



# MAASAI MARA UNIVERSITY

## ENERGY MANAGEMENT POLICY

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## Foreword

**We Maasai Mara University beliefs and understand that, energy regulations are beneficial for organizational management.**

Regulations can often feel like yet another piece of administration for businesses to deal with, or even something that seems to get in the way of progression. However, regulations can actually have a far-reaching effect on improving the way our university operates in subsequent years.

In the case of sustainable business operations, we understand that, recent regulations disrupt the standard procedures and ways of thinking to allow institutions to improve their efficiency, saving the institutions money in the long run and helping it to become more productive. ISO 50001 Energy Management Standard, LEED Energy Efficiency standard, the Building Energy Efficiency Certificate and the ERC Directive just to name a few.

The university will include greenhouse gas emissions in its annual Report. This Mandatory Carbon Reporting will facilitate changes that have a positive outcome for the institution's benefit.

Carbon reporting means that the institution need to have a greater awareness and understanding of its energy usage and emissions, which inevitably will results in lower energy consumption and improved energy efficiency.

As well as the financial and environmental benefits, energy management will create a corporate culture of social responsibility, which in turn will improve brand loyalty, brand reputation and even employee engagement.

Maasai Mara University will strive to join other Organizations across the globe in endeavoring to take part in the international energy management standard ISO 50001, which follows procedures from implementation stage through to maintenance and improvements.

For us, the aim is to realize a 30% reduction in energy usage after implementing the regulations, as well as increased engagement among management staff and enhanced O&M practices.

Furthermore, Maasai Mara University has set itself the target of reducing its energy usage by more than a third (35%) by the year 2020, using the ISO 50001 to help it reach this goal. So, we are optimistic that in the case of energy usage, a little regulation shall go a long way towards improving our University future energy prospects.

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**Signature**  
**Vice Chancellor**

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**Date**

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# **1.0 INTRODUCTION**

## **1.1 Background**

Maasai Mara University and its environs is endowed with abundant Renewable Energy resources including Solar, Wind, and Biomass. To enhance energy security, mitigate climate change, generate income and create employment, energy resources have to be explored in a diversified manner. To exploit these resources efficiently and sustainably, it requires a robust legal and regulatory framework as well as sound institutional set up. The institution has witnessed increasing university enrollment and general institutional operations, leading to high energy bills. Diversifying the energy supply sources apart from the National Grid, to respond to new challenges in the energy requirements has become eminent. The overall long-term objective of the policy is to establish an efficient institutional energy development production, storage, and end-user systems in an environmentally sound manner with due regard to gender issues for sustainable socio-economic transformation.

## **1.2. Energy Situation in Maasai Mara University**

Energy sector play a critical role in the academic, research and training development of an institution. All productive academic functions; Research, training, technological advancement and innovations of the University are driven by an adequate, reliable, affordable and sustainable energy supply. At the present, affordable, reliable and accessible electricity from the National Grid is identified consistently as a major constraint in achieving desired academic transformation in institution. The use of Charcoal, firewood, and petroleum is too costly, a public health hazard, environmentally unfriendly and a danger to global warming phenomenon.

### **1.2.1 The Energy Resource potential**

The Renewable energy resources base in Maasai Mara includes: Biogas, Solar, wind, and biomass wastes and residues. The Narok region has a lot of sunshine and wind resources almost throughout the year from which solar and wind energy can be tapped. Also, within the university and its surroundings, there are plenty of Biomass and biogas energy resources. This resource has not been fully developed because the institution is only dependent majorly on electricity from the National Grid. At the present, the Biomass is exploited in form of firewood and charcoal.

### **1.2.2 The Energy Demand and Supply**

At the present, the energy balance in university is dominated by traditional use of biomass in the form of charcoal and firewood. On average demand for electricity is growing at 20-30 percent per annum. To foster the desired academic transformation, university's access to modern energy services in an affordable, reliable, sustainable and environmentally-friendly manner is inevitable.

