POLICY BRIEF 4. DECEMBER 2021

ACCELERATE UPTAKE OF INSTITUTIONAL STOVES THROUGH PROVISION OF FINANCIAL INCENTIVES

TECHNOLOGY DESCRIPTION

TECHNICAL DESCRIPTION: TNA ENERGY MITIGATION

Institutional stoves are made of clay or other insulators for the inner lining and with metal cladding covering the outer surface. It has a high energy efficiency which makes it a very attractive mitigation option in institutions for cooking. In most cases insulators such as bricks are used as refill in the cavity between the inner and outer surfaces. Some manufactures use tiles on finishing which makes it very attractive. Institutional stoves are used where larger amounts of food than can be accommodated on a standard kitchen stove can be cooked. Typical examples are schools, hospitals, prisons and other institutions. Institutional stoves are also used in refugee camps, particularly in the early stages when large influxes of people require food urgently. Typically, these groups will use institutional stoves with a cooking capacity of 50 liters to 200 liters. Another very different group of users are entrepreneurs who own restaurants. In such cases, the stove is likely to be used for several hours each day. The most common fuel is firewood because it is readily available and is the cheapest option; but of recent the price of firewood is increasing.

Fuel efficiency: Where stoves are used in refugee camps, the acute shortage of fuel may be one of the reasons for choosing to cook communally. *Strength and quality:* Heavy weights, such as a full container of boiling water, will regularly be placed onto the stove. The stove must therefore be built to withstand such loads. *Low emissions:* Where people are subjected to emissions for long periods, it is very damaging to their health. Those using institutional stoves will rarely be exposed to pollutants. Illnesses related to smoke inhalation include respiratory diseases, eye discomfort and infections; with use of institutional stoves these are minimized because good institutional stoves reduce emissions. *Seasonal influences:* If a stove can use a variety of fuels, it may be possible to use lower cost fuels, such as agricultural residues, during some times of the year. However, a stove that relies solely on residues can only be appropriate if these residues are assured.

CURRENT TECHNOLOGY READINESS LEVEL OR COMMERCIAL READINESS INDEX

The current commercial readiness index for the institutional stoves technology in Uganda stands at level 4 – supported commercial. There are multiple commercial applications locally although some are still subsidized majorly by development partners. The subsidy is intended to reduce the high upfront costs that are required to acquire and install institutional stoves. High upfront costs were the major barrier identified that hinders the deployment and diffusion of this technology. Most schools in rural and peri-urban areas are willing to purchase stoves but cannot afford the initial costs involved.

CLIMATE RATIONALE OF THE TECHNOLOGY

Biomass is the most favorable fuel for cooking in institutions. Most of institutions are using low efficiency stoves such as three stone stoves because they are cheap to install, but the fuel consumption is almost double that of improved institutional stoves. The construction of 1,000 efficient institutional cook stoves in schools will lead to a saving of 12,375 tons of firewood per year, which is 61,875 tonnes in a period of 5 years. This is expected to reduce emissions by 22,546 tons CO_2 eq. per year and 112,730 tons in a period of 5 years.

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AMBITION OF THE TECHNOLOGY

SCALE FOR IMPLEMENTATION AND TIME-LINE

The Ambition is to construct 1,000 efficient institutional cook stoves in 500 schools by 2030. The schools will be both from urban and rural areas since majority use firewood as the main source of fuel for cooking. The most durable high quality stoves are those with stainless steel saurce pans. The use of alluminum saucepans will be discouraged.

AMBITION FOR TECHNOLOGY READINESS LEVEL OR COMMERCIAL READINESS INDEX

The current commercial readiness index for the institutional stoves in Uganda stands at level 4 – supported commercial. The ambition for this technology anticipates accelerated uptake of institutional stoves by the schools, prisons, restaurants, health facilities, refugee camps, based on subsidies from Government and development partners. It is envisaged that more schools will take up the initiative and promote the use of institutional stoves.

EXPECTED IMPACTS OF THE TECHNOLOGY

- Job creation for stove manufactures, suppliers of inputs such clay and bricks, distributors and retailers of institutional stoves. Few companies may venture in manufacturing of stainless steel saucepans. Stainless steel plates will have to be imported.
- Gender aspect: Cooking meals in schools involves both men and women, often heavy manual work is handled by men while light work is taken care of by women.
- The use of improved stoves will improve the working environment and health of cooks , because there will be limited indoor air pollution in kitchens
- Improved skills/capacity due to training opportunities especially for institutional stoves manufactures and components suppliers such as chimneys and saucepans.
- Reduced emissions from combustion of firewood.
- The reduction in the use of firewood implies that more trees will be conserved hence it will promote conservation of eco systems.

POLICY ACTIONS FOR TECHNOLOGY IMPLEMENTATION

EXISTING POLICIES IN RELATION TO THE TECHNOLOGY

1. The National Climate Change Bill, 2020
2. Third National Development Plan, 2020/2021 – 2024/2025
3. The Energy Policy Uganda 2002, revised 2019
4. The Uganda Green Growth Development Strategy 2017/18 – 2030/31
5. Uganda Vision 2040
6. Uganda National Climate Change Policy 2015
7. Uganda's Determined Contribution (NDC) 2015
8. Uganda Second National Communication to the United Nations Framework Convention on Climate Change 2014
9. National Biomass Strategy, 2013.

PROPOSED POLICIES TO ENHANCE TECHNOLOGY IMPLEMENTATION

1. Policy on provision of financial incentives and subsidies to off-set the high upfront costs which is a major deterrent to the deployment and diffusion of the technology.
2. Policy on institutional development in the biomass sector to ensure strong institutional frameworks and proper coordination among stakeholders
3. Policy on skills development to build the capacity of the institutional stoves workforce
4. Policy and regulations for standards and quality of institutional stoves
5. Policy on innovation and technology to encourage local production of all components of intuitional stoves.

COSTS RELATED TO THE IMPLEMENTATION OF POLICIES

The schools will be both from urban and rural areas since majority use firewood as the main source of fuel. The proposed 1000 stoves with stainless steel saurce pans, installation and servicing for five years is expected to cost US$1,995,000. Addtional 300,000 will be required for the procurement procees and other variable costs such as transport and materails, since thepragrmme will cover the whole country. The total cost is estinated at USD 2,300,000 as staed in the barrier analysis. The cost to implement this policy is USD 450,000.

USEFUL INFORMATION

CONTACT DETAILS

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LINKS TO TNA REPORTS

https://tech-action.unepdtu.org/country/uganda/