



## COMMUNITY PROPOSALS TO PROMOTE AN INCLUSIVE AND JUST ENERGY TRANSITION IN UGANDA



NOVEMBER 2024



## Summary

To address the climate crisis and promote universal access to modern energy in line with the Sustainable Development Goal (SDG) 7, the Ugandan government has put in place a number of policies, laws and plans.

Among these is the Energy Transition Plan (ETP), which was launched by Uganda's Minister of Energy in December 2023. Among others, the plan is aimed at guiding Uganda's efforts to promote a transition to modern energy.


Other stakeholders including development partners, civil society organisations (CSOs), the private sector and others are also promoting a just energy transition (JET). But, what does a JET mean for communities?

In April 2024, Africa Institute for Energy Governance (AFIEGO) conducted a community energy visioning exercise covering seven districts including Buliisa, Hoima, Kakumiro, Kikuube, Kyotera, Lwengo and Rakai in Uganda.

The purpose of the exercise was to understand the energy that communities aspire towards using in the context of the JET. Through the exercise, AFIEGO also sought to understand the barriers that communities face in accessing clean energy and the solutions that they propose to address those barriers.

Through this report, AFIEGO summarises what a JET means for communities and the recommendations they make to enable the clean energy transition.

The objective of this summary report is to enhance stakeholder awareness of community aspirations for a JET to support government and others' efforts to promote universal access to clean energy and take climate action.



Before assessing what community aspirations for a clean JET are, we asked the communities to share the lighting, cooking and productive energy that they currently use. The communities identified kerosene lamps, candles, solar and grid power as their most used forms of lighting energy. Cell torches are also used.


When it comes to cooking energy, firewood is the most used, followed by charcoal and grid power. Biogas, LPG and kerosene stoves are used as well.

In terms of productive use, grid power followed by fossil fuels including diesel or petrol as well as solar and firewood are the most used.

Asked to envision the future and define the types of lighting, cooking and productive energy that the communities would want to use, the communities identified grid power as their most preferred type of lighting energy. This is followed by off-grid solar. The communities indicated that off-grid solar would have been their most preferred if it were not for counterfeit products that mar customer experience, as well as the high initial purchase cost for good quality solar technologies.

In terms of cooking energy, the communities expressed a preference for charcoal, followed by biogas and firewood after which grid power and gas follow. The communities noted that they were aware of the negative impacts that the use of charcoal and firewood has on the environment, and on women's health. However, efficient affordable alternatives are not easily accessible.

Gas, which is a fossil fuel that contributes to climate change, has also been publicised by the Ugandan government as an alternative fuel, driving its preference by communities.



For productive use, the community leaders expressed a preference for grid power followed by solar and diesel/petrol, after which biogas and firewood follow.

The community leaders observed that they were aware of the negative impacts of continued reliance on firewood, charcoal, diesel, petrol and gas on the climate, environment, their livelihoods and women's health.

However, they observed that the following challenges were undermining their use of cleaner forms of energy. It is the same challenges that made it difficult for communities to envision an energy future that is based solely on clean energy.


The challenges are: expensive grid power; unreliable grid electricity; and quack electricians that cheat customers. Others include counterfeit solar batteries; lack of durability of off-grid solar products; and bad weather that limits the capacity of offgrid solar.

Yet others include: technical challenges relating to off-grid solar products; maintenance challenges of off-grid solar products; and the nature of local houses that do not support grid or off-grid electrification.

The communities observed that a JET would be enabled if government ensured access to off-grid and grid power, lower power prices and reliable grid electricity. Further, the communities observed that a JET would be enabled if the off-grid solar sector was better regulated to address the challenge of counterfeit products and if solar products were subsidised.

Government and its partners should implement the above recommendations. Further, civil society and other actors should increase community sensitisation efforts on available





clean energy alternatives to enhance their uptake by communities.

