



# *GOOD PRACTICES IN SUSTAINABLE UNIVERSITY CAMPUSES*

*Report #2 – October 2016*

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SUCCEED Network

*'East African Higher Education Network on Sustainable and Energy Efficient Campus Development'  
(FED/2013/320-274)*

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## FOREWORD

Energy is currently one of the hottest topics that need to be tackled in the East African Region, which is facing serious energy deficits and high-energy costs. The deficit in electricity supply and the lack of access to sustainable energy services hampers the satisfaction of basic human needs. The EU-EA Regional Strategy Paper revealed that 70% of the total inhabitants do not have access to sustainable energy sources. This leaves the region on a high dependence on fossil fuels, energy insecurity and high-carbon emission systems, which together with climate change provoke a very complex situation for the region.

The East Africa Region experiences unsustainable energy practices, which prevents its countries from reaching acceptable standards of socio-economic development. Most recently, the EC Country Strategy Papers stated as common problems in these countries:

- Lack of regional and national policies on Energy Efficiency and Renewable Energy that match the decision maker's decisions with society's actual needs.
- Poor infrastructures to produce, store and distribute energy in a more sustainable way.
- Lack of professionals trained in Energy Efficiency and Renewable Energy.

Due to the innovative nature of this field, universities, as providers of research and education, can play a crucial role in overcoming these problems.

Launched in October 2013, the three-year project SUCCEED Network is an ACP-Edulink funded project (contract number FED/2013/320-274) which aims to promote East African university campuses as "living laboratories" for sustainability and energy efficiency, in particular by establishing a sustainable campus development platform to foster collaborative learning and action for energy access and efficiency, with the idea of contributing to solve the problems described above. The project will do this via a set of activities whose objective will be to improve institutional, academic and cooperation building which should result in a stronger institutional background, an enriched academic offer in renewable energy and energy efficiency, and an increased attractiveness for relevant stakeholders in order to establish new cooperation schemes in the field of energy.



## INTRODUCTION

Key to Energy Efficiency are the good practices that relate to activities and programmes that reduce the amounts of energy used by specific end-use devices and systems, without affecting the level of services provided. Improvements in the practices and equipment that reduce on the energy needed to provide services like lighting, cooling, heating, manufacturing, cooking, and transport that result in doing more with less energy, and therefore saving money and energy to enable HEIs concentrate on their core mandate of teaching and research within the East African Region has been promoted by the SUCCEED programme.

Presently, in most regions in Africa, including the East African Region, due to an increase in economic activity in the countries, the electricity demand is currently much higher than that supplied, especially during peak hours. To meet the increased demand, additional generation has been done from a number of sources and using quick fix investment models that has resulted in increased tariffs a scenario that requires the high energy users like industries and Universities to prioritise and popularise good practices in Energy Efficiency.

Under the SUCCEED Program Higher Education Institutions (HEIs) in the East African region (as well as one European university) were invited to collect and share good practices in Energy Efficiency in their universities. This was done with the aim of disseminating the Good Practices identified in the field of sustainable university campuses through peer benchmarking.

This publication presents a collection of 14 Good Practices gathered by the SUCCEED partner HEIs. It is hoped that other East African HEIs will find these Good Practices useful, and will be encouraged to share their own Good Practices in the field in future publications.

*If your institution wishes to contribute Good Practices to the next publication, please contact the project coordinator at [project.management@ua.es](mailto:project.management@ua.es) in order to receive instructions.*

## GOOD PRACTICES

The participating HEIs have identified Good Practices in the field of Energy Efficiency in their Institution according to the categories described in the table below.

GOOD PRACTICES IN ENERGY EFFICIENCY IN HEIs	
<b>CATEGORY OF ENERGY USE</b>	<i>The template captures the good practices as applied in the various categories of energy use. It highlights the key areas of energy use in the HEIs where possible energy efficient practices can be adopted by institutions across the region</i>
<b>Lighting</b>	<i>Lecture, Conference and Library rooms</i>
	<i>Student and Staff Residential Accommodation</i>
	<i>Street lighting</i>
	<i>General Building Lighting</i>
<b>Cooking</b>	<i>Kitchens</i>
	<i>Water Heating</i>
<b>Refrigeration</b>	<i>Cold rooms</i>
	<i>Laboratories</i>
	<i>Domestic Fridges</i>
<b>Appliances &amp; Equipment</b>	<i>Computer labs, Computers, projectors</i>
	<i>Air conditioning</i>
	<i>TVs and other entertainment gadgets</i>
	<i>Mobile phones, TABs, etc</i>
	<i>Prohibited high energy consuming gadgets</i>
<b>Architectural</b>	<i>Remodeling of existing buildings</i>
	<i>Green policy on new buildings</i>
<b>Others</b>	

