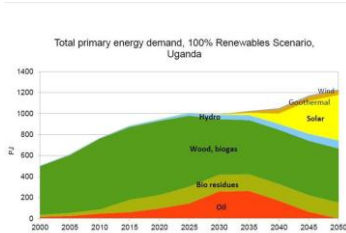


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100% Renewable Energy for Uganda by 2050: Action Needed to Address the Low Energy Demand Growth, Affordability and Uptake



Total Primary Energy Demand, Renewables Scenario for Uganda
(Source: UCSD & INFORSE, 2023)

A recent paper titled: ‘*On the History and Future of 100% Renewable Energy Systems Research*’ published by the Institute of Electrical and Electronics Engineers (IEEE) has indicated that renewable energy systems can power all energy in all regions of the world at low cost. As such, society will not need to rely on fossil fuels in the future. In the early 2020s, there is growing scientific consensus that renewable energy generated by solar panels and wind turbines and the associated infrastructure will dominate the future energy system, and new research increasingly shows that 100% renewable energy systems are not only feasible but also cost effective. This provides the key to a sustainable civilization and the long-lasting prosperity of humankind.

Dr. Marco Rauei Senior Research Fellow at Oxford Brookes University and an expert in energy return on investment in the energy sector has found that inconsistent comparisons between different energy production technologies have led to confusion and inaccurate debate around the viability of renewable energy production as a profitable option. ‘Renewable energy technology is advancing rapidly, increasing the energy return on investment for renewable energy production; conversely, as fossil fuel reserves are depleted, they actually yield a decreasing return on investment as time goes by. Thus, if viewed in simple net energy terms, without even considering the climate change arguments for renewable energy, investing in renewable energy makes better physical and business sense than investing in fossil fuels.’ Marco stresses.

The Government of Uganda approved the Electricity Connections Policy 2018-2027 with a goal to achieve 60% access to electricity in Uganda. The Policy seeks to increase annual connections from 70,000 to 300,000 and increase electricity demand on the main grid by 500MW by 2027. However, low access and utilization of electricity is a major challenge. The limited productive use of electricity especially in rural areas negatively affects demand growth, affordability and uptake. According to Norton Rose Fulbright - NRFC, 2015, biomass is presently the most essential energy source for most of the Ugandan populace, accounting for 90% of energy consumed (firewood: 78.6%, charcoal: 5.6%, crop residues: 4.7%); with a potential annual sustainable yield of around 50 million tons (combining existing wood from existing forests and trees, agricultural residues and proposed new community plantations). But Uganda is endowed with abundant renewable energy potential from other sources. These include wind (mainly in north eastern parts), hydroelectric, solar, peat, geothermal, biomass-based cogeneration, biomass, and biogas. However, hydropower remains the nation’s dominant source for electric energy production with a potential of over 4,100 MW. On the other hand, geothermal possess a potential of 1,500MW, biomass cogeneration a potential 1,650MW, solar energy an average of 5.1 KWh/m².

According to Report (2023) titled: ‘*Uganda 100% Renewable Energy Scenario and Plan by 2050*’, by Uganda Coalition for Sustainable Development (UCSD) and the International Network for Sustainable Energy (INFORSE), the low demand growth compared to planned generation capacity is likely to exert pressure on consumer tariffs. Affordability is also impacted by other factors including pricing that is in turn affected by foreign exchange rate fluctuations, inflation and the performance of energy service providers. Hence, there is an urgent need to address affordability of electricity connections, internal wiring and tariffs. In addition, models for more uptake of clean cooking technologies and options for residential/institutional users for example solar home systems, LPG, biogas and improved cook stoves, for lighting, heating and clean cooking need to be scaled up by Government and development agencies in the wake of Agenda 2030 (SDG7) target and the 2050 timeline. **Read a Policy Brief: Towards 100% Renewable Energy by 2050 for Uganda (February 2023):**

<http://www.ugandacoalition.or.ug/sites/default/files/docs/Final%20Policy%20Brief%20100%25%20Scenario%20and%20Plan%20ver%206022023.pdf>

INFORSE Uganda Members' Call for Climate Resilient Development in Uganda



The Ministry of Water and Environment in collaboration with key Partners organised the fifth Uganda Water and Environment Week 2023 (UWEWK 2023) from March 12 to 17, 2023. The overall theme of UWEWK 2023 was “Water and Environment for Climate-Resilient Development”

As part of the UWEWK2023, UCSD, JEEP and INFORSE Uganda members c/o Nature Palace Foundation developed a joint civil society statement that highlights issues and proposals for better management of Uganda’s water and environment resources in light of the need for a climate resilient, sustainable Uganda.

Climate Resilient Development is about strategies to adapt to climate change with actions to reduce greenhouse gas emissions to support sustainable development for everyone. Action to implement this concept has to start now because making progress is already challenging at current global warming levels.

Hence, the joint CSO statement noted that, ‘the poor management of natural resources including wetlands, forests, land, water, and environment have contributed to climate change with serious implications on agriculture production and productivity, biodiversity, and extreme weather conditions characterised by severe floods and prolonged drought which affect macroeconomic variables such as economic growth and inflation (MWE / Natural Resources, Environment, Climate Change, Land and Water Management Programme Performance Report, 2022)’.

But as noted by Intergovernmental Panel on Climate Change (IPCC WGII) Report, ‘Climate Resilient Development offers us ways to drive change to improve well-being for all – by reducing climate risk, tackling the many inequities and injustices experienced today, and rebuilding our relationship with nature. Action to implement this concept has to start now because making progress is already challenging at current global warming levels.’