## **1. Introduction and background**

Uganda and the world at large today are faced with an existential crisis: that of global warming and consequently, climate change. Per available information, the world has warmed by “at least 1.1° Celsius (1.9° Fahrenheit) since 1880” .

In Uganda, average temperatures have increased by 1.3° Celsius since the 1960s with the average temperature rising a rate of 0.23° Celsius per decade. Uganda is expected to continue experiencing increases in average temperatures and rainfall<sup>3</sup> if no action is taken to address the climate crisis.

Available information shows that the impacts of climate change have been dire. For instance, the world has experienced a loss of 20% in agricultural productivity due to climate change. Further, globally, climate change-induced infrastructural damage has cost countries up to \$845 billion per year .


The ultimate cost is that of human life. Per available information, 2 million deaths occurred globally between 1970 and 2021 due to climate disasters .

Scientists have warned that the impacts of climate change could get worse with agricultural productivity, food prices, human health, public infrastructure and others taking a hit due to climate disasters.

Worryingly, women and children are expected to bear the

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<sup>1</sup> NASA: <https://earthobservatory.nasa.gov/world-of-change/global-temperatures>



brunt of the climate crisis. Children born in 2020 are expected to experience 2 to 7 more extreme weather events than their grandparents, while women who consist the majority of the poor population in the world, and who are largely responsible for food production, are vulnerable to climate change impacts.

## **2. Energy transition and climate action in Uganda**

Because of the immense risks posed by climate change to humanity, various states including Uganda are taking climate action. The burning (use) of fossil fuels has been identified as the biggest contributor to climate change with the fuels accounting for 75% of greenhouse gas emissions, and 90% of carbon emissions<sup>2</sup>.

Consequently, various countries have put in place plans to guide their transition from the use of fossil fuels to clean energy to prevent the worst impacts of climate change. In Uganda, government launched the country's Energy

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<sup>2</sup> World Bank:

<https://climateknowledgeportal.worldbank.org/sites/default/files/2020-06/15464->

[WB Uganda%20Country%20Profile-WEB v1.pdf](#)

<sup>3</sup> Uganda Ministry of Water and Environment:

<https://unfccc.int/sites/default/files/NDC/202209/Updated%20NDC%20Uganda%202022%20Final.pdf>

<sup>4</sup> Cornell University: [https://news.cornell.edu/stories/2024/01/report-warmer-planet-will-trigger-](https://news.cornell.edu/stories/2024/01/report-warmer-planet-will-trigger-increasedfarmlosses#:~:text=%E2%80%9CGlobally%2C%20we've%20found,been%20without%20anthropogenic%20climate%20change.%E2%80%9D)

[increasedfarmlosses#:~:text=%E2%80%9CGlobally%2C%20we've%20found,been%20without%20anthropogenic%20climate%20change.%E2%80%9D](#)

<sup>5</sup> Context News: <https://www.context.news/climate-risks/climate-change-infrastructure-damage-poses-hugefinancial-risk>

<sup>6</sup> Al Jazeera: <https://www.aljazeera.com/news/2023/5/22/climate-change-causes-2m-deaths-in-50-years-poor-suffer-most-un>

Table 2-1: Results from the vulnerability and risk assessment, by sector

Sector	Vulnerability Rating	Risk Rating
Agriculture (crop and livestock)	4.81	4.18
Built Infrastructure	3.27	3.83
Business	3.75	4.08
Energy (Excluding transport)	3.40	3.40
Fisheries	3.00	4.08
Forestry	3.25	4.28
Health	3.67	3.33
Manufacturing	3.00	3.00
Mining and Quarrying	3.00	4.08
Transport	3.20	3.80
Water	4.63	4.75
Ecosystems	5.00	5.00

The vulnerability and risk scores were provided as 1= (least vulnerable, less risk) to 5= (most vulnerable, high risk).



