

GRID-CONNECTED MINIGRID IN AN URBAN MARKET

**Abuja Electric Distribution Company (AEDC)
Undergrid Minigrid
Wuse Market, Abuja, Nigeria
Pilot phase commissioned in 2019,
full completion in 2020**

Grid supply alone was not reliable enough to meet customers' needs, forcing shop owners to depend on expensive, polluting, and loud diesel generators. By combining a minigrid solution with power from the grid, electricity is cheaper and more reliable to shopkeepers. The market will be able to stay open later, contributing to job creation and economic development.

IN OCTOBER 2019, ABUJA ELECTRICITY DISTRIBUTION COMPANY (AEDC), GREEN VILLAGE ELECTRICITY (GVE), AND WUSE MARKET ASSOCIATION SIGNED A TRIPARTITE AGREEMENT FOR THE DEVELOPMENT OF 1MW INTERCONNECTED MINIGRID AT **WUSE MARKET**



THE SITUATION

- A major market near Abuja, in the Federal Capital Territory of Nigeria, with over 2,100 shops and a combined load of nearly 1 MW
- Though the market is within AEDC's concession area, most shops have their own diesel or petrol generators, spending in total over 20M Naira (~US\$50k) per month on energy
- Market productivity and the availability of perishables is limited by power supply
- Abuja Electricity Distribution Company experiences significant technical line losses and energy theft in the area, making supplying the area with power unprofitable and technically difficult

THE SOLUTION

The Abuja Electricity Distribution Company (AEDC) is partnering with a third-party private developer to install and operate an interconnected solar-battery minigrid in Wuse Market. As it is currently being piloted, under this arrangement, AEDC and the minigrid operator both supply the market with electricity at different times of the day. An agreement between the utility and the developer will ensure that customers receive more reliable low-cost energy, and all three parties save money and time. The project focuses on providing power for productive use, to drive economic impact.



AERIAL VIEW OF WUSE
MARKET, NIGERIA.
PHOTO COURTESY REA

THE IMPACTS

- The first interconnected minigrid tripartite agreement in Africa – a model that will likely be replicated and scaled-up
- A 40kW pilot is already providing reliable power to dozens of shops
- As the project expands, 3,000 diesel fuel generators for 2,100 shops are expected to be replaced with cleaner energy
- Abuja Electricity Distribution Company can increase revenue collection from the site
- The market is expected to increase hours of operation by 30%, increasing earnings for merchants and driving job growth



PORTABLE GENERATORS IN USE AT **WUSE MARKET**, PRIOR TO INSTALLATION OF THE MINIGRID SOLUTION



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Through such landmark projects, we at AEDC are developing innovative business models that combine grid and offgrid supply to improve service and drive economic growth. The falling price of distributed energy resources and ease of deployment have made such partnerships an attractive option for utilities as we look at prioritizing our limited resources. Through our recently launched initiative, DESSA, we are looking to deploy similar projects at scale across our service territory, potentially unlocking \$150 million in financing and delivering 100MW of incremental clean generation. We are also keen to see such models replicated in other utilities in the country and ultimately, the region.

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Ije Ikoku
Chief Financial Officer,
AEDC

MORE INFORMATION

READ MORE ABOUT GRID-CONNECTED DISTRIBUTED ENERGY FOR IMPROVED RESILIENCE AND RELIABILITY

→ [REIMAGINING GRID RESILIENCE](#)

RMI 2020

→ [TAKING CHARGE: WESTERN AUSTRALIA'S TRANSITION TO A DISTRIBUTED ENERGY FUTURE](#)

Parliament of Western Australia, 2020

→ [SMART, CLEAN NEIGHBOURHOOD GRIDS](#)

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ELECTRIFYING ECONOMIES

The Electrifying Economies project

demonstrates the role distributed energy will play in ending energy poverty and catalyzing a green and equitable recovery from the Covid-19 crisis. It draws on the latest data and research from around the world to show how distributed renewables can provide sustainable, affordable, and reliable power for all. The project provides information to support policy makers and investors in taking action today, to realize this potential.



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ElectrifyingEconomies.org