## MAKERERE UNIVERSITY

<b>HEI</b>	<b>Makerere University</b>
<b>Location</b>	Kampala, Uganda
<b>Institution</b>	Higher Education Institution
<b>GOOD PRACTICE #1</b>	<b>Selection of Unit Energy Efficiency Champions in high energy consuming buildings in the campus</b>
<b>Category of Energy use</b>	Energy utilisation
<b>Description</b>	<p>The high energy wastage in sampled buildings in the campus was attributed to lack of awareness and negligence by the users. As a way forward during the sensitization of users in different units, Energy Efficiency Champions were nominated to spearhead energy use awareness and monitoring to ensure efficient use of power in the units.</p> <p>The Energy Efficiency Champions do energy use surveillance and remind other users about power saving practices to ensure energy in particular units is not wasted. This has reduced the number of lights and/ or appliances left switched on while the rooms/appliances are not in use hence reduced power billing.</p>
<b>Relevant Stakeholder Support</b>	Makerere University – Energy Efficiency Unit and the Units (Community)
<b>INTERNET</b>	<a href="http://www.mak.ac.ug">www.mak.ac.ug</a>
<b>CONTACT PERSON</b>	<p>NAME: Mr. Fred Nuwagaba</p> <p>POSITION: Director Estates and Works</p> <p>E-MAIL: <a href="mailto:director@ewd.mak.ac.ug">director@ewd.mak.ac.ug</a> / <a href="mailto:frednuwa@yahoo.com">frednuwa@yahoo.com</a></p>

<b>GOOD PRACTICE #2</b>	<b>Rewiring of selected units/buildings to ensure centralized control points for security lights</b>
<b>Category of Energy use</b>	Domestic and Commercial use of Electricity within the Campus
<b>Description</b>	During the internal roundtables, the Makerere University energy efficiency unit noted that security lights were not being switched off in time because each light had its individual control point and the control points were scattered in the building with some inside some offices that were not accessible at certain times. The EEU in liaison with the Estates & Works Department undertook a phased approach to rewiring the security lighting system of selected buildings.
<b>Relevant Stakeholder Support</b>	Makerere University Energy Efficiency Unit and Estates and Works Department
<b>INTERNET</b>	<a href="http://www.mak.ac.ug">www.mak.ac.ug</a>
<b>CONTACT PERSON</b>	NAME: Mr. Fred Nuwagaba POSITION: Director Estates and Works E-MAIL: <a href="mailto:director@ewd.mak.ac.ug">director@ewd.mak.ac.ug</a> / <a href="mailto:frednuwa@yahoo.com">frednuwa@yahoo.com</a>

## MOI UNIVERSITY

<b>HEI</b>	<b>Moi University</b>
<b>Location</b>	Eldoret, Kenya
<b>Institution</b>	Higher Education Institution
<b>GOOD PRACTICE #1</b>	<b>Efforts to repair and replace solar panels on students hostels for heating water among other uses and installation of street and security solar lights</b>
<b>Category of Energy use</b>	Energy utilisation
<b>Description</b>	<p>In Moi University Energy consumption is recorded highest in student hostels. All the hostels were initially fitted with solar panels for water heating systems. Overtime they were in a state of disrepair making students to use illegal connections to boil water for various uses. With a population of over 10,000 students in halls of residence at any given semester the power bills have been high for the university.</p> <p>The university has repaired and continues to upgrade existing solar panels and install new ones for water heating and other uses in the hostels. This practice has reduced unnecessary consumption of energy which has translated into lower electricity bills.</p>
<b>Relevant Stakeholder Support</b>	The student community and hostel administration
<b>INTERNET</b>	<a href="http://www.mu.ac.ke">www.mu.ac.ke</a>
<b>CONTACT PERSON</b>	<p>NAME: Mr Simon Maina</p> <p>POSITION: University Architect</p> <p>E-MAIL:</p>