***Women are more vulnerable to climate change impacts, while key economic sectors in Uganda are also vulnerable.***

Transition Plan in December 2023. The ETP, which is described as a “strategic roadmap for the development and modernisation of Uganda’s energy sector” is aimed at charting “an ambitious, yet feasible pathway to achieve universal access to modern energy and power [Uganda’s] economic transformation ...”<sup>10</sup>


Worth noting is that Uganda is seeking to reduce its emissions from the energy sector by 6.36% and those from the transport sector by 7.56%. Uganda’s transport sector is largely fuelled by fossil fuels such as petrol and diesel, which contribute to climate change.

Further, about 16% of Ugandans rely on paraffin to meet their lighting energy needs while others use it for cooking . The majority of Ugandans also rely on biomass including firewood and charcoal to meet their cooking energy needs<sup>11</sup>.

Through the ETP and 2022 Nationally Determined

<sup>7</sup> Save the Children: <https://www.savethechildren.net/Climate-Crisis-Impact-Children>

<sup>8</sup> United Nations: <https://www.un.org/en/chronicle/article/womenin-shadow-climate-change>



Contributions (NDCs), government has set the following targets to enable a just energy transition in Uganda: ensure access to clean energy, increase electricity access by 75% by 2030, increase clean cooking to 65% by 2030 and reduce biomass use for cooking to 40% by 2030.

### **3. Communities and a Just Energy Transition**

Government has set its targets as stated above, but what does a clean and just energy transition for communities look like? This is a question that AFIEGO posed to community leaders from seven districts in Uganda during community visioning exercises that were undertaken in April 2024.

Through the community visioning exercises, the community leaders from Buliisa, Hoima, Lwengo, Kakumiro, Kikuube, Kyotera and Rakai discussed the energy that the communities they lead currently use and that they aspire towards using. The community leaders also shared the barriers that the communities face in accessing the energy options that they aspire towards using, and solutions to address those barriers. This report relays the above discussions.

### **4. Uganda's energy landscape**

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<sup>9</sup> United Nations: <https://www.un.org/en/climatechange/science/causes-effects-climatechange#:~:text=Fossil%20fuels%20%E2%80%93%20coal%2C%20oil%20and,they%20trap%20the%20sun's%20heat>.

<sup>10</sup> Energy Transition Plan: <https://iea.blob.core.windows.net/assets/f07d075d-de48-4967-a8c84806c7247eb7/UgandaEnergyTransitionPlan.pdf>



***Some community leaders from the Greater Masaka and Bunyoro sub-regions during the energy visioning exercises in April 2024***

Before discussing the energy that the communities that AFIEGO engaged for this report aspire towards using, it is important to discuss Uganda's energy landscape.

Uganda is described as being energy poor by the country's Ministry of Energy and Mineral Development. The country has low electricity access levels with available information showing that grid connections stand at 24%<sup>13</sup>.

In 2018, off-grid solar connections stood at 38%<sup>14</sup>. Grid power remains expensive with Uganda having the tenth highest tariff in Africa<sup>15</sup>. Further, grid power is unreliable with Uganda being ranked sixth in Africa in an index showing countries that had the least reliable power supply in 2019/2021<sup>16</sup>.

Further, at 15%, clean cooking rates are low. Worth noting is that over 90% of Uganda's population relies on biomass (firewood and charcoal) to meet their cooking energy needs, with over 85% relying on firewood and 13% relying on charcoal.

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<sup>11</sup> Uganda Bureau of Statistics: [https://www.ubos.org/wp-content/uploads/publications/09\\_2021UgandaNational-Survey-Report-2019-2020.pdf](https://www.ubos.org/wp-content/uploads/publications/09_2021UgandaNational-Survey-Report-2019-2020.pdf)

Lack of access, high power prices and unreliable power supply among others continue to deny Ugandan citizens access to clean energy.

But, what is the experience of communities?



***An electricity user complains about a power outage on X, formerly Twitter***


## **5. Communities' current energy situation**

The energy situation of the communities that we engaged for this report is reflective of that of the national state. During the community visioning exercise, the communities were asked to share the forms of lighting, cooking and productive use energy that they use. The table below contains their responses.