## **1.2 The Role of Energy in Institutional Economy**

Energy is a critical component in the academic training, research, technological, innovation advancements, and institutional security of a university. The level and the intensity of energy use in a university is a key indicator of academic growth and development. The Kenya Vision 2030 identified energy as one of the infrastructure enablers of its socio-economic pillar. Sustainable, competitive, affordable and reliable energy for all academic and training institutions is a key factor in realization of the Vision.

Energy shortages and supply disruptions coupled with high cost remain serious obstacles to academic training, research, innovations and technological activities. Plans are underway to develop renewable energy such as wind, solar and biomass.

The cost of energy has significant impact on institutional core functions, particularly those that are energy intensive such as science laboratories, library, kitchen, security, workshops etc.

## **1.3 Justification for the Policy Development**

### **1.3.2 Key Drivers of the Policy development**

The institutional energy sector faces a number of challenges which include: increasing access to modern energies, security of supply, reducing the cost of energy supply, environmental protection, research and development of appropriate energy technologies; raising necessary financing for energy projects and inadequate awareness of the benefits and methods of energy conservation and efficiency.

Academic and training needs, environmental and economic situation of the institution and indeed the country has significantly changed both locally and internationally. Even more significantly, the government has formulated several policies and enacted legislation in other sectors which require addressing. The key drivers for the policy development include: the institution's desires to promote alternative energy sources to improve energy mix; national and global growing

environmental concerns; meeting growing demand for modern energies; improving governance and performance of the energy sector; accommodating National Vision 2030 goals, ERC 2006 guidelines.

The University Energy Policy 2016 spells-out university's intentions to improve the sector performance and governance to propel academic, research, technology and innovations growth and reduce emissions. It communicates the institution's intended actions and the desirable future conditions of the energy sector in Maasai Mara University. It seeks to actively mobilize the staff, students and other resources towards improving sector performance and governance.

### **1.3.3 Expected Outcomes**

The University Energy Policy 2016 reflects the vision of the university and the society in transforming the Academic Training. Particular attention being given to the overall structure and mechanisms of the energy and university recurrent expenditure, research development ambitions, priorities of the university, prudent use of scarce resources. The formulation and implementation of this policy is expected to:

- a) Increase access to modern energy services, particularly in essential university sectors;
- b) Promote Security of supply of energy;
- c) Encourage efficient production and utilization of energy resources;
- d) Minimizes the negative environmental and health effects from energy production, conversion, transportation and use;
- e) Reduce dependence on imported petroleum, electricity from the national grid and switch to locally available energy supplies;
- f) Promote cost effective utilization of energy; Increase sustainable production and utilization of renewable energies;
- g) Promote cross-sectoral linkages.

## **1.4 Policy Vision and Mission**

### **1.4.1 Vision**

Quality and Efficient Energy Supply for all University Facilities and Functions

### **1.4.2 Mission**

To Facilitate Provision of Clean, Sustainable, Affordable, Competitive, Reliable and Secure Energy Services at Least Cost while Protecting the Environment

## **2.0 Energy Policy Objectives**

### **2.1 Main Objective**

The overall objective of the energy policy is to ensure sustainable, adequate, affordable, competitive, secure and reliable use and supply of energy to meet institutional needs at least cost, while protecting and conserving the environment.

### **2.2 Specific Objectives**

- (a) Utilize energy as a tool to accelerate academic, research and economic empowerment for the institutional development.
- (b) Improve access to affordable, competitive, and reliable energy services.
- (c) Provide an environment conducive for the development and provision of energy services.
- (d) Prioritize and promote development of indigenous primary and secondary energy resources.
- (e) Prioritize and promote the development of local technologies in energy development.
- (f) Promote energy efficiency and conservation.
- (g) Ensure that prudent environmental, social, health and safety considerations, as well as issues of climate change are factored in training programmes.
- (h) Ensure that a comprehensive, integrated and well informed New and Renewable Energy sector plan is put in place for effective development.
- (i) Foster local, national and international co-operation in New and Renewable Energy investments and development.
- (j) Promote capacity building in the sector through research, development and training. Also promote institutional manufacture of plant, equipment, appliances and materials.