<b>GOOD PRACTICE #2</b>	<b>Use of energy saving bulbs in buildings and replacement of electricity powered street lighting by solar powered street lights.</b>
<b>Category of Energy use</b>	Street lighting, security lighting and all buildings in the university.
<b>Description</b>	<p>Moi University is a large and expansive campus with many buildings and a big student populations that requires an efficient security system. This necessarily implies high power consumption. The university has installed and continues to upgrade its street lighting from electricity powered to solar powered systems which require little maintenance and cost.</p> <p>The high consumption bulbs in buildings have also been replaced by the more efficient and energy saving ones. As a result the university has drastically reduced the power expenditure.</p>
<b>Relevant Stakeholder Support</b>	Moi University staff, Estates department and the security network unit.
<b>INTERNET</b>	<a href="http://www.mu.ac.ke">www.mu.ac.ke</a>
<b>CONTACT PERSON</b>	NAME: Mr Simon Maina POSITION: University Architect E-MAIL:

## MZUMBE UNIVERSITY

<b>HEI</b>	<b>Mzumbe University</b>
<b>Location</b>	Morogoro, Tanzania
<b>Institution</b>	Higher Education Institution
<b>GOOD PRACTICE #1</b>	<b>Switching off lights and air conditioners when office bearers are out of office and switching on when they are back</b>
<b>Category of Energy use</b>	Appliances & equipment / Air conditioning
<b>Description</b>	<p>Before the beginning of this project it was normal to leave lights and air-condition on even when there is no body in office. For example when the office bearer is off for a meeting or other duties outside the office, the secretaries were not aware that leaving the lights on leads to unnecessary energy consumption. The office bearers are sometimes so busy so that it is easy for them to leave the lights and air conditioners on when they go for other activities outside the office. After carrying out sensitization conversations with the secretaries now most of them remember to put off lights and air conditioners when their respective office bearers are off.</p> <p>The challenge is that sometimes the power supply is cut off while lights and the air conditioners are on and the secretaries forget to witch off because they do not see it. In such situations if the power supply takes a long time to come back until the end of work hours it is easy to have some offices with lights and air conditioners on while is night and there is no body in office and thus the energy is used unnecessarily till the next day. The situation may be worse if the switches are forgotten over the weekend. To control this challenge the project team has extended the sensitization to cleaners who open the office in the morning or during weekends for doing cleanliness. They have also started to understand that once they meet lights or any other appliance on then the first step is to switch off.</p> <p>The good practice has significantly contributed to reducing energy consumption in the main campus.</p>
<b>Relevant Stakeholder Support</b>	<ol style="list-style-type: none"> <li>1. Office bearers- they remind their secretaries to put off lights and air conditions when they are out of office</li> <li>2. Secretaries -they practice putting off lights and air conditioners when their respective office bearers are out of office</li> <li>3. Project team members provide regular sensitization conversations to secretaries and cleaners.</li> <li>4. Cleaners- they practice putting off lights and air conditioners when they meet them on during opening and closing of offices.</li> </ol>
<b>INTERNET</b>	<a href="http://www.mzumbe.ac.tz">www.mzumbe.ac.tz</a>

<b>CONTACT PERSON</b>	NAME: David Mwangosi POSITION: Environmental Officer, Mzumbe University, Main Campus E-MAIL: dgmwangosi@mzumbe.ac.tz
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<b>GOOD PRACTICE #2</b>	<b>Reduction of demand and use of firewood for cooking as a result of constructing bio-gas latrines at Msasani Primary School in Dar es Salaam - Tanzania</b>
<b>Category of Energy use</b>	Architectural
<b>Description</b>	<p>The purpose of the good practice is to reduce the use of firewood in cooking activities.</p> <p>Msasani Primary School has recently received 12 bio-gas latrines worth 35 million Tanzanian shillings. The latrines will serve more than 800 pupils and staff. This is a good practice because the latrines will reduce expenses on energy. The pupils and staff shall be able to use the bio-gas generated from the latrines for cooking activities and thus reduce the need for other sources of energy like firewood which would contribute to generation of gases contributing to global warming.</p> <p>The latrines shall reduce students' queues in search for washroom services and thus increase their concentration during classes</p> <p>Before construction of the latrines, the school was consuming 5kgs of firewood daily amounting to the cost of 150,000/= Tanzanian shillings monthly for cooking pupils food during school days. This is to say the school was contributing to the production of carbon dioxide and had poor latrine services. Currently food and latrine services are improved while the cost has reduced.</p>
<b>Relevant Stakeholder Support</b>	<ol style="list-style-type: none"> <li>1. Mzumbe University</li> <li>2. Msasani primary School- beneficiaries of the project.</li> <li>3. Ballore Africa Logistics and La Forge (Mbeya Cement)- constructor of the project</li> </ol>
<b>INTERNET</b>	<a href="http://www.thecitizen.co.tz/magazine/youngcitizen/Msasani-school-students-convert-waste-to-biogas/1841674-3233382-6issiqz/index.html">http://www.thecitizen.co.tz/magazine/youngcitizen/Msasani-school-students-convert-waste-to-biogas/1841674-3233382-6issiqz/index.html</a>
<b>CONTACT PERSON</b>	POSITION: Head Teacher, Msasani Primary School

