



**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)
GUIDELINES FOR ICT PROJECTS**

2025

Version: 1.0

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1. Introduction

The Communication Authority of Kenya (CA) is the regulatory agency tasked with facilitating the development of the Information and Communications Technology (ICT) sector in Kenya. This includes management of telecommunications, postal & courier services, radio communications, broadcasting and multimedia, electronic commerce, and cybersecurity. The CA also manages numbering and frequency spectrum resources, administering the Universal Service Fund, and safeguarding the interests of consumers of ICT services.

In the execution of its mandate and to foster collaboration both nationally and internationally, CA has entered into associations with other bodies and organisations, within and outside Kenya, considered desirable or appropriate for the furtherance of the purpose for which it was established.

Internationally, CA represents the country at the International Telecommunication Union (ITU), a United Nations specialized agency on ICT matters, which sets standards and develops best practices on several matters in ICT, including using ICT to ensure environmental sustainability and reduce the negative impact of ICT operations on climate.

Among the standards developed by the International Telecommunication Union (ITU) are the L series recommendations, on Environment and ICTs, climate change, e-waste, energy efficiency, construction, installation, and protection of cables and other elements of outside plant.

Notable contents of the L series recommendations include E-waste and circular economy; Assessment methodologies of ICTs and CO₂ trajectories; Adaptation to climate change; Low cost sustainable infrastructure, Energy efficiency, smart energy, and green data centres

2. Background to Environmental and Social Impact Assessment Reporting Guidelines

Provision of ICT services by CA licensed entities, in some instances, requires installation of various ICT equipment and infrastructure. Prior to the construction and installation of the said equipment and infrastructure, service providers must obtain an Environmental and Social Impact Assessment (ESIA) license from the National Environmental Management Authority (NEMA). The need for conducting an Environmental and Social Impact Assessment for ICT projects is a legal requirement, as provided for in the second schedule of EMCA CAP 387.

When submitting an ESIA report to NEMA, the applicant must ensure the report adheres to guidelines laid out in the Environmental Management and Co-ordination Act (EMCA), 1999, and its subsidiary regulations.

The Environmental Management and Co-ordination Act (EMCA), 1999, has also designated lead agencies such as a Government ministry, department, parastatal, state corporation, or local authority, in which any law vests functions of control or management of any element of the environment or natural resource.

By virtue of the Kenya Information and Communications Act, 1998, CA is therefore the lead agency on matters impact of ICT on the environment and therefore provides inputs to Environmental and Social Impact Assessment (ESIA) reports for ICT projects that have been forwarded to NEMA.

In recognition of this joint mandate, a Memorandum of Understanding (MoU) between CA and NEMA was ratified in 2011 to facilitate collaboration on ESIA reports and related environmental issues.

These guidelines, therefore, are a response to regulatory obligations placed on the ICT sector lead agency by the Environmental Management and Co-ordination Act (EMCA), where the sector lead agency, in this case CA, is required to develop Environmental and Social Impact Assessment (ESIA) guidelines for conducting sector ESIA assessments. These guidelines complement the guidelines laid out in the Environmental Management and Co-ordination Act EMCA and its subsidiary regulations.

3. Objective of the Environmental and Social Impact Assessment (ESIA) Guidelines

These guidelines aim to :

- i.) Establish a set of prerequisites and requirements prior to carrying out Environmental and Social Impact Assessment (ESIA) for ICT projects
- ii.) Provide for consistency in the content and format of Environmental and Social Impact Assessment (ESIA) reports of ICT projects
- iii.) Encourage Resource Efficiency and Circular Economy Principles

4. Scope of the Environmental and Social Impact Assessment (ESIA) Guidelines

This document provides procedural guidelines for the implementation of Environmental and Social Impact Assessment (ESIA) for the ICT sector. It describes procedural steps in the study, review, and decision-making process for ESIA reports by CA.

These guidelines will apply to all types of ICT projects and activities, including but not limited to communication masts and towers (e.g., BTS towers, Radio/TV broadcast towers), data centers, electronic waste management and recycling, among others.

This document does not in any way replace the requirements provided under EMCA and its subsidiary regulations and but rather complements them as far as ICT projects are concerned.

5. Principles of the Environmental and Social Impact Assessment (ESIA) Guidelines

The CA will evaluate the ICT sector ESIA report with regard to the attainment of sustainable development without degrading the natural resources and the environment. CA will evaluate ICT installations with regard to the following principles:

- a) Sustainable use of natural resources
- b) Enhanced protection and conservation of biodiversity
- c) Interlinkages between human settlements and cultural issues
- d) Integration of socio-economic and environmental factors
- e) Protection and conservation of the natural physical surroundings of scenic beauty, and the protection and conservation of the built environment of historic or cultural significance
- f) Comprehensive and inclusive public and stakeholder engagement
- g) Precautionary principle
- h) Intra and Inter-generational equity

6. Environmental and Social Impact Assessment (ESIA) Report Preparation

Environmental and Social Impact Assessment (ESIA) is a systematic analysis of projects, policies, plans, or programs to determine their potential environmental impacts, the significance of such impacts, and to propose measures to mitigate the negative ones. The output of an ESIA process is the ESIA report.

