



SCHOOL OF COMPUTING AND ENGINEERING SCIENCES
MASTER OF SCIENCE IN SUSTAINABLE ENERGY TRANSITIONS
END OF SEMESTER EXAMINATION
MSSET 8104: Energy Policy, Laws and Regulations

DATE: 15th August, 2023

Time: 18:00-20:30 Hours

Instructions

1. This examination consists of **FOUR** questions.
2. Answer **Question ONE (COMPULSORY)** and any other **TWO** questions.

QUESTION ONE

(Total: 20 Marks)

Case Study 1

Kenya's 2010 constitution provided for the devolution of power to its 47 County Governments. Kenya's Energy Act (2019) subsequently mandated each county to develop a County Energy Plan (CEP). The CEPs are ten-year blueprints that will feed into the design of an Integrated National Energy Plan (INEP), whose Framework is currently under development by the MoEP. The INEP Framework has been developed in response to a changing national and global context for the energy sector. This includes the adoption of Sustainable Development Goal 7 on universal access to affordable, reliable and sustainable modern energy, the increasing impacts of climate change in Kenya, and the need to secure the country's energy future. INEP's vision is for energy services to be planned as enablers of Kenya's wider development goals, with increased engagement with stakeholders. CEPs should be aligned with both national sectoral plans (in key sectors such as agriculture, health, water etc.) and the County Integrated Development Plans (CIDPs) that are produced every five years.

Answer the following questions

- a. Your County has an ambitious plan of achieving 90% electric power connectivity by the year 2025, to connect the unconnected and improve accessibility of reliable power through, sustainable and affordable supply programme; a programme that require expansion of the existing power generation, transmission and distribution networks. As the County government chief energy planner, your team has identified stakeholders' engagement as the first activity towards realization of the CEP. Identify **four** stakeholders that you will engage in this discussion and for each of these stakeholders, identify **two** possible contributions/benefits from this engagement. *Copy table 1 below for your analysis.* (6 Marks)

Table 1

	Stakeholder	Benefits
1		
2		

- b. As the County government chief energy planner, which methodology will you choose between developing the plan in-house (*by county energy planners*) or contracting external consultants. Justify your choice. (2 Marks)

- c. Discuss the complex web that the county has to navigate in its energy plan and policy development in relation to the National Government, Energy Act of 2019, and the draft INEP Framework (3 Marks)
- d. Discuss the “Windows of Opportunity” in policy development in relation to case study 1 on County energy plan. (3 Marks)
- e. Discuss any three types of regulation that can be used to regulate energy sector. For each type, highlight two strengths and weaknesses each. *Use the template in table 2.* (6 Marks)

Table 2

No.	Regulation Type	Description	Strengths	Weaknesses

QUESTION TWO

(Total: 15 Marks)

Case Study 2

Read the following excerpt from Business & Human Rights Resource Centre (<https://www.business-humanrights.org/en/>) dated 16th July 2018 and answer the following questions

"Kinangop Wind Park loses Sh31b claim against GoK in London Court"

The International Court of Arbitration seating in London, has dismissed a claim against the Government of Kenya for over Sh31 billion that had been filed by Kinangop Wind Park Limited. The Tribunal in its award issued on 2nd July 2018 dismissed all the claims by the wind power firm but has reserved the final award on costs of the arbitration. The arbitration arose out of a proposed 60.8 Megawatt wind turbine farm to be located in Kinangop at a cost of US \$154 Million.

The project, which has since stalled due to community protests, was a Vision 2030 initiative, and sought to increase the generation capacity from 1.5GW to 5.6GW by the year 2022. The protests specifically centered on the lack of proper community engagement and sensitization, compensation of the people around the setback areas, relocation and the manner in which the land was leased. Kinangop Wind Park was seeking compensation and damages under the Letter of Support issued by the Kenyan Government for the erection of 38 wind turbines alleging that the government had failed to eliminate a political event emanating from the protests. The Government of Kenya on its part filed a defence denying the allegations and filed a counterclaim and an order for costs. The Tribunal in its ruling declared that there was no Political Event within the meaning of the Letter of Support and dismissed Kinangop Wind Park Limited's claims and request for reliefs.

