



ENVIRONMENT GOVERNANCE INSTITUTE (EGI) UGANDA

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Hon. Ruth Nankabirwa Ssentamu
Minister of Energy and Mineral Development (MEMD),
Amber House Plot No, 29/33 Kampala Road,
P.O Box 7270
Kampala Uganda.



Dear Hon Minister,

RE: PETITION CALLING ON MINISTRY OF ENERGY AND MINERAL DEVELOPMENT TO EXPEDITE ROLL OUT OF MSSION 300 IN UGANDA

The Environment Governance Institute (EGI) commends you and your team at the Ministry of Energy and Mineral Development for your work in promoting the sustainable management and utilisation of Energy and Mineral Resources, especially in this time of global energy sector tensions.

EGI is a non-profit non-governmental organization dedicated to promoting the sustainable and equitable management and utilization of natural resources in Uganda and the Great Lakes region. Our work centres on strengthening community voices and ensuring that development processes are inclusive, equitable, and responsive to the needs of vulnerable populations.

Hon. Minister, we recently learned that Uganda spearheaded by the Ministry of Energy and Mineral Development, signed up to the Mission 300 initiative led by the World Bank and African Development Bank. This is a great move as this initiative demonstrates the country's commitment to expanding access to clean, reliable, and affordable energy by 2030. This positions Uganda within the broader continental effort to accelerate universal energy access and drive inclusive socio-economic transformation.

We note that Uganda, like many countries in sub-Saharan Africa, faces several challenges in accessing clean, reliable and affordable energy especially for communities located in rural areas. About 28.6 million people still lack access to clean energy, and the rural population struggles to access connections.

This makes the initiative a timely need for Ugandans and country at large. Prioritizing last mile connection particularly targeting rural population, focusing on off-grid home solar solution and

clean cooking technologies are pivotal to reduce pressure on wood fuel. This approach aligns to Uganda Vision 2040, NDCs, and efforts to meet sustainable development goal 7 by 2030.

However, we emphasize that signing the initiative alone is not sufficient. The true measure of success lies in effective rollout, inclusive community engagement, mindset preparation, implementation, accountability, and equitable delivery of energy access to all Ugandans particularly underserved and rural communities.

Therefore, we have pointed out some key areas that need to be addressed as we roll out Mission 300 initiative in the country so as to make it a success, these have been highlighted below;

1. Community Misconceptions on Clean Energy Technologies

The dictates of Mission 300 mean we must bring clean energy access to the last-mile community. However, access alone does not guarantee uptake or sustained use. We have observed significant grassroots resistance and misinformation about clean energy technologies, including solar, in deep rural communities. Drawing from our recent field engagements and qualitative interviews in Kyotera and Rakai districts, we identified persistent misperceptions and cultural barriers to adopting clean energy technologies such as solar.

The prevailing myths suggest that solar energy causes physical harm, such as damaging eyesight, or destroys personal property, for example, “burning bulbs,” “weakening phone batteries,” or even “attracting lightning.” These silent perceptions create a hostile environment for adoption, ensuring that even if infrastructure is provided, the target population may reject or underutilize it.

This pattern is not unique to Uganda. Similar findings have been documented in rural electrification programs in parts of Tanzania and Malawi, where misinformation significantly slowed solar adoption despite heavy investment in infrastructure. Without targeted community sensitization and trust-building, Mission 300 risks replicating these outcomes, where infrastructure exists but meaningful access remains unrealized.

2. Quality of Solar Systems

The quality of solar panels and batteries in the country has been a major concern for years. We have observed that despite the existing legal framework for consumer protection, there is a critical lack of quality control within the local solar value chain. According to a 2020 assessment by the Uganda National Bureau of Standards (UNBS), nearly 70% of solar panels on the Ugandan market did not meet required standards, highlighting systemic regulatory enforcement gaps.

The market is flooded with low-quality systems characterized by battery inefficiencies and short lifespans, often lasting only 1–2 years due to poor storage capacity and substandard components. This creates a high risk of abandoned infrastructure, where Mission 300 assets

may fail shortly after deployment, leading to erosion of public trust, reputational damage to clean energy programs, and inefficient use of public and donor funds.

Experiences from Kenya's early solar home system expansion also show that influxes of counterfeit or low-quality products led to widespread system failures and consumer skepticism, requiring later government intervention to restore standards. There is also a risk of low adoption based on the assumption that the quality of these products is inherently unreliable.

3. Limited Capacity to Install and Maintain Renewable Technologies

Despite high solar potential to support the rollout of last-mile solar energy access, there is low awareness and a lack of trained local technicians to support and sustain these systems in communities. This technical capacity gap represents one of the most critical bottlenecks in rural electrification.

A lack of local expertise often leads to the failure of rural electrification systems. When systems in remote areas break down, the absence of nearby technicians causes prolonged downtimes, sometimes stretching into months, rendering systems effectively unusable. The imperative to scale up training and localized technical services within last-mile communities is therefore pivotal to sustain the effectiveness of Mission 300 rollout in Uganda.

In addition, there is a risk that expatriates may be brought in to install and repair systems, a model that has been observed in large-scale infrastructure projects across Africa, which removes employment opportunities from local populations and undermines long-term sustainability.

For example, in parts of West Africa, donor-funded solar mini-grid projects have collapsed due to lack of local maintenance capacity once external contractors exited. There are currently insufficient certified solar technicians relative to the scale of national demand, which remains a major risk for the sustainability of the initiative.

4. Limited CSO Space and Engagement in Mission 300 rollout

There is inadequate inclusion of civil society organizations (CSOs) and local communities in the rollout of Mission 300, which risks undermining transparency, accountability, and the relevance of energy interventions. This top-down implementation approach has historically resulted in misaligned projects that fail to respond to actual community energy needs.

