

Energy Efficient Lighting and Appliances in Southern and Eastern Africa (EELA)

Lighting retrofit at Kigali Independent University Campus Through a Shared Savings Agreement

Vedaste NDAYISHIMIYE
Technical Directoro
STOP Ltd
Kigali-RWANDA



Background on Kigali Independent University



Location	Kigali-Rwanda
Year of Founding	1996
Number of Student every year	Over 7,000
Number of Graduated Students	Over 3,5000
Number of Staff	373





In fixtures where fluorescent lamps have been removed, the ballasts have not been disconnected.



When burned out fluorescent lamps and/or ballasts have been replaced, more efficiently lights have not been installed.



Excessive light levels in unoccupied spaces

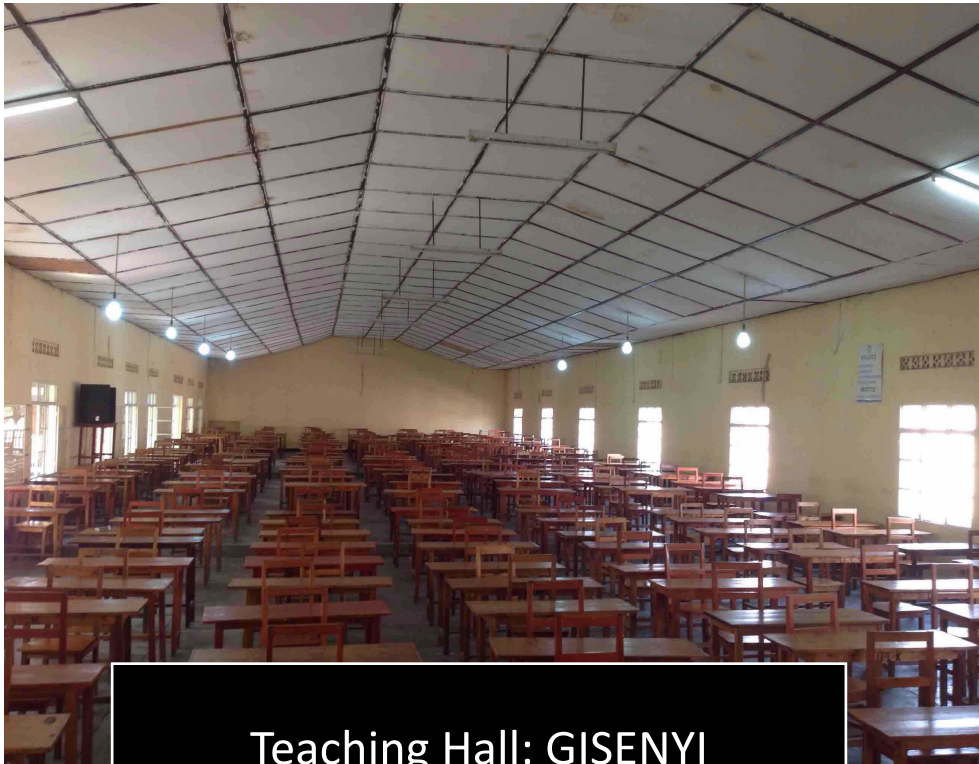


Glory Academy: Entrance



Glory Academy: Corridors

Large areas controlled by one single switch



Teaching Hall: GISENYI



Teaching Hall: Faculty of Economic Science and Management

Objective

- Improve suitability for activity performed in each area
- Reduce operation and maintenance cost
- Enhancement of comfort for occupants
- Reduce carbon emission



UPGRADE TO LED

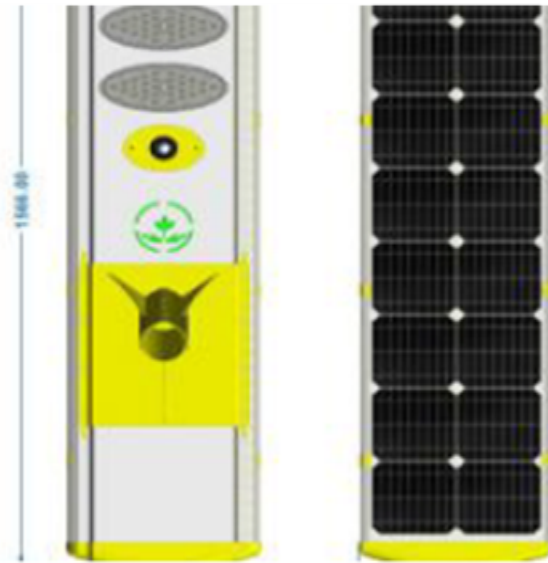
Existing Lights		Proposed Lights	
Product	Watts	Product	Watts
67W T8 Fluorescent Troffer	67	LED Panels 60x60 36 Watt	36
20W Double Twin CFL Bulb	20	12-Watt Round LED Surface Panel Light	12
85W CFL Spiral Light Bulb	85	LED Bulb - 18 Watt	18
36 W T8 Fluorescent Tube	36	Round Motion Sensor LED Panel Light	12
150W projectors	150	LED Street Light 60W	60
20W fluorescent tube	20	12-Watt Round LED Surface Panel Light	12
36 W T8 Fluorescent Tube	36	16W LED Fluorescent Tube	16
12W CFL Spiral Light Bulb	12	6-Watt Round LED Surface Panel Light	6
18W CFL Spiral Light Bulb	18	12-Watt Round LED Surface Panel Light	12
40 W T8 Fluorescent Tube	40	16W LED Fluorescent Tube	16
20 W Double Twin Tube CFL Light Bulb	20	12-Watt Round LED Surface Panel Light	12



Lighting Control



Installation of Occupancy Sensors in Restrooms



Installation of Solar Street lights for outdoor lighting



LED Motion Sensor Light

Installation of LED Controlled By Motion sensor On Stairs and Corridors

Results & Impacts

Energy Savings Per 1 Year	534,481 kWh (54% of Lighting consumption)
Cost Savings	€48,729 Every Years
	€296,897 in ten years.
Carbon Emission reduction	377 tons of carbon emission



Estimated Costs and Savings

Costs

Total Project Cost

£190,391

Founding from EELA (75 %)

£142,793

Co-Financing from ESP (25%)

47,598

Savings

Cost of Energy Savings per Year

£48,729

Annual Energy Savings

534,481 kWh

Project Cash Flow in 10 Years

€296,897



Proposed Lighting Business Model

- The total cost for this project, including materials, labour, and recycling fees will be covered by EELA project as Sponsor and STOP Ltd (Energy Service Provider)
- After the full installation of new lighting fixtures, Kigali Independent University ULK Ltd will continuously pay 50% of the monthly savings every month from the day of commissioning.
- This continuous payment will continue until 25% of the total project cost is paid back to STOP Ltd until 25% of this project is paid.
- The reference monthly energy bill to be considered will be the average electricity bill from 2018 and 2019.
- After the full payment, the lighting system will remain the property of Kigali Independent University ULK Ltd.
- TOP Ltd will assure high quality and efficient installation service, and supply the best quality LED products.



Challenges and Opportunities

- The management of public buildings do not value energy savings potentials
- Lack of client awareness
- Behavior an Social issue of facility users
- Lack of capacity building policy implementation
- High cost of energy efficiency equipment's and materials.
- **High electricity consumption with a very high electricity price.**



THANK YOU !



STOP LTD

www.stoprwanda.rw

E-mail : stoppe20062009@hotmail.fr