- (k) Promote diversification of renewable energy sources to ensure security of supply.
- (l) Ensure that investments and operations in New and Renewable Energy sector comply with institutional strategic plan requirements.
- (m) Promote and develop Institutional departmental innovation groups in the development of energy resources.
- (n) Promote an elaborate response strategy in the management of energy related disasters.
- (o) Encourage generation of electricity from renewable resources and build the necessary infrastructure developments.

### **3.0 Policy Statement**

*As Maasai Mara University* we are committed to continuously improving our Energy efficiency and performance and thereby reducing energy costs, emissions and wastage. We will strive to improve energy management within our operations and work towards energy-efficient best practices which are cost-effective. Reducing our energy cost per kWh produced will give us a competitive advantage over others in our industry.

### **4.0 Policies and Strategies**

To achieve these goals, we shall adopt the following best practices:

- Implement a Continuous Energy Improvement program:-
  - Replace heavy energy consuming street/ security sodium lamps with efficient LED lamps;
  - Use solar lighting systems in strategic areas of the University (Library, hostels, kitchen, dining halls and security lighting) as an alternative to reduce the use of diesel generator and electricity from the national grid;
  - Embrace the use of biogas for cooking, heating water and warming foods, and reduce use of LPG;
  - Use solar thermal heating systems in order to limit the use of charcoal, firewood and electricity from the national grid for heating and cooking especially in student hostels and the kitchens.

- Use our Continuous Energy Improvement program to support our overall training and Research goals, including improving production, quality, environmental stewardship, and safety practices
- Ensure that energy efficiency considerations are included in all aspects of our development planning, training, research and operations, consistent with sound development management practices and our responsibilities as a corporate citizen
- Ensure that employees and students are aware of and accountable for actions influencing energy management
- Purchase energy at the most effective cost and reduce energy usage where possible, consistent with our training business goals
- Establish and use energy efficiency objectives and targets to drive performance improvements
- Implement monitoring and reporting procedures to communicate our performance internally and to appropriate external parties
- Strive to continuously improve our energy efficiency performance, improve productivity, and reduce our environmental impacts through regular review of our activities
- Conduct technical and energy practice assessments to establish goals and track our progress

## **5.0 Policy Feedback Strategies**

To measure our results, we have established the following targets:

- As an initial objective for our first 36-month period, we will reduce our overall energy use by 30 percent from the average of the last 5 years' 20,000 kWh/-month to 14000 kWh per month
- To support our overall Continuous Energy Improvement program, within the next 5years we will reduce corporate energy use by at least 40 percent from our average of years' 2014-2018 of 20,000 kWh per month of facility occupation

We are committed to appoint an Energy officer who will double as a Director for the Centre of Energy, Technology and Innovations for energy data documentation from time to time, sensitization of the university community of the need for energy conservation, setting up and managing renewable energy projects and generally, smooth and efficient management of energy in the institution.

We are planning to reduce our energy costs by the introduction of the following renewable sources of energy:-

- Set up Biogas energy systems for both for heating and lighting systems
- Install Solar lighting systems
- Install Solar thermal water heating systems
- Embrace the search and use of biofuels
- Harness wind energy for water pumping and lighting systems

## **6.0 Conclusion**

At Maasai Mara University, we will also integrate energy policy research with several of our course programmes. For instance, students will be studying the impact of energy policy in connection with the emissions of pollutants from heating, transportation, power production of energy systems, and alternative fuels that may be linked to health effects or climate change. The focus is a holistic approach to integrating science and policy.

We will realize our Continuous Energy Improvement program goals and objectives by ensuring that all members of the organization support and participate in the implementation of this policy. This will be achieved through a continuous monitoring and evaluation processes through the Centre for Energy, Technology and Innovations.

## **7.0 Policy Revision**

This policy shall be reviewed after every 5 years cycle.