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<sup>12</sup> Energia: [https://www.energia.org/assets/2021/02/Country-brief-Uganda\\_Nov2020\\_final.pdf](https://www.energia.org/assets/2021/02/Country-brief-Uganda_Nov2020_final.pdf)

<sup>13</sup> Uganda Bureau of Statistics: [https://www.ubos.org/wp-content/uploads/publications/09\\_2021UgandaNational-Survey-Report-2019\\_-2020.pdf](https://www.ubos.org/wp-content/uploads/publications/09_2021UgandaNational-Survey-Report-2019_-2020.pdf)



No	District	Lighting energy	Cooking energy	Productive use energy
1.	Buliisa	<ul style="list-style-type: none"> <li>• Candles</li> <li>• Kerosene</li> </ul>	<ul style="list-style-type: none"> <li>• Firewood</li> </ul>	<ul style="list-style-type: none"> <li>• Solar</li> </ul>
2.	Hoima	<ul style="list-style-type: none"> <li>• Solar</li> <li>• Kerosene</li> <li>• Grid</li> <li>• power</li> </ul>	<ul style="list-style-type: none"> <li>• Firewood</li> <li>• Charcoal</li> </ul>	<ul style="list-style-type: none"> <li>• Diesel/petrol</li> <li>• Grid power</li> </ul>
3 4.	Kakumiro & Kikube	<ul style="list-style-type: none"> <li>• Solar</li> <li>• Grid power</li> <li>• Torches</li> </ul>	<ul style="list-style-type: none"> <li>• Charcoal</li> <li>• Firewood</li> <li>• Gas</li> <li>• Coils/</li> <li>• Hydropower</li> </ul>	<ul style="list-style-type: none"> <li>• Diesel/petrol</li> <li>• Firewood</li> <li>• Solar</li> <li>• Grid power</li> </ul>
5.	Kyotera	<ul style="list-style-type: none"> <li>• Solar</li> <li>• Grid power</li> </ul>	<ul style="list-style-type: none"> <li>• Firewood</li> <li>• Charcoal</li> <li>• Grid power</li> </ul>	<ul style="list-style-type: none"> <li>• Diesel</li> <li>• Grid power</li> </ul>
6.	Lwengo	<ul style="list-style-type: none"> <li>• Grid power</li> <li>• Solar</li> <li>• Candles</li> <li>• Kerosene lamps</li> </ul>	<ul style="list-style-type: none"> <li>• Firewood</li> <li>• Charcoal</li> <li>• Grid power</li> <li>• Biogas</li> <li>• Kerosene stoves</li> </ul>	<ul style="list-style-type: none"> <li>• Grid power</li> </ul>
7.	Rakai	<ul style="list-style-type: none"> <li>• Candles</li> <li>• Kerosene lamps</li> </ul>	<ul style="list-style-type: none"> <li>• Firewood</li> <li>• Charcoal</li> </ul>	<ul style="list-style-type: none"> <li>• Diesel</li> <li>• Grid</li> <li>• power</li> </ul>

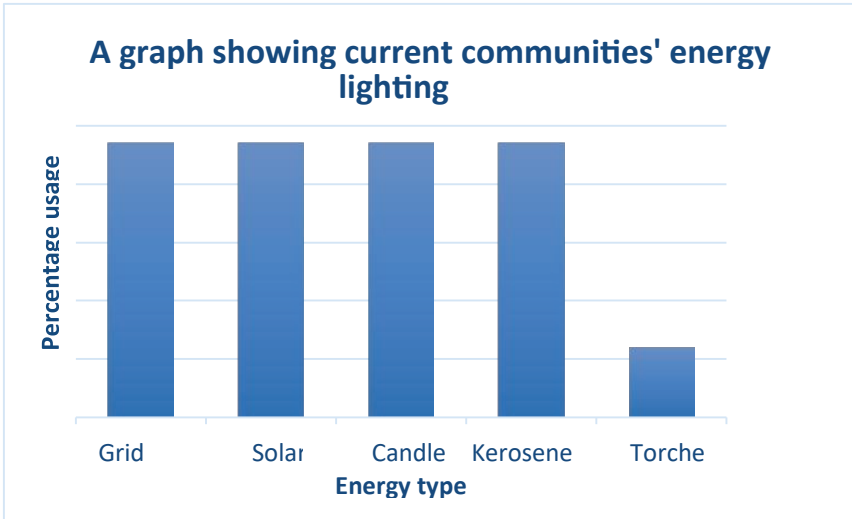
<sup>14</sup> Statista: <https://www.statista.com/statistics/1277594/household-electricity-prices-in-africa-bycountry/#:~:text=Cabo%20Verde%20recorded%20the%20highest%20electricity%20price%20for%20household s%20in%20Africa.>