Without meaningful engagement, projects may fail to reflect real community needs, particularly in last-mile areas. CSOs are essential for community mobilization, social accountability, and ensuring equitable access, including addressing affordability and gender concerns.

Evidence from large-scale development programs, including rural electrification initiatives under the World Bank and African Development Bank, shows that projects with strong CSO participation have higher adoption rates and stronger community ownership outcomes.

To successfully deliver on its target of connecting 300 million people by 2030, Mission 300 must strengthen structured and inclusive participation mechanisms, fostering greater public trust, ownership, and long-term impact.

5. Affordability Constraints in Off-Grid Energy Access

While off-grid solar solutions are essential for expanding electricity access in remote areas, evidence shows they are largely delivered through commercial, cost-recovery models and pay-as-you-go financing, which can result in relatively high end-user costs. The World Bank/ESMAP Off-Grid Solar Market Trends Report highlights the sector's reliance on private financing, while the Energy for Growth Hub notes that such models can create affordability challenges for low-income households.

As a result, tariffs may remain high compared to subsidized national grid electricity, limiting uptake among rural and underserved communities. In Uganda, where a significant proportion of rural households live below the poverty line, even small recurring payments for solar services can become prohibitive.

The International Renewable Energy Agency (IRENA) also emphasizes that affordability constraints persist without public support. For example, studies in East Africa have shown that households often disconnect from pay-as-you-go systems due to inability to sustain payments, even after initial adoption.

Therefore, without targeted subsidies and last-mile financing support, off-grid solutions risk remaining inaccessible to the poorest households, slowing progress toward equitable energy access.

6. Debt Sustainability Risks in Last-Mile Electrification

Uganda faces a potential debt trap risk if last-mile energy connections are financed through heavy borrowing without adequate revenue returns. These connections typically serve low-income, low-consumption households, generating limited tariff revenue often below cost and requiring subsidies, while loan repayments, especially in foreign currency, fall due within short timelines.

Without careful financing, this mismatch can lead to refinancing cycles and rising public debt, diverting resources from essential sectors such as health, education, and agriculture. This risk is particularly pronounced given Uganda's already increasing public debt profile and exposure to external financing shocks.

Comparable experiences in countries such as Zambia and Ghana demonstrate how infrastructure expansion financed through non-concessional loans can strain national budgets when projected revenues fail to materialize.

Recommendations

Hon. Minister, in light of the above observations, we submit the following targeted and actionable recommendations:

1. Launch a National Community Sensitization and Behavior Change Campaign

Explore partnerships with civil society actors, local leadership structures, cultural institutions, and community radio platforms to deliver targeted awareness campaigns that demystify solar technologies and directly address prevailing myths. This approach should go beyond information dissemination to include demonstration projects, peer learning, and the use of trusted community leaders to build confidence at the household level.

2. Establish a Localized Renewable Energy Skills and Service Program

Engage with district-level technical institutes to roll out a fast-track certification program for renewable energy technicians. This initiative should prioritize training local youth as technicians capable of installation, maintenance, and troubleshooting of decentralized energy systems. This program can be positioned within existing national skilling frameworks, such as the Skilling Uganda Strategy, to enhance scalability and alignment with labour market demands.

3. Institutionalize Inclusive CSO and Community Participation in Mission 300

institutionalize engagement with civil society and community engagement into Mission 300 governance frameworks, this including planning, monitoring, and evaluation processes. This can be operationalized through multi-stakeholder coordination platforms at both national and sub-national levels.

CSOs play a critical role in community mobilization, social accountability, and safeguarding standards particularly on land rights, gender inclusion, and equitable benefit-sharing. Embedding these actors within implementation structures will enhance transparency, legitimacy, and responsiveness to community needs.

4. Enhance Affordability through Pro-Poor and Blended Financing Approaches

Adopt a blended financing approach that combines targeted subsidies, results-based financing, and concessional funding to reduce the cost of last-mile connections.

Complementary financing mechanisms, including pay-as-you-go models and low-interest credit facilities, should be further strengthened and tailored to the income realities of rural populations.

Equally important is the need to link electrification with productive uses such as irrigation, agro-processing, and small-scale enterprises to enhance household incomes, improve repayment capacity, and ensure the long-term sustainability of energy access interventions.

5. Strengthen Quality Assurance and Market Oversight Mechanisms

Strengthen enforcement of standards set by the Uganda National Bureau of Standards through mandatory certification, routine inspections, and sanctions for non-compliance.

All technologies deployed under Mission 300 should meet clearly defined performance benchmarks and be sourced from pre-qualified and accredited suppliers.

Introducing enforceable warranty requirements and establishing a publicly accessible registry of certified products and vendors will further protect consumers and enhance market transparency. These measures will reduce system failures and prevent the proliferation of substandard products.

6. Safeguard Debt Sustainability through Strategic Financing Choices

Prioritize grants and highly concessional financing with extended grace periods, particularly for investments targeting low-income and low-consumption communities. Where borrowing is unavoidable, financing arrangements should be aligned with realistic revenue projections and supported by rigorous fiscal risk assessments.

Hon. Minister, EGI remains committed to supporting this process and stands ready to provide further technical input, policy analysis, and stakeholder engagement to strengthen implementation.

We welcome continued collaboration with Government and partners to ensure that Mission 300 delivers inclusive, sustainable, and community-driven energy access outcomes for Uganda.

Your Sincerely

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Samuel Okulony,

Chief Executive Officer

Environmental Governance Institute (EGI)