

Call for action. Private school proprietors have called on government to provide tax incentives and subsidies for renewable energy technologies.

BY KARIM MUYOBO

Schools across Uganda could save up to Shs15 million, usually spent on firewood every term, if they adopt biogas technology. However, experts explain that setting up the system requires an initial investment of between Shs30 million and Shs50 million, depending on the size of the institution. They insist that once set up, the operational costs are more than worth the investment.

Nearly all education institutions in Uganda rely on firewood for cooking, making the education sector one of the country's biggest consumers of this form of fuel. Experts warn that the heavy dependence on firewood is accelerating deforestation, while also increasing operational costs for schools, due to rising fuel prices.

Mr Isaiah Ssagala, a biogas installer from Divine Renewable Company Biogas Solutions Uganda, said schools can reduce both environmental destruction and cooking expenses by converting waste into cooking gas.

"We want people to reduce the use of charcoal and firewood because they produce smoke and affect the environment. If you have animal waste, food waste and toilets, we can construct biogas systems that help reduce emissions and provide clean energy for cooking," Mr Ssagala said.

He explained that biogas systems use organic waste such as cow dung, food remains and human waste from toilets to generate methane gas used for cooking and lighting among other uses.

For schools, we connect all toilets to the cooking biogas system and create a chamber where food waste is inserted. The waste produced by students is enough to support cooking activities once combined with additional feedstock such as cow dung," he said.

He added, "schools currently spending nearly Shs20m on firewood every term can reduce the expenditure to about Shs3m after adopting biogas technology. The only requirement is enough feedstock. One truck of cow dung costs around Shs100,000, which is cheaper than buying truckloads of firewood every term."

Mr Ssagala added that the number of learners in a school and the amount of waste generated daily determines the size of the biogas plant to be set up at the premises.

"We calculate the amount of waste produced per day before designing the plant because every student contrib-

Biogas can reduce cost of cooking fuel, experts say



Trees cut for firewood in Ogwete Sub-county, Otuke District last year. PHOTO/BILL OKETCH

utes to the production," he explained. "A school of about 1,000 students can produce enough waste to sustain a large biogas system."

Firewood dependence

Uganda's education sector remains heavily dependent on firewood despite growing calls for cleaner and more sustainable energy sources. Experts estimate that a boarding school with about 1,000 students consumes between 12 and 14 truckloads of firewood every term, to prepare meals for learners. This places the cost of firewood at nearly Shs10 million per term or about Shs10,000 per student, considering the contribution of tuition fees.

The continued dependence on firewood has placed schools at the centre of concerns over environmental degradation and deforestation, especially in rural areas where many institutions rely on nearby forests for fuel.

The Ministry of Education and Sports says although the transition to clean energy may take time, schools are being encouraged to adopt environmentally friendly technologies as part of Uganda's climate change mitigation efforts.

Sensitising schools

According to Dr Kedrace Turyagyenda, the education ministry's permanent secretary is already sensitising schools on the need to reduce firewood consumption. "We mitigate climate change through reduction of the use of firewood and its products. However, it is some-

EXPERTS WEIGH IN

Environmental experts warn that unless schools adopt cleaner energy sources, Uganda's forests will face even more pressure from increasing demand for firewood and charcoal. In recent years, Uganda has lost significant forest cover due to high consumption of wood fuel by households and institutions such as schools.

Stakeholders now believe that wider adoption of biogas systems, solar cooking technologies and energy-saving stoves could help schools reduce operational costs while conserving the environment.

thing that cannot happen immediately because schools still need affordable alternatives," Dr Turyagyenda said. "There are already alternatives available."

The permanent secretary added that many schools have already adopted energy-saving stoves as an interim measure to reduce firewood consumption. "For now, we continue encouraging institutions to use energy-saving stoves because they reduce the amount of firewood consumed."

Dr Turyagyenda revealed that government is also considering the possibility of introducing reduced electricity tariffs for education institutions to make alternative energy sources affordable.

"When people realised how cutting trees was affecting the environment, schools were encouraged that if they cut one tree, they should plant two. Young people must understand the importance of protecting the environment," she said.

Alternative energy-saving stoves

However the significance of these measures has not been lost on the permanent secretary. "We teach learners that plastics destroy the soils and vegetation. Environmental conservation starts with changing attitudes among young people," she said.

As many schools struggle to transition to expensive renewable energy systems, energy-saving stoves have emerged as the common alternative being adopted by institutions across the country.

Private school proprietors say the stoves have helped reduce firewood consumption and operational costs, although they are not a complete solution to the environmental challenges caused by traditional cooking methods.

Mr Hasadu Kirabira, the National Chairperson of the National Private Educational Institutions Association (NPEIA), said schools are increasingly embracing energy-saving technologies in response to global climate concerns.

"We cannot say schools have completely stopped using firewood, but we are encouraging institutions to move with climate mitigation measures and reduce environmental risks," Mr Kirabira said.

He explained that the first interven-

tion in many schools was the introduction of energy-saving stoves because they were relatively affordable compared to modern cooking systems.

Energy-saving stoves

According to Mr Kirabira, the improved stoves are now common in many schools across Uganda. "Energy-saving stoves are helping schools reduce operational costs and fuel consumption. They are not perfect, but they are better than the traditional open-fire systems."

However, he noted that schools are now beginning to explore cleaner technologies such as solar-powered cooking systems and gas-based kitchens.

Mr Kirabira also explained that high-end schools in urban areas are adopting modern energy technologies faster because they have stronger financial support and better infrastructure.

"In urban schools, parents expect modern standards and institutions are trying to improve their kitchens. But the majority of schools, especially in rural areas, are still struggling with operational costs," Mr Kirabira said.

"Schools in rural areas understand the dangers of environmental destruction, but they cannot easily shift because modern systems are expensive to install and maintain." He adds that, "When we visited Kenya recently, we found schools already using modern cooking systems and these are some of the practices we want Ugandan schools to adopt."

Mr Kirabira revealed that the association has also benchmarked modern cooking technologies from neighbouring countries such as Kenya. "We are working with banks and development partners so schools can access loans and financing because these technologies are sustainable in the long term," he says.

Financial challenges

Despite growing awareness, many schools continue to face practical and financial challenges in adopting clean energy technologies. Mr Kirabira explained that the amount of firewood consumed by schools depends on whether the institution is boarding or day and the number of learners enrolled.

"If it is a boarding school, consumption is very high because cooking takes place throughout the day and night. A school with about 500 boarding students can consume three to four fully packed trucks of firewood every term. When schools adopt energy-saving stoves, consumption can reduce from four trucks to about two trucks every term," he said.

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BY MUDANGHA KOLYANGHA

Musana schools: Where learning meets practical life skills