## UNIVERSITÉ DU BURUNDI

<b>HEI</b>	<b>Université du Burundi</b>
<b>Location</b>	Bujumbura, Burundi
<b>Institution</b>	Higher Education Institution
<b>GOOD PRACTICE #1</b>	<b>Using low-consumption bulbs</b>
<b>Category of Energy use</b>	Lighting
<b>Description</b>	<p>The Université du Burundi used to buy classical light bulbs (40W neon tubes; 40W, 60W, 100W incandescent bulbs) that consumed a lot of energy. Currently these are being progressively replaced by low-consumption bulbs (LED tubes, bulbs).</p> <p>This change has allowed to reduced the energy bill by 20% for electricity.</p>
<b>Relevant Stakeholder Support</b>	<p>Régie des Oeuvres Universitaires</p> <p>Société Nationale de Production et de Distribution de l'Eau et de l'Electricité REGIDESO</p>
<b>INTERNET</b>	
<b>CONTACT PERSON</b>	<p>NAME: Ing. NDAYISABA Zacharie</p> <p>POSITION: Chef du Service de Gestion du Patrimoine Mobilier et Immobilier</p> <p>E-MAIL: <a href="mailto:ndayisabaz@yahoo.fr">ndayisabaz@yahoo.fr</a></p>

<b>GOOD PRACTICE #2</b>	<b>Installation of scheduled switches to control exterior lighting</b>
<b>Category of Energy use</b>	Lighting
<b>Description</b>	<p>It was observed that exterior lighting often stayed on during the day, resulting in huge wastes of energy.</p> <p>The installation of scheduled switches in certain buildings has allowed to automatically programme the exterior lighting, resulting in a positive impact on the energy bill.</p>
<b>Relevant Stakeholder Support</b>	Régie des Oeuvres Universitaires
<b>CONTACT PERSON</b>	<p>NAME: Ing. NDAYISABA Zacharie</p> <p>POSITION: Chef du Service de Gestion du Patrimoine Mobilier et Immobilier</p> <p>E-MAIL: <a href="mailto:ndayisabaz@yahoo.fr">ndayisabaz@yahoo.fr</a></p>

<b>GOOD PRACTICE #3</b>	<b>Installation of extra meters on the commercial buildings on campus and in staff housing</b>
<b>Category of Energy use</b>	Energy utilisation
<b>Description</b>	<p>Certain buildings on campus are rented by private individuals for revenue-generating activities. Other buildings are rented by part of the University staff.</p> <p>Previously it was the Université du Burundi that supported the cost of the electricity for these building. With the installation of extra meters it is now the tenants who pay for the energy they consume.</p> <p>This measure has allowed to significantly reduce the energy bill.</p>
<b>Relevant Stakeholder Support</b>	Régie des Oeuvres Universitaires
<b>CONTACT PERSON</b>	<p>NAME: Ing. NDAYISABA Zacharie</p> <p>POSITION: Chef du Service de Gestion du Patrimoine Mobilier et Immobilier</p> <p>E-MAIL: <a href="mailto:ndayisabaz@yahoo.fr">ndayisabaz@yahoo.fr</a></p>

## UNIVERSITY OF RWANDA

<b>HEI</b>	<b>University of Rwanda</b>
<b>Location</b>	Kigali, Rwanda
<b>Institution</b>	Higher Education Institution

<b>HEI</b>	<b>University of Rwanda – College of Agriculture, Animal Science and Veterinary Medicine</b>
<b>Location</b>	Campus of Busogo, Rwanda
<b>Institution</b>	Higher Education Institution
<b>GOOD PRACTICE #1</b>	<b>Energy Policy</b>
<b>Category of Energy use</b>	Energy policy
<b>Description</b>	<p>A policy on Energy Use has been drafted by the UR Energy Efficient Unit and will soon be submitted to the management of the University for approval.</p> <p>Before, the College was working on daily monitoring of energy use by avoiding use unnecessary electrical appliances and equipment, improving electrical installation by replacing the incandescence light to the LED light.</p> <p>The main source of electricity is the National the Energy Utility Corporation Limited (EUCL) under Rwanda Energy Group (REG). The electricity distribution company (EUCL) supply electricity at many entree points. The average power capacity consumption per month is about 20,000 KWh. A generator with a capacity of 130 KVA serves as an automated backup at the time of power cut off of the main provider. The College has a system of prepay metering (cash power metering).</p>
<b>Relevant Stakeholder Support</b>	Energy Efficiency Unit
<b>CONTACT PERSON</b>	<p>NAME: MANISHIMWE Innocent</p> <p>POSITION: Electrician</p> <p>TELEPHONE NUMBER: 0788224205/0739657804</p> <p>E-MAIL ADDRESS: <a href="mailto:imanishimwe@ur.ac.rw">imanishimwe@ur.ac.rw</a></p>

