



ELECTRICITY SUBSECTOR IN UGANDA

This factsheet is intended to highlight key features that are relevant to stakeholders in the electricity subsector in Uganda.

The sector is regulated by the Electricity Regulatory Authority (ERA) under the jurisdiction of the Ministry of Energy and Mineral Development. Its diversity ranges from design, generation, distribution and consumption with approximately 1,178,000 domestic users, 110,450 commercial users and 2,600 medium scale industries,¹ excluding the private solar plants, diesel generators, biogas plants and micro dams. This is an indicator of market viability for electrical technicians and engineers employed at different levels from micro to large enterprises.

The sector Micro, Small and Medium Enterprises (MSMEs) are comprised largely of freelance electrical technicians and companies working in installation, maintenance and repair of electronic components and equipment used mainly in domestic and industrial construction, and manufacturing.

SKILLS & TRAINING

The high-risk factor of electricity requires strict regulation of the players in the sector. By law, all technicians must be licensed by ERA to ensure public safety.



ERA avails a list of (currently) **1,864** certified installation permit holders of different classes on its website <https://www.era.or.ug/index.php/licensing/installation-permits/certified-permit-holders>.

However, the licensing is not required for non-grid (solar power, diesel generator) installations, fixtures and repairs and other support systems in the sector. This can be done by electricians trained in Vocational Training Institutes or apprentices.

INCOME

Most MSME electrical entrepreneurs earn between

UGX15,000 (€3.5)
and
UGX80,000 (€19)



per task depending on their level of skill and service offered like transmission wiring, industrial installation wiring, domestic wiring and fitting and troubleshooting electrical faults. The variation in income levels is also driven by the diversity of the professionals involved from apprentices to engineering graduates.

WORKFORCE DIVERSITY

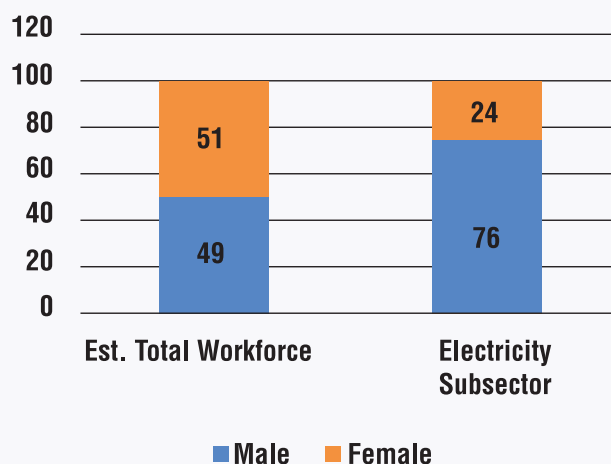
The estimated working population in Uganda is **15.76** million of which **49%** are male.



The electricity, gas and water subsectors to which the electrical technicians belong, employ **0.1%** of Uganda's estimated working population.

This is equivalent to about **19,000** labourers, **76%** of whom are men.²

Male/Female Ratio in the subsector



¹ Umeme Limited Annual Report & Financial Statements, 2018

² Labour Market Profile 2016, Danish Trade Council for International Development and Cooperation



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STANDARDS

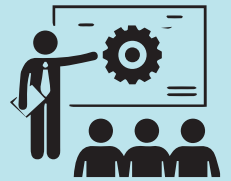
According to its website, the Uganda National Bureau of Standards has an Electrical Testing Laboratory that analyses compliance of electrical wires, cables, conductors, incandescent lamps, dry cells and solar products to national and international standards. However, customers' preference for cheap services creates a market for both unlicensed technicians and substandard products and appliances.



BUSINESS MEMBER ORGANISATIONS

This sector is divided into the professionals who are supported by organisations like the Uganda Institute of Professional Engineers and the Engineers' Alliance.

The vocational-trained and apprenticed level electrical technicians have morphed into MSMEs supported by the Uganda Small Scale Industries Association (USSIA) which provides a platform for networking and advocacy.



TECHNOLOGY

To meet the growing demand for quality services and fittings, a professional electrician needs:

Machinery: Portable drill, motor rewinder, voltage transformer, bench vice and soldering iron.



Tools: Digital multimeter, spectrum analyser, EMP (electromagnetic pulse) detector, EMF (electromagnetic field) detector and chalk.

Safety gear and equipment: High voltage insulating rubber gloves and boots, anti-static bands, insulated safety pole (hot stick), safety harness, protective eye goggles, fire retardant workwear, safety hard hat, ear protectors, safety chart, first aid kit, smoke alarm and fire extinguishers.



For environment protection, there should be EMP and EMF safety zones around power lines, catalytic converters and noise suppression in case of diesel generators, proper waste management and disposal of oils from diesel generators and transformers.

Overall, the industry is receptive to international trends. There are options available for energy-saving and environmentally friendly devices. The gap is in understanding and making investment in smart technologies and intelligent power management systems key to saving power and a clean environment.



The electrical technicians, companies and associations that are registered members of USSIA have access to skills upgrading and training, market information and other business development services.

JOINT VENTURE & PARTNERSHIP OPPORTUNITIES

The construction boom and urban-rural electrification has led to increased demand for electricity and alternative renewable energy. There is also potential energy resource yet to be exploited in solar, wind, geothermal and biomass.

Prospective areas of collaboration:

- Facilitation in skills building and access to modern machinery
- Enforcement of standards on inputs and equipment like generators, solar panels, cables and accessories
- Standardisation of rates, hence increasing consumption of services because of efficiency
- Establishment of training and business development schemes targeting special interest groups such as people with disabilities and women
- Financial and entrepreneurial literacy training to aid growth and development of the enterprise through development of good business practices



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