<sup>15</sup> Statista: <https://www.statista.com/statistics/1315301/countries-with-the-least-reliable-supply-of-electricityin-africa-2019-2021/>

<sup>16</sup> IGE:

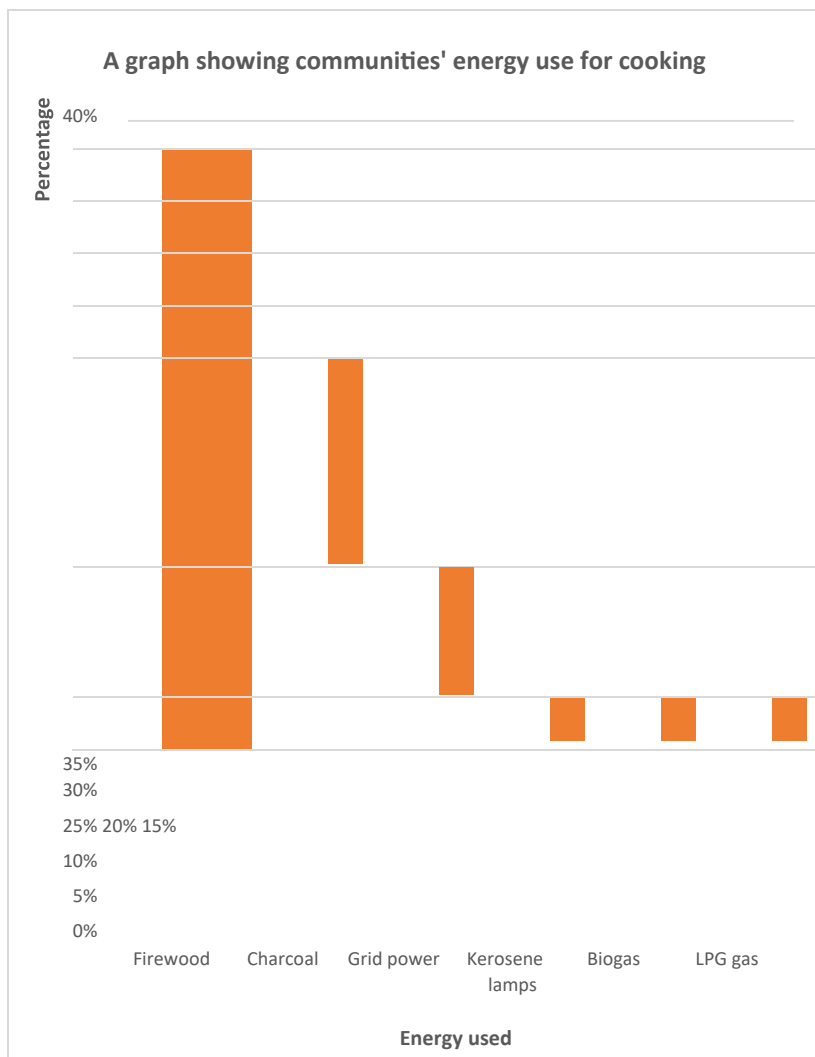
[https://www.efdinitiative.org/sites/default/files/publications/Policy%20Brief\\_Biomass\\_EfDMak%202024.pdf](https://www.efdinitiative.org/sites/default/files/publications/Policy%20Brief_Biomass_EfDMak%202024.pdf)



