



# TANZANIA

## LOW COST CONNECTION ASSESSMENT

From July 2017 to March 2018, SRUC worked with Tanzania’s state-owned electricity company, Tanzania Electric Supply Company Limited (TANESCO) to examine viable low-cost wiring alternatives, provide recommendations within the Tanzanian context, and design communications strategies to target customers. SRUC also led a workshop with energy sector counterparts to plan for the deployment of the technologies in the local market. This included a comprehensive focus group effort to assess viability of wiring solutions.

### WORK ASSIGNMENT SUMMARY

The Sector Reform and Utility Commercialization (SRUC) Task Order (TO) led an assessment to identify financial barriers for residential connections and low-cost wiring options for urban households in Dar es Salaam that, while physically located within reach of existing electricity infrastructure, had yet to connect to the grid. SRUC worked with the state-owned utility, Tanzania Electricity Supply Company Limited (TANESCO), to recommend a series of technology solutions and financing schemes that would

lower the cost of house wiring, which was the primary consumer-facing barrier to connection, and advised how best to encourage uptake of those technologies in key customer demographics.

## CHALLENGE

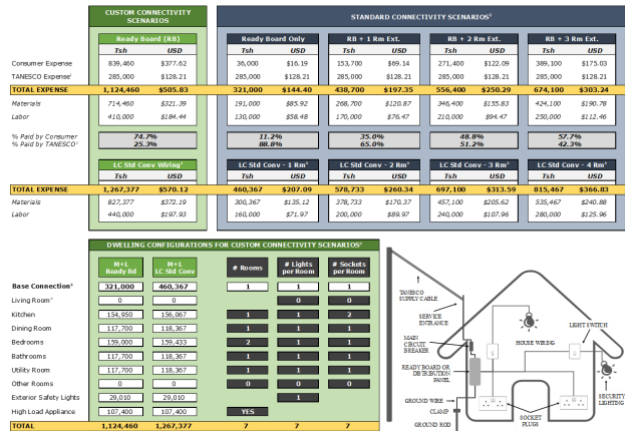
Since 2012, TANESCO has added more than 800,000 customer connections to its network and now has over 1.9 million customers in total. Despite progress on connections, there were still large numbers of potential customers who remained unconnected, even in the urban and peri-urban areas of Dar es Salaam and other population centers.

Tanzania’s Ministry of Energy and Minerals (MEM) reports that the country’s electricity access (defined as being within 1 kilometer of the grid) is currently more than 30 percent, which implies that approximately 15 million people are physically located within the vicinity of the grid, but are not yet connected. These target customers consistently raised not only the cost of connection to the grid as an impediment to access, but also the costs associated with internal wiring materials, inspection and connections services, and difficulties with the application process at TANESCO regional branches.

## APPROACH

To design a strategy for TANESCO to undertake urban and peri-urban on-grid connections, the SRUC team used the following approach:

- Collected data and studies conducted by other donors active in the electricity sector, including the Millennium Challenge Corporation’s work on the Urban Intensification Project and National Rural Electric Cooperative Association (NRECA) work on low cost distribution designs, to understand local consumer preferences and demand limitations for electricity connections.
- Gathered data on house wiring cost and design options by **reviewing the country’s electrical and safety standards and codes**, assessing the wiring, metering, and other electrical material local availability.
- With TANESCO’s field offices, validated baseline assumptions by conducting field visits to unconnected households and customers (connected and pending connection) to **review residential housing conditions, key design elements of wiring**, barriers to low-cost wiring, roles of market participants, and range of current wiring options used by customers.
- Undertook a comprehensive focus group data collection effort to gauge the current marketplace appetite for new low-cost connection options among potential customers and assess the most effective communications methods. Created a focus group methodology and outreach plan, hired focus group facilitators, vetted methodology with the University of Dar es Salaam, and led **17 customer focus groups with 214 connected customers and unconnected households in four different TANESCO regions** over two months.



Tanzania Electric Supply Company Limited (TANESCO) Low Cost Connectivity Dash Board

- Met with leading micro-finance institutions, local banks, and international donor loan programs, including USAID’s Development Credit Authority (DCA), to craft ideas around a potential financing programs for low-income households to lower upfront wiring costs.
- Developed a Low Cost Connectivity Dashboard, a tool that presented **new low-cost wiring configurations** that would increase the number of household connections to allow the utility to make informed decisions aligned with its operational priorities and budgets.
- Presented a Connections Leading Practices Review - a data-driven summary of the focus group conclusions and a targeted literature review of connection programs in Laos, Kenya, India, Cote d’Ivoire, and Jamaica to identify practices to incorporate into the Tanzania connection programs.
- Organized and delivered the Tanzania Low-Cost Connection Assessment Workshop to 20+ high -level practitioners in the Tanzanian energy sector, which provided a summary of the Low Cost Connections Assessment, socialized the low-cost wiring solutions, highlighted the data from the focus group findings, and engaged small group discussions around potential options for connection pilot implementations.

## KEY RESULTS

- Identification of **six low cost wiring configurations for different household layouts**, including conventional wiring, partial wiring, and ready board alternatives, as well as a set of financing schemes for households in peri-urban areas.
- Development of a **Low-Cost Connectivity Dashboard**, a tool that presents various low-cost wiring technologies, based on the existing costs and material availability, and tailored to local standards and regulation.
- Creation of a **standard focus group methodology for assessing residential household wiring needs** and leading practice international examples of low-cost connection methods used by similar utilities in the Leading Practices Review.
- **Uptake by TANESCO** and other key decision-makers in the energy industry on the low-cost wiring solutions presented at the Workshop and agreement on how socialize those solutions.

## M&E INDICATORS

- Number of people trained in technical energy fields supported by U.S. Government assistance – **61 people (17 Female, 44 Male)**. (Standard Indicator: EG.7.3-2)

## COOPERATING PARTNERS

SRUC worked with USAID/ Tanzania, and USAID/Washington’s Energy and Infrastructure Office , both which funded the work, and consulted USAID’s Development Credit Authority (DCA) on potential financing options for residential households to payback connection cost over time. Finally, in order to socialize the approach and methodology for other countries with similar on-grid connection goals, SRUC worked closely with the Power Africa Pillar 2 team, which focuses on on-grid connections.

## FOLLOW ON WORK

The low-cost wiring implementation plan developed by SRUC helped USAID/ Tanzania prioritize its on-grid connection strategy and shape its program. The Assessment and its approach were presented to the Power Africa On-Grid Connections team for use across other Power Africa engagements throughout sub-Saharan Africa.