

PROJECT INFORMATION DOCUMENT (PID) APPRAISAL STAGE

Report No.: PIDA34296

Project Name	Promoting Biogas as Sustainable Clean Cooking Fuel for Rural Households in Kenya (P153493)
Region	AFRICA
Country	Kenya
Sector(s)	Other Renewable Energy (100%)
Theme(s)	Climate change (100%)
Project ID	P153493
Borrower(s)	SimGas IP BV
Implementing Agency	SimGas East Africa
Environmental Category	B-Partial Assessment
Date PID Prepared/Updated	11-Nov-2015
Date PID Approved/Disclosed	18-Nov-2015
Estimated Date of Board Approval	29-Jan-2016
Appraisal Review Decision (from Decision Note)	

I. Project Context

Country Context

1. Kenya, a lower middle income country (MIC) with per capita Gross National Income (GNI) of US\$ 1,160 in 2013, has a population of nearly 40 million people dispersed across 47 counties with significant regional disparities in economic growth and poverty reduction which pose significant development challenges. Kenya holds great potential from this growing and youthful population; its dynamic private sector; a platform for change laid down by the new Constitution; and its pivotal role within East Africa and beyond. From 2006 to 2013, annual growth rates averaged 5.0 percent. Kenya's high unemployment, poverty and inequality rates have dampened its new status as a MIC even though the data are outdated and precise levels are unknown. The rate of poverty reduction has not kept pace with economic growth. Poverty rate is estimated to have reduced to 38 percent in 2012 from 46 percent in 2005/6. Inactivity rates among the youth stand at 9.6 percent compared to national average of 8.5 percent. Inequality stands at 47.7 percent. Infrequently collected and disseminated statistics are not conducive to inform and shape economic policy. Governance concerns persist; and growth has been constrained by low investment and low firm-level productivity and has yet to take off at the rapid, sustained rates needed to transform the lives of ordinary citizens. There are significant differences in opportunities and outcomes between women and men and for those living in the remote and most underdeveloped regions.

2. "Vision 2030", a national long-term development strategy, aims to create a globally competitive and prosperous nation with a high quality of life by 2030 that aims to transform Kenya

into a newly industrializing, middle-income country providing a high quality of life to all its citizens by 2030 in a clean and secure environment. Vision 2030 calls for the rehabilitation and upgrading of the road network, upgrading the railways, improving urban public transport and expanding access to electricity and clean and safe water. The Government is currently implementing the first phase of the plan, covering the period 2013-2017 through its Medium Term Plan (MTP).

3. More than 75% of the Kenyan population live in the rural areas, with agriculture as their main occupation. The main farming systems feature cash crops, food crops, fruits and vegetables, forages, livestock, and tree growing. Energy plays a significant role in the lives of the smallholder farmers. They need energy for cooking, lighting, warming and drying (KARI, 2003). Fuel wood is the principal farm-based source of energy but is often in short supply. Biomass accounts for 68% of the total energy consumption (90% of the rural population is dependent on firewood), followed by petroleum with 22%, electricity 9% and others with 1%. In rural areas, reliance on biomass for energy is over 80 percent.

Sectoral and institutional Context

4. Kenya's electricity access is currently at 15% and the government plans to increase connectivity to at least 65% by the year 2022. It is estimated that more than half of the electricity supply is produced by hydroelectric dams, with the rest coming from fossil fuel thermal power plants and geothermal utilities. Some installed small-scale renewable utilities also contribute to the grid. There is still further potential for a higher contribution or improvement of renewable energy in Kenya with respect to energy efficiency, sustainable exploitation, impacts on the environment and people's health. Among these renewable energy sources is biogas which is mainly used at the domestic level where over 4,500 domestic size units have been installed over the past two years, averaging from 3-15 m³. Overall, there are several thousand biodigesters installed in Kenya, but, most of them operate below capacity or are currently in disuse due to management, technical, socio-cultural or economic problems.

5. The proposed project is part of the National Biogas Promotion Program KENDBIP (Kenyan Domestic Biogas Programme), which in turn is part of the larger Africa Biogas Partnership Programme (ABPP). ABPP has a target of 100,000 systems installed in Ethiopia, Kenya, Tanzania, Uganda, and Burkina Faso and providing half a million people access to a sustainable source of energy by the year 2017. The KENDBIP program, which is supported by SNV --the Netherlands Development Organization, an NGO--, was initiated in Kenya in 2009 with an overall goal of developing a commercially viable biogas sector in Kenya. Since from 2009 the program has managed to install over 14,000 biogas plants of the traditional brick-laid design in Kenya. The second phase of the program runs from 2014 to 2017 with a target of installing 27,500 digesters of both traditional and advanced innovative designs, such as the one promoted by this proposed program. The proposed project would work in collaboration with ABPP and KENDBIP as well as with the National Environment Management Authority (NEMA) of Kenya, which is the Designated National Authority (DNA) in Kenya for the Clean Development Mechanism (CDM). The program will also look forward to establishing a close working relationship with the Kenya Climate Investment Centre (KCIC) which is funding biogas development through its ongoing incubator financing as part of InfoDEV's Climate Technology Program. Links to the Lake Victoria Environment Management Program will also be established for mutual learning.