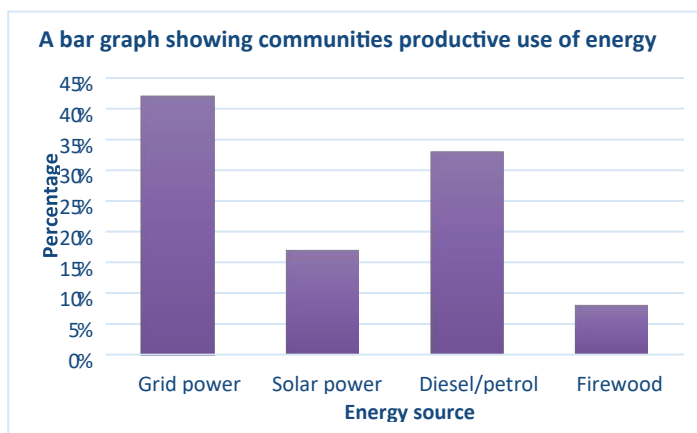


The above figures show that kerosene lamps, candles, solar and grid power are the most used forms of lighting energy. Cell torches are also used.

When it comes to cooking energy, firewood is the most used, followed by charcoal and grid power. Biogas, LPG and kerosene stoves are used as well. More can be seen below.



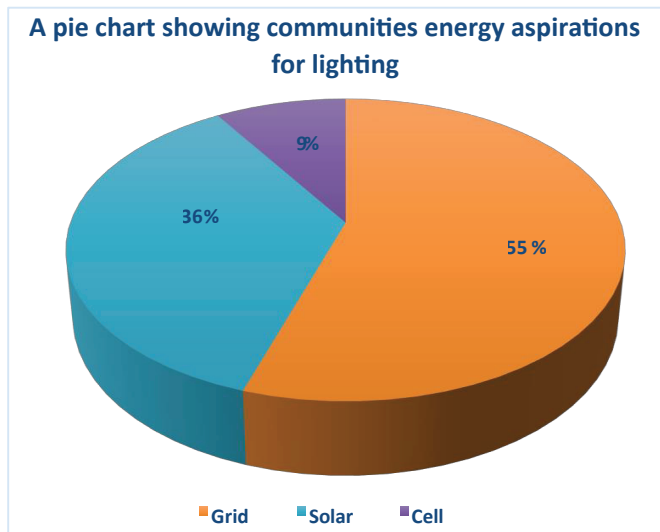
In terms of productive use, grid power followed by fossil fuels including diesel or petrol as well as solar and firewood are the most used. More can be seen in the graph below.



## 6. Energy communities aspire towards

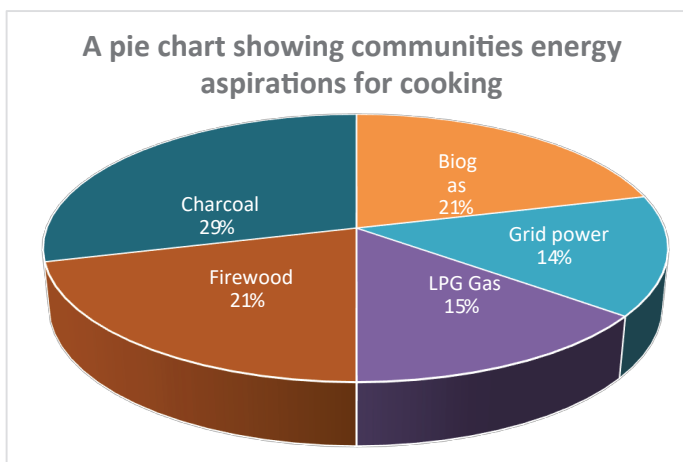
As earlier indicated, the community leaders were also asked to share the energy that their communities aspire towards using. The following are the types of energy that were shared.

