
Biogas Program in Kenya: History, Challenges and Milestones

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Abstract

The purpose of this paper is to provide a review of history of biogas in Kenya, challenges and milestones. The first part highlights the introduction of biogas in Kenya in 1950s; the second part covers the challenges of biogas including policy framework gaps, high cost of installation and biogas systems technical challenges. The last part provides the milestones achieved in biogas sector despite the challenges. The paper concludes that there is still a need to engage more in Public Private Partnerships to ensure sustainability in biogas program in Kenya.

Keywords: Kenya biogas program, biogas projects, biogas history, biogas challenges, biogas Kenya, biogas milestones, biogas installations, biogas construction, fixed dome biogas installation, Kenya biogas policy, biogas affordability, domestic biogas installation, sustainable renewable energy, clean cooking solutions

Introduction

Despite technological advancements in renewable energy adoption around the world, many households continue to face the challenges of insufficient energy supply (Juma, 2020). According to FAO data from 2017, over 2.4 billion people rely on wood for cooking. The use of wood and charcoal contributes to greenhouse gas emissions while also contributing to deforestation and forest degradation. Therefore, there is a need for alternative source of energy like biogas for sustainable environment (FAO, 2017). This kind of energy provides clean cooking solution as it sustains environment.

History of Biogas

Biogas as a renewable source of energy was introduced in Kenya in the 1950's. Coffee pulp was used as the main raw material in the production of biogas. The biogas systems ranged in designs such as Indian floating-drum and Chinese fixed-dome biogas digester (Sara, 2017).

In 1948, Tim Hutchinson built the first biogas digester in Kenya. He used coffee pulp from his farm as the primary raw material (Daraja Kenya, 2014). In 1954, Tim applied gas as an alternative energy for the home farm and designed various alternative energy related products (Tunnel Energy, 2015). In 1958, he began commercially constructing biogas digesters, marketing effluent as the main product and biogas as a useful byproduct. Mr. Tim Hutchinson and his company sold over 130 small biogas units and 30 larger units across the country between 1960 and 1986 (FAO, 2018).

Since the 1980s, the Kenya government, development partners, and private stakeholders made several promotional efforts to increase the use of biogas, but adoption of this technology remained extremely low (FAO, 2018). In the year 2009, the Africa Biogas Partnership Programme (ABPP), collaboration between *Hivos* and SNV aimed at assisting national biogas programs in five African countries including Kenya, Uganda, Tanzania, Ethiopia and Burkina Faso. The programme was funded by Directorate General for International Cooperation (DGIS) of the Dutch Ministry of Foreign Affairs and SNV – Netherlands Development Organization. *Hivos* was tasked with carrying out the role of funds and programme management while SNV provided capacity building services for the programme. The program had proposed to build 100,000 biogas plants in the five African countries, providing a sustainable source of energy to nearly half a million people.

Challenges Facing Biogas in Kenya

Despite the numerous advantages of using biogas, the system adoption in Kenya is not as great as expected. Policy formulation is also a challenge. The government policy vaguely state the promotion of use of renewable energy sources without a clear plan of action. Further more, the policy faces a number of difficulties, including the fact that rural energy is given low priority in planning and development and resource allocation (Wachera, 2009).

High cost of installing a biogas system is another challenge Biogas has an upfront cost, but once the equipment is installed, it is basically free. However, a simple home biogas unit costs between Ksh.50, 000 (\$500) and Ksh 80,000 (\$1000), which is out of reach for most Kenyans (Njagi, 2016).

Biogas systems technical challenge: Bad biogas reputation has also tainted the biogas sector with reports of biogas systems not working or in poor working conditions. This negative publicity does not offer potential buyers a good look in their search of green energy alternatives (GTZ, 2009).

Milestones of Biogas in Kenya

Despite the challenges facing biogas production, Kenya is in the frontline in biogas policy and investment in Africa. Between 2009- 2013, over 160 institutions participated in the ABPP program. During this period, 11,529 plants were constructed. The program further trained 577 masons who went ahead to form and register the Association of Biogas Contractors of Kenya (ABC-K) and Association of Biogas Sector of Kenya (ABSK). The associations have continued to promote biogas sector with over 240 of the masons being sole proprietors (ABPP, 2018)

Conclusion

Since 1950's Kenya has made strides in providing sustainable energy solutions including biogas. However, there are still glaring challenges including but not limited to policy framework gaps, high cost of installation and biogas systems technical challenges.

Despite these challenges facing biogas production, Kenya is in the frontline in biogas in Africa. As such, there is still a need to engage more in Public Private Partnerships to ensure sustainability in biogas program in Kenya.

Disclosure

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