis platform for the rollouts in Kumasi and Koforidua. Specially designed brochures on energy efficiency in households and small and medium enterprises (SMEs) were disseminated in Accra, Kumasi and Koforidua, the beneficiary cities, to increase awareness on energy efficiency measures and benefits. A total of 7,000 plug-in automatic timer switches (including 1,000 from Energy Commission to support the project) were given out to households and SMEs to help reduce their electricity consumption. The names of the beneficiary communities are stated below.

* Accra: Adenta, Madina, East Legon and Dansoman (Sakaman, Roundabout and Last Stop)
* Kumasi KNUST, Gyinyase, Kotei, Ayeduase, Fayiese, Ayigya, Adukrom, Sepe Tinpon and Adenyase
* Koforidua: KTU, Bula, Enkaakyi, Anlo Town, Ada, Old Estate, Nsukwao, Kenkey Factory, Betom, Atekyem, Korle Nkwanta and Adweso

Project Outputs and Outcomes

* 280 students (comprising 43% females) from Universities and Polytechnics in Accra, Kumasi and Koforidua were trained and certified as Energy Efficiency Advisors (EEAs).

Training of EEAs in Kumasi (Photo credit: GIZ)

* 16,135 beneficiaries (8,493 households and 7,642 SMEs) were introduced to household energy efficiency best practices and energy audit.

An entrepreneur being introduced to energy efficiency best practices and energy audit (Photo credit: GIZ)

* Out of 3,519 beneficiaries (1,535 households and 1,984 SMEs) assessed, 87% of them implemented the energy efficiency measures proposed under the project and about 33% of these compliant beneficiaries reported 16% to 20% reduction in their electricity consumption within two to three months of the intervention.

* Inventories were conducted on actual electrical appliances used in homes and SMEs per consumption categories.
* Assessed the impact of conventional energy efficiency campaign strategies; the impact of various Government interventions like energy efficiency performance labelling for refrigerators and air conditioners; and usage of the Energy Commission Certified Appliance APP.
* Contributed to the development and implementation of energy sector policies and strategic decisions.

For more information about the project, contact Mr. Dennis Turkson, Technical Advisor via dennis.turkson@giz.de

PARTNER SPOTLIGHT

AGRICULTURAL, INDUSTRIAL AND COMMERCIAL PRODUCTS LIMITED, BAMANG, ASHANTI REGION

Agricultural, Industrial and Commercial Products Limited (AICPL) was established on 5 June, 1996. Headquartered in Accra, the operations of the company covers three key sectors: renewable energy, manufacturing and agriculture.

Specifically, AICPL is focusing on:

* the manufacture and export of charcoal briquettes and biochar,
* the manufacture of organic fertiliser and organic insecticide, and
* large-scale farming and agro-processing.

The charcoal briquette and biochar are being produced from sawn dust sourced from approved sawn mills and the Sokoban Wood Village in Kumasi, rice husk from mills within the Ashanti Region, coconut shell and palm kernel shells from local palm kernel oil processors. The organic fertiliser will be produced from biochar and cocoa pods sourced from cocoa farms. The insecticides would be produced from chemical extracts from the sawn dust.

Sawn dust being sun-dried

The production facilities of AICPL are located at Obgojo in Accra and Bamang near Bonwire in the Kwabre East District of the Ashanti Region.

Products and Current Production Capacity

The company's current production capacities are as follows:

* Charcoal briquettes - 5000 tonnes per annum
* Biochar - 10,000 tonnes per annum
* Wood vinegar - 50,000 tonnes per annum
* Fish feed: 1,500 tonnes per annum

The company has a project registered under the One-District-One-Factory Policy and is scheduled to start by September 2020 as part of its Phase Two activities. The project would be producing activated carbon.

Management and Staff Strength

AICPL has a staff strength of 52 comprising eight (8) management personnel and 44 in other categories. Approximately, 15% of the staff are women.

Some management staff of AICPL with a team from the Energy Commission

The staff strength is projected to reach 220 under Phase Two when shifts are run full-time and over the weekends. The current Managing Director of AICPL is Alhaji Adam Sulemana.

Target Consumers

The targeted consumer categories and market shares envisioned by AICPL for its products are listed below:

* Carbonised briquettes: Foreign Market (90%); Local Market (10%)
* Biochar: Foreign Market (90%); Local Market (10%)
* Wood Vinegar: Foreign Market (90%); Local Market (10%)
* Fish feed: West African Market (50%); Local Market (50%)

Impacts Being made by AICPL

* Bamang where the factory is located was virtually a "dead" town with no discernible economic activity. Since the commissioning of the factory, AICPL is assuming the role of an important provider of jobs to the hitherto jobless youth in the Kwabre East district. The multiplier effect of the incomes earned by the employed youth could be considerable.
* By using waste biomass such as sawn dust, coconut husk/shell, palm kernel shells, rice husk, etc., the activities of AICPL is contributing in no small way to environmental conservation and sustainability in the Ashanti Region and

beyond.

* Ultimately, it is envisaged that wide acceptance of the charcoal briquettes (sold under the brand name of "Lucky Star") will contribute to a reduction in deforestation in Ghana since consumers of traditional charcoal will have a perfect substitute sustainably produced from biomass waste, not from illegally felled trees. The product is currently being consumed mainly by restaurants and local chop bars and is gradually being adopted by domestic charcoal users.

Challenges Reported by AICPL

Major challenges confronting AICPL include:

* High cost of electricity and frequent disruptions in electricity supply which impacts negatively on its operations.
* Very poor access road to the company which is virtually un-motorable during the rainy season.
* Inadequate financial support for expansion.
* Low patronage of the charcoal briquette due to traditional charcoal being seen as cheaper option.

Recommendations made by the Entrepreneur

Government should support the efforts of companies like AICPL with the necessary financial support and appropriate legislation-backed incentives such as tax holidays, given the importance of the products (charcoal briquettes, biochar and wood vinegar) produced by the company. For instance, biochar is proven to contribute immensely to reduction in greenhouse gas emissions and global warming, reduction in soil nutrient leaching losses, sequestering of atmospheric carbon into the soil, increasing agricultural productivity, and reducing bioavailability of environmental contaminants.

Future Plans/Prospects

Phase Two of the project involves the production of activated carbon for use in sectors including mining, water treatment, pharmaceutical, Oil & Gas, etc. Presently, all activated carbon used in industries in Ghana are imported. Local production of activated carbon would greatly benefit such industries that rely on import.

AICPL is also working assiduously to begin its production of biochar, organic fertiliser and wood vinegar to diversify its revenue inflow.

AICPL has been approached by major institutions such as the Council for Scientific and Industrial Research Soil Research Institute and the International Water Management Institute (Ghana Office) regarding potential collaborations for mutual benefits. Discussions are ongoing in this regard.

Proposed Follow-up Actions

The SEforALL Secretariat would keep in touch with the company and help connect it to partners or experts who can help it to improve on its operations and market its products.

For more information about AICPL contact Alhaji Adam Sulemana, Managing Director via fsgrp@yahoo.com

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Link to the Ghana SEforALL Action Plan:
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