No.	District	Lighting energy	Cooking energy	Productive use energy
1.	Buliisa	<ul style="list-style-type: none"> <li>Grid power</li> <li>Solar</li> </ul>	<ul style="list-style-type: none"> <li>Biogas</li> <li>Grid power</li> <li>Gas</li> </ul>	<ul style="list-style-type: none"> <li>Grid power</li> <li>Solar</li> <li>Biogas</li> </ul>
2.	Hoima	<ul style="list-style-type: none"> <li>Grid power</li> <li>Solar</li> </ul>	<ul style="list-style-type: none"> <li>Grid power</li> </ul>	<ul style="list-style-type: none"> <li>Grid power</li> <li>Diesel/petrol</li> </ul>
			<ul style="list-style-type: none"> <li>Gas</li> <li>Firewood</li> <li>Charcoal</li> </ul>	
3& 4.	Kakumiro & Kikuube	<ul style="list-style-type: none"> <li>Grid power</li> <li>Solar</li> <li>Cell torches</li> </ul>	<ul style="list-style-type: none"> <li>Charcoal</li> <li>Firewood</li> </ul>	<ul style="list-style-type: none"> <li>Grid power</li> <li>Solar</li> <li>Diesel/petrol</li> <li>Firewood</li> </ul>
5.	Kyotera	<ul style="list-style-type: none"> <li>Grid power</li> </ul>	<ul style="list-style-type: none"> <li>Charcoal</li> </ul>	<ul style="list-style-type: none"> <li>Grid power</li> </ul>
6.	Lwengo	<ul style="list-style-type: none"> <li>Grid power</li> <li>Solar</li> </ul>	<ul style="list-style-type: none"> <li>Firewood</li> <li>Charcoal</li> <li>Bio gas</li> </ul>	<ul style="list-style-type: none"> <li>Grid power</li> </ul>
7.	Rakai	<ul style="list-style-type: none"> <li>Grid power</li> </ul>	<ul style="list-style-type: none"> <li>Bio gas</li> </ul>	<ul style="list-style-type: none"> <li>Grid power</li> </ul>

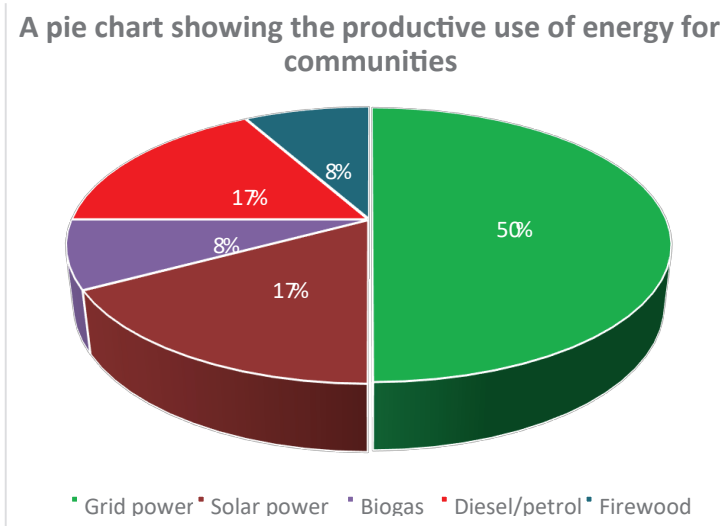


The above figures show that the most preferred type of lighting energy by communities is grid power. This is followed by solar.

In terms of cooking energy, the communities expressed a preference for charcoal, followed by biogas and firewood after which grid power and gas follow. This is shown in the pie chart below.



For productive use, the community leaders expressed a preference for grid power followed by solar and diesel/petrol, after which biogas and firewood follow. This is shown in the pie chart below.



The community leaders observed that they were aware of the negative impacts of continued reliance on firewood, charcoal, diesel, petrol and gas on the climate, environment, their livelihoods and especially women's health.