<b>GOOD PRACTICE #2</b>	<b>Using low-consumption bulbs</b>
<b>Category of Energy use</b>	Lighting
<b>Description</b>	<p>Since 2014-2015 all incandescent bulbs have been replaced by LED bulbs in lecture, conference and library rooms. This process is continued in any buildings being remodelled.</p> <p>The Campus has also begun replacing the incandescent bulbs in street lights with LED lights.</p>
<b>Relevant Stakeholder Support</b>	<p>Energy Efficiency Unit</p> <p>Estates Department</p>
<b>CONTACT PERSON</b>	<p>NAME: MANISHIMWE Innocent</p> <p>POSITION: Electrician</p> <p>TELEPHONE NUMBER: 0788224205/0739657804</p> <p>E-MAIL ADDRESS: <a href="mailto:imanishimwe@ur.ac.rw">imanishimwe@ur.ac.rw</a></p>

<b>GOOD PRACTICE #3</b>	<b>Sensitization Campaign</b>
<b>Category of Energy use</b>	Lighting
<b>Description</b>	<p>There is a main automated light switch but the system is only used in some houses.</p> <p>Since the creation of the Energy Efficient Unit, we have organized a campaign of sensitization during the Induction Week of new students. Stickers with notices for switching-off lights when going out or after work have been put on doors in administrative offices and hostels.</p>
<b>Relevant Stakeholder Support</b>	<p>Energy Efficiency Unit</p> <p>Campus students and staff</p>
<b>CONTACT PERSON</b>	<p>NAME: MANISHIMWE Innocent</p> <p>POSITION: Electrician</p> <p>TELEPHONE NUMBER: 0788224205/0739657804</p> <p>E-MAIL ADDRESS: <a href="mailto:imanishimwe@ur.ac.rw">imanishimwe@ur.ac.rw</a></p>

<b>HEI</b>	<b>University of Rwanda – College of Science and Technology</b> <b>College of Medicine and Health Sciences</b>
<b>Location</b>	Campus of Nyarugenge, Rwanda
<b>Institution</b>	Higher Education Institution
<b>GOOD PRACTICE #1</b>	<b>Using low-consumption bulbs</b>
<b>Category of Energy use</b>	Lighting
<b>Description</b>	Incandescent light bulbs have been removed in all old buildings and replaced with LED bulbs. New buildings are being equipped directly with LED bulbs.
<b>Relevant Stakeholder Support</b>	Energy Efficiency Unit Estates Department
<b>CONTACT PERSON</b>	NAME: Olivier KALIBOLI POSITION: Ag. Director of Estate TELEPHONE NUMBER: E-MAIL ADDRESS:okaliboli@gmail.com



<b>GOOD PRACTICE #2</b>	<b>Sensitization Campaign and automatic lighting</b>
<b>Category of Energy use</b>	Lighting
<b>Description</b>	<p>There is no main automated switch of lights but the system is used on some houses. We have ordered an automated switch off lights that will be programmed for switching lights off between 23:00 and 06:00 a.m.</p> <p>Since the creation of the Energy Efficient Unit, we have organized a campaign of sensitization during the Induction Week of new students. Stickers with notices for switching off light when going out or after work have been put on doors in administrative and hostels</p>
<b>Relevant Stakeholder Support</b>	<p>Energy Efficiency Unit</p> <p>Campus students and staff</p>
<b>CONTACT PERSON</b>	<p>NAME: Olivier KALIBOLI</p> <p>POSITION: Ag. Director of Estate</p> <p>TELEPHONE NUMBER:</p> <p>E-MAIL ADDRESS:okaliboli@gmail.com</p>

## SUCCEED Network consortium:

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- University of Alicante, Spain (Coordinator)

### East Africa:

- Université du Burundi, Burundi
- Moi University, Kenya
- University of Rwanda, Rwanda
- Mzumbe University, Tanzania
- Makerere University, Uganda
- Inter-University Council of East Africa, Uganda

## Contact information:

### Project coordinator

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## Legal Notice

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