

Looking for electricity markets

Uganda's surplus power

Uganda's power generation drive has already resulted in a significant supply surplus. According to Electricity Regulatory Authority (ERA), installed capacity reached 2,048 megawatts by December 2024, while peak demand stood at just 985 megawatts, leaving a surplus of 1,063 megawatts.

This has largely been driven by the completion of the 600 megawatt Karuma Hydropower Dam, which became fully operational in September 2024 after years of delays.

The project is Uganda's largest hydropower investment to date and positions the country as a potential regional energy exporter.

However, analysts warn that the surplus may be short-lived. Energy sales are growing at an estimated 17 percent annually, and industrial consumers continue to face challenges linked to transmission and distribution bottlenecks.

Electrification gap persists

Despite progress, access to electricity remains uneven. Uganda still has one of the lowest electrification rates in Africa, with heavy reliance on biomass and limited off-grid solutions.

While 76.4 percent of urban households have access to electricity, rural access stands at 42.4 percent, bringing the national average to 51.5 percent.

Transmission expansion has exceeded targets, with 4,962 kilometres of power lines in place by December 2024, surpassing the 2025 goal of 4,354 kilometres.

Nonetheless, infrastructure constraints mean that some generated power cannot be fully delivered to consumers, while system losses stood at 17 percent in 2024.

Ambitious targets ahead

Looking ahead, Uganda's energy sector aims to scale installed capacity from the current 2,000 megawatts to about 52,000 megawatts by 2040.

Mutetweka says the target, while ambitious, is grounded in global benchmarks for per capita electricity consumption.

"Ugandans deserve the same access to power as people anywhere else," he says. "This is not a dream, it's a goal."

As the sector evolves, future growth will depend not only on government investment, but also on private participation, regional cooperation, and sustained accountability.

For businesses, communities, and investors, the opportunities are significant, provided they are ready to seize them.



The evolution of Uganda's power sector has moved from Uganda Electricity Board (UEB) to the current unbundled structure, which UEGCL highlights as a major milestone in the power generation sector. PHOTO / FILE

Uganda eyes markets beyond borders to supply surplus power

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The electricity generation subsector is positioning itself for a new phase of growth.

Marked by regional integration, private investment, and stronger accountability, the power sector is looking for markets to supply surplus electricity as well as use it as leverage for expanding capacity and modernizing the power market.

George Tusingwire Mutetweka, the chief operations officer of Uganda Electricity Generation Company Limited (UEGCL), says they have outlined the sector's progress and future direction while representing. The evolution of Uganda's power sector has moved from Uganda Electricity Board (UEB) to the current unbundled structure, which Mutetweka highlights as a major milestone in power generation.

From the commissioning of Kiira and Isimba dams to the development of Karuma and smaller hydropower plants such as Nyagak, Uganda has steadily expanded its generation capacity. "These projects have strengthened domestic supply and enhanced cross-border power trade," Mutetweka says, pointing to regions such as West Nile, where communities straddle Uganda and DR Congo.

Demand imbalance

Despite increasing capacity, Mutetweka says Uganda's electricity demand profile still reflects a developing economy.

Power consumption peaks sharply between 6pm and 10pm, largely driven by household use rather than industrial activity.

"That difference tells you we are still a developing country. In advanced economies, factories run 24/7, keeping demand steady. Here, our capacity planning is driven almost entirely by evening demand," Mutetweka says.

To address this imbalance, Uganda is exploring innovative investment models to stimulate industrial consumption.

Mutetweka cites examples from US, where Public District Utilities allow

Changing dynamics
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farmers and cooperatives to finance power plants by securing long-term industrial off-takers such as aluminum smelters or data centres.

He says similar approaches could enable Ugandan communities and private investors to participate directly in generation, particularly as demand grows for energy-intensive infrastructure such as data centres, electric vehicles, and manufacturing hubs.

Regional opportunities
Uganda is also preparing to join the East African Power Pool, a regional electricity market that will enable countries stretching from DR Congo to Egypt to trade power as a commodity.

"Power is becoming like sugar or fuel; it is no longer just a service," Mutetweka says. "Anyone who understands the market can invest and participate."

He urges stakeholders to familiarize themselves with the emerging market structures, noting that regional integration could significantly enhance Uganda's role as a power exporter.

Accountability and safety

Beyond capacity expansion, Mutetweka emphasizes accountability, safety, and transparency as central to the sector's sustainability.

He credits media engagement for keeping the industry responsive to public concerns and praises UEGCL for maintaining high safety standards.

"In 2025, we recorded zero fatalities among staff and contractors," he says.

Key takeaways

- From the commissioning of Kiira and Isimba dams to the development of Karuma and smaller hydropower plants such as Nyagak, Uganda has steadily expanded its generation capacity.

- Uganda is also preparing to join the East African Power Pool, a regional electricity market that will enable countries stretching from DR Congo to Egypt to trade power as a commodity.

- Looking ahead, Uganda's energy sector aims to scale installed capacity from the current 2,000 megawatts to about 52,000 megawatts by 2040.