However, they observed that the following challenges were undermining their use of cleaner forms of energy. It is the same challenges that made it difficult for communities to envision an energy future that is based solely on clean energy.

The challenges are:


- Expensive grid power;
- Unreliable grid electricity;
- Quack electricians that cheat customers;

- Counterfeit solar batteries;
- Lack of durability of off-grid solar products;
- Bad weather that limits the capacity of off-grid solar;
- Technical challenges relating to off-grid solar products;
- Maintenance challenges of off-grid solar products; and
- The nature of local houses that do not support grid or off-grid electrification.

## 7. What a Just Energy Transition (JET)

Community leaders from the Bunyoro and Greater Masaka sub-regions painted a picture of what a JET would look like for them. They observed as follows:

- **A JET is one where grid power is accessible.** This necessitates extension of the grid to all corners of the country especially in rural areas, which have limited access. Worth noting is that the 2019/2020 Uganda National Household Survey by Uganda Bureau of Statistics (UBOS) notes that households, especially rural ones, are encumbered from using grid power due to accessibility challenges. UBOS notes, "Overall, six in every ten households are not using grid electricity for lighting because the grid is too far from their households or is not available in their localities."
- **Further, a JET would necessitate lowering power prices to make them affordable.** Communities would like to see electricity prices reduced to allow them use it for cooking, lighting and productive work. Currently electricity tariffs are high, making power unaffordable for many households, especially in rural areas. As already indicated in this publication, Uganda has the tenth highest tariff in Africa<sup>14</sup>.
- **In addition, a JET would require ensuring access to reliable power.** Power outages, blackouts and occasional load-shedding see Ugandans suffer unreliable power



supply, so much so that Uganda is ranked sixth in Africa in an index showing countries that had the least reliable power supply in 2019/2021<sup>15</sup>. Unreliable power supply disrupts businesses.

- **Further, communities would want energy policies and regulation of the off-grid sector strengthened to address the challenges of counterfeit solar products.** In April 2021, the Uganda National Bureau of Standards (UNBS) indicated that 70% of the solar energy products sold in Uganda are sub-standard. Communities want improved regulations and enforcement to enhance the off-grid solar energy experience.

- **For communities, attainment of a JET would necessitate the provision of subsidies for off-grid solar technologies.** Communities want government to provide free solar off-grid technologies for the most vulnerable, while reducing prices for others. This can be done by further reducing taxes on off-grid solar technologies.


- **Communities want the national clean-cooking strategy under development to cover as many technologies** and consumer categories as possible. They also want the strategy to address challenges such as limited access to efficient and affordable clean cooking technologies which are also culturally-appropriate.

- **Finally, communities acknowledge that they have limited knowledge on** clean energy options and they would like more sensitisation to increase the uptake of clean energy. Communities also want environmental

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<sup>17</sup> The Independent: [https://www.independent.co.ug/unbs-in-nationwide-standards-awareness-drive-to-curbfake-solarproducts/#:~:text=In%20its%202020%20survey%20report,IEC\)%20and%20Lighting%20Global%20Standards.](https://www.independent.co.ug/unbs-in-nationwide-standards-awareness-drive-to-curbfake-solarproducts/#:~:text=In%20its%202020%20survey%20report,IEC)%20and%20Lighting%20Global%20Standards.)





conservation to be integrated in the JET with trees being planted to promote climate action.

Communities in Uganda are desirous of an energy system that meets their clean energy needs. They want this system to provide accessible, reliable and affordable grid power. More so, they want government to subsidise the cost of off-solar technologies and to put in place relevant policies while enhancing regulation to address challenges such as sub-standard off-grid solar technologies that undermine clean energy uptake.

The communities are also desirous of sensitisation to enhance their awareness of available clean energy alternatives. Because of limited awareness, the communities continue to envision a future where biomass and fossil fuels play a role in meeting their energy needs. With increased awareness of available clean energy alternatives, community uptake would increase.



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