

HOW TO IMPROVE THE PERFORMANCE OF THE RENEWABLE ENERGY - HEALTH SECTOR NEXUS IN UGANDA?



EXECUTIVE SUMMARY

This policy brief provides an analysis of the main difficulties as regards of the deployment of distributed energy systems for the electrification of Health Centres in hard to reach areas. On the one hand, powering healthcare facilities is key to attain the National Development Plan (NDP III) objective of increased access and consumption of clean energy, but also complements the aspiration of Agenda 2030 to achieve universal access to electricity - as seen in SDG 7. On the other hand, renewable energy offers a clean, reliable, and cost-effective solution to address energy needs of the health facilities in the hard to reach areas and refugee centres. Therefore, we recommend the Government of Uganda to **mobilize investments in renewable energy, lead a campaign to promote the necessity of renewable energy in Health Centres, integrate gender issues in energy policies, and to undertake plans to improve Operation and Maintenance of renewable**

CONTEXT

Energy poverty remains one of the biggest challenges of sustainable development in Uganda. However, Uganda benefits from a large potential of renewable energy; the current installed generation capacity is 1,346 (MW), which is over 90%ⁱ renewable. But access to electricity stands at 57%, with 19% grid and 38% off-gridⁱⁱ. According to Uganda's National Electrification Strategy (NES) 2022, only 1,255 (37%) of the 3,392 known health facilities benefit from electricityⁱⁱⁱ. About 80% of Ugandans receive healthcare from Government health facilities, while 20% receive healthcare from private health centres. Access to energy is critical when it comes to the functionality of health-care facilities, but also to the quality and reliability of health services delivered. The Government of Uganda (GoU) has joined its forces to develop local energy sectors, but major issues prevent the energy and health systems from being efficient and reliable.

KEY FIGURES

- Only **37%** of Ugandan health facilities are electrified.
- Only **28.6 billion UXG**^{iv} have been earmarked for installing modern energy sources in rural health facilities under ERT III.
- **67%** of health facilities at national level remain a death trap for sick people.
- **25% to 50%**^v of all vaccines are wasted each year mainly as a result of breakdowns in their cold chain management due to lack of energy accessibility, reliability, affordability and infrastructureⁱ.

ⁱ Electricity Regulatory Authority. [Installed capacity](#). 2021

ⁱⁱ Uganda Bureau of Statistics. [The Uganda National Household survey](#). 2020

ⁱⁱⁱ Government of Uganda. National Electrification Strategy. 2022

^{iv} World Bank. [Energy for Rural Transformation III](#). 2022

^v UNEP. [Why optimized cold-chains could save a billion COVID vaccines](#). 2020

| PROGRESS ACHIEVED |

GoU has made reasonable efforts to improve the performance of the renewable energy-health sector nexus. Notably, it has enabled a few investments in renewable energy, increased electricity generation capacity from 317 MW (2002) to 1,346 MW (2022), evacuated and invested in transmission infrastructure (including 10,000 Km of medium voltage networks and 15,000 Km of low voltage network under the Rural Electrification Program) from hydroelectric power stations. **We appreciate** efforts to develop local energy sector workforce and skills through internships and apprenticeships involving young people and general dominance of renewable energy in the national energy mix.

We also recognize GoU's efforts to develop standards for solar systems and implement the Sustainable Energy Response Plan for refugees. **We also take note** of GoU's interventions in the third phase of the Energy for Rural Transformation (ERT III) Program that has supported the electrification of about 1,149 health facilities with decentralized, Solar Photovoltaic systems which has been important during and after the COVID-19 pandemic period.

| IMPORTANT ISSUES TO BE ADRESSED |

Despite the above mentioned, improving access to renewable energy for Health Centres in hard-to-reach areas and refugee settlements in Uganda faces major hurdles:

- **Low levels of access to affordable and modern renewable energy services in rural areas:** only 37% of the Health Centres are electrified, national electricity access remains under 57%, and 38% of this is off grid. These insufficiencies in energy provision to Health Centres have important health consequences, especially in the hard-to-reach areas (notably for vaccine and blood storage^{vi}, impossibility to sterilize tools etc.) and refugee centres. The need for cold-chain management was very pronounced during the COVID-19 pandemic and only those Health Centres with a reliable power supply could be used as vaccination centres.
- **A lack of investments in the renewable energy sector:** only 28.6 billion UXG have been earmarked for installing modern energy sources in rural Health Centres under ERT III. This is insufficient to overcome the energy crisis in Health Centres in Uganda. PV and battery systems offer a clean, reliable, and cost-effective solution
- **Limited and insufficient renewable energy awareness:** currently, there are limited efforts towards energy consumer information - including options towards sustainable use, alternatives to biomass energy use and available efficient technologies. Additionally, there is far less attention paid to efficient use of energy than to efficient energy supply.

^{vi} Most vaccines require storage within a range of 1.7 – 7.8°C to remain safe for use.

- **Inadequate technical capacity:** there is limited knowledge about Operation and Maintenance of solar equipment that creates frequent breakdown of solar equipment worsening service delivery in the rural and hard-to-reach Health Centres. Health Centres with solar power equipment like solar panels, wiring, bulbs and batteries require regular maintenance by trained and experienced personnel. Proper planning for supply of spares and Operation and Maintenance works are key for health facilities powered using stand-alone solar systems.



- **Lack of integrated and joint planning:** renewable energy is a viable option for the full operation of rural and hard to reach Health Centres across the country. It should then be considered as integral in other sectors like education (for lighting in libraries, laboratories), environment and natural resources management (to biomass dependence), agriculture (irrigation, value addition for crop harvests and animal products) and rural growth centres.
- **A lack of gender consideration in energy – health nexus:** access to clean, affordable energy is necessary in achieving better health for women and rural development generally. Gender-centered energy policies and programs for Health Centres are crucial for determining the roles of men and women in households as well as their health needs. By recognizing that men and women have differentiated priorities in energy - health nexus, decision-making therefore has to be accordingly gender-centered for gender equality.

Case study: The Kiboga district Hospital

“When electricity means life or death in public Health Centres”

The Kiboga district hospital serves 100,000 people. When it goes without power for a month, doctors are unable to provide even basic first aid such as sutures because of the impossibility to sterilize tools. Vaccines and blood samples get spoiled due to lack of refrigeration, and laboratories cannot perform diagnostic services without power. The maternity wing is in complete darkness, and Caesarean sections cannot be performed. Mothers usually die on their way to the Kampala or private clinics in an attempt to access emergency obstetric care.

RECOMMENDATIONS

- Ø GoU, in collaboration with Development Partners and CSOs, **mobilize investments in renewable energy** to attract additional investments in the provision of reliable, affordable and sustainable power systems in un-electrified, hard-to-reach healthcare facilities and refugee settlements. **GoU should consider reliable access to electricity a priority in the allocation of resources.**
- Ø **GoU prioritizes inclusion of an energy officer position in local government structures to provide linkages with health and other sectors,** coordinates procurement of renewable energy products and services, oversees training and joint planning.
- Ø **GoU undertakes public awareness raising and training through a national deliberate budgeted campaign** to highlight the importance of renewable energy access to a well-functioning health system, especially in rural and hard-to-reach health centres.
- Ø **GoU ensures that oil and gas development take care of renewable energy interventions in development:** notably, the oil pipeline should look into use of solar power to heat the pipeline rather than the conventional hydroelectricity.
- Ø **GoU undertakes plans to improve Operation and Maintenance** of energy infrastructures by ensuring that:
 - (i) Before installation of centralized PV systems, **health centres are fully wired and connect through a circuit board.**
 - (ii) The solutions provided make use of recent developments in energy technology, appliance efficiency, remote monitoring and communication, and even metering.
 - (iii) **Support CSOs to deliver capacity building** for Operation and Maintenance in the renewable energy sector.
- Ø **GoU integrates gender in energy policies** to reduce vulnerability of women and girls to sexual and gender-based violence (SGBV) around energy project sites, at workplaces and during biomass collection.

This paper was produced by RE-CSO Network, a Uganda loose semi-formal Network that brings together civil society, organizations, academic institutions, individuals, and Networks engaged in the promotion and development of activities and practices in the Renewable energy sub sector at all levels.

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