Among the issues raised, the joint CSO statement highlighted the lack of clear boundaries for some protected areas (forest reserves and wetlands) that has made it difficult to protect riverbanks from encroachers as many acquired land within the protection zone and claim lack of knowledge of the physical boundaries for riverbanks. The CSOs further noted that water governance (the political, social, economic, and administrative systems that influence the use and management of water) across sectors has steadily improved due to better sector coordination led by the Ministry of Water and Environment. However, INFORSE Uganda members point out that this is not the case for the different actors and livelihood interventions with varied objectives and performance targets, which promote projects with no or less consideration of local communities’ interests. This particularly impacts on the poor, women, youths, the disabled and other vulnerable persons in the long-run. For example, small scale irrigation and sand and artisanal mining projects need to be regularly inspected to secure that they do not cumulatively result in water misuse or overuse at the detriment of other users and the micro-catchments.

The INFORSE Uganda members’ statement called on the Ministry of Water and Environment, other Line Ministries, Departments & Agencies to fully enforce provisions of the National Environment Act (2019), other existing laws, regulations and policies to deter the environmental abuse that is aggravating climate change impacts. The statement also called on the Ministry, other Line Ministries, Departments and Agencies to develop guidelines for private entities and livelihood programmes to protect local catchments (wetlands and forests) especially on private lands. For example, this will concretely contribute to restraint on wetlands loss that needs to be reversed, by restoring 293km² every year (Ministry of Water, 2022).

INFORSE Uganda is part of INFORSE Network that consisting of 140 NGOs working in about 60 countries to promote sustainable energy and social development. **Read the full INFORSE Uganda Member’s Statement to the Uganda Water and Environment Week 2023 (UWEWK2023):** <https://www.scribd.com/document/630598266/INFORSE-Uganda-Members-Joint-Statement-to-UWEWK2023>

Fisheries Research Institute launches Portal on National Red list for Fishes of Uganda



Launch of the Portal in Kampala on 22.3.2023
Photo: Nafirri

Fish are important resources for food in Uganda and they are rich in biodiversity in lakes and other freshwater ecosystems. Keeping track of fish populations and managing threats require monitoring of fish populations and diversity over time. Without understanding trends of freshwater biodiversity, it is difficult for decision-makers for conservation and fisheries resources to make informed decisions for protection and extraction (JRS, 2023). The International Union for Conservation of Nature (IUCN) Red List of Ecosystems is one such a tool to assess the conservation status of ecosystems.

The national red list is a comprehensive information source on the extinction risk and conservation status of fishes of a country. The list can be used by the public, government agencies, development partners, academia, and all conservation organizations. For government and development conservation measures into plans meet environmental and social scientific criteria for performing evidence-based analyses of the risk of ecosystem collapse, including changes in geographical distribution and the degradation of the key elements of ecosystems. The main purpose is to provide information to help catalyse and inform conservation action in order to prevent species extinctions as development happens, rather than to merely documenting extinctions. Redlists are intended to be widely used and accessible, providing a common reference language with which to discuss and quickly understand the relative threat status of specific species in a country and that is compatible with language widely referred to with regard to conservation internationally. Previous work on National Red List for Uganda has been concentrated on Mammals, Birds, Reptiles, Amphibians, Butterflies, Dragonflies and Vascular Plants (WCS, 2016).

‘Many people do not know this diversity’

example, the list can guide partners to incorporate fish of their development projects to standards (ESSs). It is based on

On March 21, 2023, the National Fisheries Resources Research Institute (NaFIRRI) with support from JRS Biodiversity Foundation, Busitema University, Global Biodiversity Information Facility and NUGSOFT, launched a Portal on the first National Red list for Fishes of Uganda that aim to present the underlying science, policy implications, and opportunities for conservation, advocacy and research. Speaking at the occasion, Dr. Winnie Nkalubo (Director NaFIRRI) highlighted the threats to freshwater biodiversity including pollution, introduction of alien invasive species and other human-induced actions.

She added that this first redlist for freshwater fishes of Uganda is a major contribution to highlight the diversity that the country is set to lose if no action is taken. ‘Many people do not know this diversity’, she emphasized. Indeed the major commercial fish species – Nile Perch, Nile Tilapia and Silverfish are the main ones known by many people, though Uganda has up to 300 species, some of which are considerably in decline due to human induced stresses on their habitats.

The Acting Director for Fisheries Resources, in the Ministry of Agriculture, Animal Industry and Fisheries - Mr. Tom Mukasa Bukenya, noted that the Portal is important as a source of information to inform fisheries management in Uganda in terms of regulations, statutory instruments for the recently enacted Fisheries and Aquaculture Act (2023). He called upon scientists to unpack this information for policy makers and ordinary people to understand it well, and perhaps create an atlas of fishes of Uganda to help in this regard.

One of the lead authors of the Portal, Mr Laban Musinguzi noted that the lists are not exhaustive, but provide an indication of the trends in fisheries conservation. He added that the Portal can be a useful tool for site-based conservation, can contribute to improvement in quality of the Environmental Impact Assessment Reports and to effective conservation tools such as biodiversity offsets. His co-Author, Dr. Vianney Natugonza warned that aquaculture biodiversity faces numerous complex and increasing threats, while current conservation efforts are not up to the mark to counter them. He noted that country specific threats are often missed in global assessments; hence this Portal will contribute to close this gap. **More about the Freshwater Biodiversity Portal for Uganda:** <https://freshwaterbiodiversity.go.ug/>