6. The project would target a number of development challenges, including providing access to clean, renewable off-grid energy; combating deforestation and providing climate change mitigation benefits; improving livelihoods; empowerment of women and children and improved health from reduced indoor smoke exposure. These are all supporting the World Bank Group's twin goals of eradicating extreme poverty and boosting shared prosperity.

II. Proposed Development Objectives

Reduction of GHG emissions from improved access to biogas energy as a clean cooking fuel in livestock-owning rural households in Kenya.

III. Project Description

Component Name

Comments (optional)

IV. Financing (in USD Million)

Total Project Cost:	7.00	Total Bank Financing:	0.00
Financing Gap:	0.00		
For Loans/Credits/Others			Amount
Borrower			0.00
Carbon Fund			7.00
Total			7.00

V. Implementation

7. SimGas IP BV is the Coordinating/Managing Entity (CME), which has developed the Clean Development Mechanism (CDM) Program of Activities (PoA) "SimGas Biogas Programme of Activities", registered under the UNFCCC on December 21, 2012. The first CDM Project Activity (CPA) is already being implemented. Additional CPAs will be included in the PoA once all biodigesters under the first CPA have been installed. The CME is responsible for overall CDM PoA execution and management, raising awareness, technological promotion, quality control, extension services, general monitoring and reporting. The CME will also be responsible for Certified Emission Reduction (CER) commercialization and signatory to the Emission Reductions Purchase Agreement (ERPA) with the World Bank as Trustee of the Carbon Initiative for Development (Ci-Dev).

8. SimGas East Africa (SimGas) is the project implementer responsible for the production, marketing, sales, installation and servicing of the biodigesters. Customers (households) in areas with SimGas sales representatives or associates offering the biodigester make the purchase decision based on their financial position, interest and a feasibility assessment by SimGas and operate the biodigester with either predominantly animal manure or organic kitchen wastes, depending on the type purchased. Households will benefit from a price discount offered by SimGas and the extended warranty made possible with carbon finance from the sale of CERs. Benefit-sharing to households would thus not materialize in carbon revenue per se, but would be built-in to the warranty provided. The households have an incentive to keep the systems in operation due to displacement of wood fuel and/or cooking gas and associated savings.

9. The CPA implementing entity (CPA IE) is the party that is in charge for running a particular CPA. This role is performed by the CME in Kenya for the purposes of this planned carbon finance operation. The CME will be responsible for preparing monitoring reports in accordance with the relevant CDM methodologies and to coordinate the contributions of all entities involved in the CPA. Field measurement personnel operate under the direction of the CME, recording monitored data in the CME database and providing input for the writing of monitoring reports.

10. SimGas plans to manufacture the biodigesters in Dar Es Salaam, Tanzania, at their joint venture production facility and import the biodigester components to Kenya by road. Biodigester components will then be distributed to warehouses (currently in Karatina, Eldoret and Nakuru). In Kenya, Nairobi is the SimGas central head-office, with key management staff operating from there. SimGas sales representatives stationed within 10 km radius from warehouses will promote biodigesters to households owning a minimum of 2-3 heads of cattle. Simgas installation teams will install the biodigesters and provide training in their use to customers. SimGas plans to open hub offices by renting warehouse & office space in 9 high-potential areas in North-rift and Central in Kenya, namely Nairobi, Nyeri-Karatina, Kiambu, Eldoret, Meru, Kisii, Nyandarua, Kericho, and Nakuru in 2015 and 2016. If the market demand allows, SimGas aims to open more hubs across Kenya to better serve where clusters of beneficiaries are located. SimGas plans to gradually increase annual delivery to 11,200 biodigesters starting from year 2018.

11. Achieving the delivery targets will rely on the success of the salesforce on one hand, but also the quality of biodigesters and the satisfaction of customers. Thus far, a large share of sales have been made based on recommendation of satisfied customers. Going forward, customer-to-customer marketing will continue to be an important aspects of the implementation plan, but so will the importance of the salesforce growth when expanding to new geographical locations. Growth to more underprivileged areas of the country will require more readily available credit. Currently SimGas offers an option for payments in installments, and plans to develop this going forward.

VI. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	x	
Natural Habitats OP/BP 4.04		x
Forests OP/BP 4.36		x
Pest Management OP 4.09		x
Physical Cultural Resources OP/BP 4.11		x
Indigenous Peoples OP/BP 4.10		x
Involuntary Resettlement OP/BP 4.12		x
Safety of Dams OP/BP 4.37		x
Projects on International Waterways OP/BP 7.50		x
Projects in Disputed Areas OP/BP 7.60		x

Comments (optional)

This Program was assigned a Category B as it is likely to have minimal or no adverse environmental impacts, based on the nature of planned interventions. The project triggers OP 4.01 - Environment Assessment – to guide safe handling and appropriate timing of application of the bioslurry onto fields with sufficient period of delay between landspreading organic amendments and

crop harvesting. When utilizing the biogas, careful attention should be paid to the safe usage of the biogas and regular checks made on the digesters and piping for cracks to avoid leakage of biogas into ambient air. SimGas has internal protocols for safe installation and for providing its customers with environmental health and safety information together with other technical documentation (which serves as an ESMF/ESMP for the project). The ESMF/ESMP is publicly available in Kenya and has been disclosed in the Bank InfoShop. SimGas has an established information sharing / grievance redress system for customers and project affected people, which will be utilized for this project.

VII. Contact point

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