- a. A power purchase agreement (PPA) is a legal (*binding*) contract between an electricity generator (seller) and a power purchaser (buyer - Offtaker) that defines the volumes and price for the delivery of electricity in advance. As a government, discuss **three** special areas to consider before entering into an agreement with an independent power producer (IPP) (3 Marks)
- b. Risks in the energy sector reflects on the uncertainty and volatility in the sector as a whole and must be evaluated at the project inception.
 - i. Discuss any 3 risks associated with PPAs (3 Marks)
 - ii. Identify a major risk associated with the project in case study 2 and discuss the possible causes that could have led to the dispute. Also, list possible mitigation measures Kinangop Wind Park could have used to avoid the conflict. *Use the template in table 3.* (3 Marks)

Table 3

No.	Risk	Causes	Mitigation Measures

- iii. There are four steps in energy risk management assessment that culminates into four possible risks levels. Explain these levels and show them in a chart of loss potential versus probability of occurrences. (3 Marks)
- c. Why was it better in case study 2 for complainants/plaintiff to use alternative dispute resolution (ADR) to resolve the dispute? *Highlight two possible reasons* (1 Mark)
- d. It is clear in this case that the plaintiff used the legal means to seek redress. Highlight 4 possible reasons why the complainants decided to choose litigation over arbitration process. (2 Marks)

QUESTION THREE

(Total: 15 Marks)

Case Study 3

As per the Nairobi City County website (<https://nairobi.go.ke/cleaning-nairobi-city-2/>, accessed on July, 2023) the population of the Nairobi city stands at approximately 5 million, with each individual generating about 0.62 kgs of garbage per day. It is approximated that the production will be 3,990 tons every day by the year 2030. Even though the Nairobi City County Solid Waste Management Bill of 2015 outlines procedures for collection and disposal of wastes, there have been challenges in effective collection and treatment of these wastes. As an Energy expert, you have been contracted by the County government to look at ways of generating energy from these disposals. From your research, you have discovered that the County Energy plan has incorporated the biogas energy generation by burning these wastes. Your work is therefore to develop an energy policy to address this issue.

Answer the following questions

- a. Briefly describe the six stages in Policy Making Process and show them in a diagram. (3½ Marks)
- b. The first two steps in policy making process are crucial for proper evaluation of the need for this policy. Evaluate the need for the policy in case study 3 by analysing these two steps in detail. (4 Marks)
- c. Policy analysis is a methodical/procedural approach that involves collecting and analysing information that clarifies the causes and effects of public problems and the likely consequences of using one policy against another. Discuss briefly the 6 steps involved in policy analysis in relation to the case. (3 Marks)
- d. A number of challenges exist in implementation and evaluation of policies. Some of these can be attributed to the gap between researchers/ initiators of the process and policy makers. These gaps include individual differences, institutional roadblocks, poor communication, and practical constraints among others. Suggest three ways of closing this gap and explain. (4½ Marks)

QUESTION FOUR

(Total: 15 Marks)

- a. For the renewable energy sources shown in Table 4 below, list 2 positive reasons for its development and two legal issues to consider when developing that resource. (6 Marks)

Table 4

No.	Source	Positives for development	Legal issues
1	Solar		
2	Wind		
3	Geothermal		

- b. “PPAs are tailored towards leveraging on the expertise and financial strength of the IPPs to drive the growth and development by providing power at agreed favourable and fair rates that benefits both the seller (IPP) and the off-taker and the country at large”. Discuss this statement (*in detail*) with respect to East African governments scenario. (*Use one country for you case analysis e.g. Kenya & use examples where necessary to justify your argument*). (6 Marks)
- c. Acquisition or mergers and greenfield investment are two types of foreign direct investment that can be used in the energy sector. Discuss **three** reasons why majority of cross-border investment involves mergers and acquisitions rather than greenfield investments. (3 Marks)