



ELECTRICITY SUBSECTOR IN RWANDA

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

The energy sector, as a driver of national growth, is of priority to the Rwanda government. It comprises of three subsectors; electricity, biomass and petroleum, and focus is on increasing efficiency in generation, distribution and consumption. The Rwanda Energy Group Limited (REG) and its two subsidiaries; The Energy Utility Corporation Limited (EUCL) and The Energy Development Corporation Limited (EDCL), ensures the effective implementation of government policies in cooperation with the ministries of Infrastructure and Finance, and the Rwanda Utility Regulatory Authority (RURA).

TRENDS

The innovation of off-grid technologies has greatly boosted Rwanda's capacity to avail electricity to more people.

While the target is to have 100%¹ access by 2024, currently,

56.7% of **2,708,000**²

Rwandan households have access to electricity.



Only **1.62%** of the available electric energy is imported while the rest is domestically generated.

The total installed capacity to generate electricity is **218MW** from more than **40** mainly hydro power plants.³

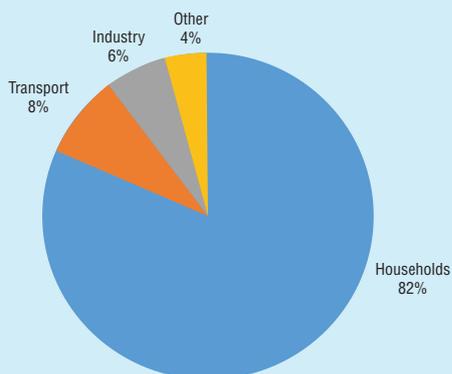


Distribution of Installed Electricity Capacity

Source	Capacity
Hydro-electricity (domestic generation)	45.17%
Diesel	26.76%
Methane gas	13.89%
Peat	3.18%
Solar	2.56%
Imported	1.62%
Other	6.82%

Source: <https://www.reg.rw/facts-figures/facts-figures-details/facts/installed-generation-capacity-on-the-national-grid/>

Energy consumption by subsector (2016)



Households are the largest energy consumer in Rwanda, followed by transport and industry.²

SKILLS & TRAINING

Technical and Vocational Education and Training (TVET) schools educate electricians from **Level 1** through to **Level 7**. This builds the skills and quality of electrical services in the subsector.

LEVEL OF STUDY	ABILITIES
Level 1 Level 2 Level 3	<ul style="list-style-type: none"> Apply bench work applied to domestic electricity Perform domestic electrical drawing Prepare cost estimation for domestic electricity Apply fundamentals of electricity and electronics Lay electrical conduit systems Install electrical power system protection Install special electrical switches and detectors Install energy meters Install home solar system Perform electrical installation testing Repair domestic electric appliances Install electrical lighting, alarm systems and power sockets Maintain entire domestic electrical circuit
Level 4	<ul style="list-style-type: none"> Apply basics of electricity Perform electrical measurements and instrumentation Install pneumatic and hydraulic systems Erect electrical towers/poles Design electrical low voltage installations Operate electrical motors Maintain electrical motors Maintain electrical generators Operate electrical generators Operate pneumatic and hydraulic system
Level 5	<ul style="list-style-type: none"> Pico-hydropower plant Apply fundamental electronics Perform industrial electrical drawing Wind/rewind electrical static machines Wind/rewind electrical rotating machines Perform electrical transmission/distribution line Install sub-station Maintain electrical transmission/distribution network Design electrical power distribution line design

Source: <https://mis.rp.ac.rw/curriculum/8/33>

As of 2019, **28,857** technicians had completed vocational training in different electricity courses.



71% were in active employment.



7% of the employed electricians are female.⁴



¹Energy Sector Strategic Plan (2018/19-2023/24), Ministry of Infrastructure

²The Fifth Integrated Household Living Conditions Survey 2016/17, National Institute of Statistics of Rwanda

³ www.reg.rw, REG

⁴ Labour Force Survey 2019, National Institute of Statistics of Rwanda



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TECHNOLOGY

The tools used by a professional electrician include but are not limited to; a tape measure, a multimeter, a wire stripper, a non-contact voltage detector, a plier, a flashlight, a wire crimper and screwdrivers.



Machines such as upright and portable drills, motor rewriter and transformer are used in power generation, transmission and distribution.

BUSINESS MEMBER ORGANISATIONS

The Energy Private Developers (EPD) is a registered professional association under the Industry Chamber of Private Sector Federation. It brings together private companies operating in the energy sector where most electricians work. Founded in 2016, EPD has more than 100 members operating in hydro-electric power, solar energy, biofuel, biomass, liquefied petroleum gas (LPG) and methane gas.



EPD offers various services to its members including; advocacy on policy formulation, investment facilitation, capacity building, networking, transparent information sharing and B2B workshops.

For details, visit www.epdrwanda.com

INCOME

Electricians earn between

RWF10,000 (£9)

to

RWF15,000 (£13)



per day depending on the work to be done and level of skills of the individual.

STANDARDS

Rwanda Bureau of Standard (RBS) together with practitioners of the electrical subsector, have developed standards for electrical materials and systems.

The standards facilitate electricians to:

- Know what types of materials to use for the different types of electrical installation
- Ensure safety of the electrical installation
- Limit the use of substandard electrical materials
- Limit electricity wastage through transmission and distribution



JOINT VENTURE & PARTNERSHIP OPPORTUNITIES

Energy is key driver of any socio-economic transformation and the subsector in Rwanda needs the following to achieve the target of 100% access to electricity by 2024:

- Access to finance
- Consumer awareness of energy products
- Skills development initiatives
- Collaborative research and development programs
- Investment facilitation such as fundraising, angel investors and grants



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