BUSINESS

OVER 780 TOWERS CANNOT OPERATE DUE TO LACK OF ELECTRICITY

TELECOM, POWER SECTORS JOIN EFFORTS TO IMPROVE CONNECTIVITY

Telecoms play a vital role in development

By Ali Twaha

Telecom sector operators can build towers, install antennas and buy spectrum, but without electricity, the network simply does not function.

Only a quarter of Uganda has access to hydroelectric power, the most affordable and reliable source for running telecom infrastructure.

Uganda's current approach treats power and telecoms as parallel sectors. One builds poles and wires, the other raises towers and antennas. The industry data suggests this separation is becoming costly for every stakeholder.

According to data published by the Uganda Communications Commission (UCC), power-related expenses in the telecom sector are an estimated $6m (about sh21.6b) per year. That figure reflects fuel, maintenance and the logistics of keeping thousands of sites running far from the grid.

Each tower must carry its own small power plant, often a combination of transformers, solar arrays and backup generators. Setting this up costs between $60,000 (sh216m) and $270,000 (sh972m) per site, a heavy upfront burden in a low-income market where average revenue per user is modest.

A stakeholder dialogue organised by UCC and American Tower Corporation (ATC Uganda) in Kampala recently resolved to make telecom a priority in national electrification strategies. It also resolved to establish a joint task force to streamline collaboration between the energy and telecom sectors.

Other interventions seek to catalyse private sector investment in rural energy solutions, optimise investment and avoid duplication.

Uganda has more than 780 network-ready towers that cannot operate because they have no electricity, UCC data shows. Steel stands in the ground; radios are installed, but the switch is never flipped.

The Minister of Energy and Mineral Development, Ruth Nankabirwa, switching on a light during the launch of Electricity Access Scale-up Project in Katakwi district on February 13, 2024. The NDP IV sets national electricity access target to 100%

Dorothy Ssemanda, the ATC Uganda chief executive, said the company's investment between 2012 and the present has resulted in a 2,000km extension of the national grid.

"It is no mystery that when we work together to extend the grid, there will inevitably be an increase in digital access and activity. If we align our priorities and resources, Uganda can leap ahead," she said.

"Provide capital subsidies, including tax incentives and rebates, to infrastructure companies like ATC and mobile network operators supporting grid extensions. In addition, continuously work with the Electricity Regulation Authority to strengthen and streamline the existing rebate mechanism in regulation."

INFRASTRUCTURE SHARING
Instead of each operator building and powering its own tower, telecom companies are increasingly partnering with independent tower firms. These companies own and manage sites that multiple operators can use.

Telecom players say sharing reduces capital and maintenance costs, speeds up rollout in rural areas and limits the environmental damage of duplicating towers and generators.

But sharing towers alone does not solve the electricity problem. A shared mast still needs power. This is where closer collaboration with the electricity sector becomes unavoidable.

"Powering towers directly powers communities. It touches education, health and livelihoods. This is not a luxury, it is a necessity," Eng. Ziria Tibalwa Waako, the CEO of the Electricity Regulatory Authority (ERA), said.

Sector players say co-ordinating tower locations with grid expansion would reduce the number of sites that rely entirely on diesel or solar. Even partial grid access, supplemented by renewables, would lower operating costs and improve reliability.

The Government's strategic

ELECTRIFICATION, TELECOM INTERTWINED

With an electricity coverage of around 76%, Kenya has about 64% of its population using mobile services. Uganda, with electricity reaching just 25% of the country, records mobile usage of roughly 32%.

"Every day, MTN processes half a billion mobile money transactions, 150 million calls, and more than 2,000 terabytes of data. All this depends on reliable power. Without electricity, smart cities, cloud computing and artificial intelligence will remain distant dreams. Electricity is no longer a background story. It is the lifeblood of digital life," MTN CEO Sylvia Mulinge said.

Joseph Muvawala, the executive director of the National Planning Authority, said the critical power gap in telecom infrastructure affects digital service quality, increases business costs and limits community participation in the digital economy.

"The high cost of extending power where telecom infrastructure is needed, combined with the issue of power theft in rural areas, further hinders grid expansion. Large consumers, like telecom sites, present stable and reliable revenue streams without the same risk of theft, making it cheaper to take power to them," he says.

Increase access: Ssemanda

Collaborate: Baryomunsi

Co-financing: Opolot

BETWEEN THE LINES
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plan, Vision 2040, as reflected in the National Development Plan IV (NDP IV) sets national electricity access target of 100%, up from 58% in NDP III.

"The telecom sector supports learning in schools, connects health centres and creates opportunities for young people," Dr Chris Baryomunsi, the ICT minister, said.

He noted that the Government is committed to structured collaboration, integrating telecom into national energy planning, and reviewing regulatory frameworks to attract investment.

Sidronius Okaasai Opolot, the state minister for energy, said establishing the Joint Infrastructure Co-ordinating Framework — bringing together ICT, UCC, ERA and private operators — will ensure shared planning and co-financing.

"This approach links power, connectivity and opportunity. It will make Uganda a model for co-ordinated infrastructure development," he said.

Julianne Mweheire, the director of economic regulation, content and consumer affairs at UCC, noted in a report, that Uganda's communications sector has witnessed a surge in infrastructure deployment, with broadband penetration reaching new heights through expanded fibre optic networks and the rollout of 5G pilots in urban and peri-urban areas.

"Mobile subscriptions have climbed to over 40 million, while internet users now exceed 15 million. Yet, beneath these gains lies the persistent reality of disparities; rural communities often lag in access. Even where connectivity exists, usage remains uneven due to affordability barriers, digital literacy deficits, and content relevance."