For purposes of compliance with these guidelines, the ESIA report for ICT projects shall contain:

- a) General Details

The report shall provide a detailed description of the proposed ICT infrastructure with:

- i. Satellite map of the project location and its environs with location coordinates.
- ii. Type and height of the proposed communication facility
- iii. on-site land uses and zoning, adjacent land uses and zoning
- iv. elevation drawings of the proposed communication facility, topography
- v. The setback distance between the proposed communication facility and the nearest residential unit or public areas.
- vi. Proposed equipment components.
- vii. Description of the proposed site or location, including whether there will be co-location or co-sharing
- viii. Assessment of project alternatives including: site(s), materials, technology
- ix. Electromagnetic Fields (EMF) measurements report

b) Statutory Requirements

The Environmental and Social Impact Assessment (ESIA) report shall be submitted with the attached documentation:

- i. Valid Environmental Impact Assessment/Audit (EIA/EA) Expert license from the National Environmental Management Authority (NEMA) for the expert/or firm.
- ii. Valid License from the Communications Authority of Kenya for the Owner/Operator of the proposed ICT infrastructure, where applicable.
- iii. Valid License from the Communications Authority of Kenya for the contractor of the proposed ICT infrastructure, where applicable.
- iv. Type Approval Certificate from the Communications Authority of Kenya for the proposed equipment for installation.
- v. Clearance certificate/license from the Local Authority/county government.
- vi. Clearance Certificate from other government agencies, e.g., Kenya Civil Aviation Authority (KCAA), National Construction Authority (NCA), Kenya Maritime Authority (KMA), etc., where applicable.

c) Visual Impact

The owners of the communication infrastructure should design the systems to mimic the hosting environment to minimize the visual impact of ICT installations. The Environmental and Social Impact Assessment (ESIA) report shall provide details on the measures taken to minimize the visual impact of ICT installations as follows:

- i. The considerations made with regard to the requirement that the communications infrastructure be camouflaged, as provided in any related guidelines/regulations of government agencies.
- ii. Considerations made to comply with installations in Special zones or environments, e.g., national parks, protected areas, etc.

d) Electromagnetic Fields (EMF) Exposure Standards

The Environmental and Social Impact Assessment (ESIA) report shall include measurements on Electromagnetic Fields (EMF) exposure as per the prescribed forms in Annex 1.

Measurements should include:

- i. Non-Ionizing Radiation (NIR) measurements at assigned carrier frequencies.
- ii. Radio Frequency(RF) radiation exposure measurements at project pre-installation.
- iii. Measurements should be taken at five distances as in the prescribed form in Annex 1.
- iv. Measurements will be recorded in Electric Field Strength (V/m), Magnetic Field Strength (A/m), and Power Density (W/m²).
- v. Projected Radio Frequency (RF) radiation exposure measurements at project post-installation, which shall be computed using international best practice that involves:
 - a. Using the best estimates of the 3D antenna pattern gain
 - b. Using the best estimates of system losses (i.e., feeder, combiner, connector, and antenna losses)
 - c. using reduction factors to account for attenuation of the Radio Frequency -Electromagnetic Fields (RF-EMF) through walls or windows
 - d. using of appropriate near-field calculation methods for areas close to the antenna
 - e. factoring in the different positions, tilt angles, and directions of the antennas at a site should be taken into account to ensure accurate estimations of the total Radio Frequency -Electromagnetic Fields(RF-EMF) exposure.

e) Site Sharing and Co-location

- i. The Environmental and Social Impact Assessment (ESIA) report shall include measures taken by the ICT infrastructure owner to carry out site sharing or co-location in instances that it is technically possible.

This site sharing or co-location will include:

- a) Towers/Masts
- b) Physical space
- c) Building
- d) Power

- ii. Where the above is not possible, owners of ICT infrastructure will be required to submit written documentation to show proof that site sharing and co-location are not feasible.
 - iii. For non-shared sites, the Environmental and Social Impact Assessment (ESIA) report MUST include the distance to the next existing site/infrastructure in the area from the location of the proposed site in meters and degrees.
 - iv. Additionally, an Operator who declines a request to site share or co-locate shall be obliged to give their reasons to justify such refusal to site share or co-locate in writing to the requesting Operator.
 - v. All masts/Towers intended for use in the broadcast of radio and/or TV signals shall be located at sites designated for broadcast transmitters.
- f) Stakeholder and Community Engagement

Public participation and stakeholders' engagement must be inclusive, comprehensive, adequate, and meaningful during the Environmental and Social Impact Assessment (ESIA) process.

Among the considerations for stakeholder and community engagement shall be :

- i. Stakeholder engagement shall be preceded by education on the proposed project, its positive and negative impact, with training content and material attached as an annex to the Environmental and Social Impact Assessment (ESIA) report.
- ii. Documented opinions from project-affected persons/groups/businesses and concerned government authorities regarding their concerns about the proposed ICT installation and how the concerns will be addressed.
- iii. All documented stakeholder/community input shall be easily verifiable with their names, verifiable identification details, mobile phone contact details, and signatures appended to their concerns/remarks.
- iv. Stakeholder/community input shall include residents, resident associations, local business/corporate entities, Local Non-government agencies (NGO's), local government, etc, as appropriate.
- v. Annex 2 contains the template for stakeholder engagement

g) Power

To reduce the ICT carbon footprint, it is recommended that the owner of the communication infrastructure installs green energy sources to promote environmental sustainability. The Environmental and Social Impact Assessment (ESIA) report should provide an analysis and ranking of alternative sources of energy and give justification for the selected option.

h) Carbon Emission Reduction

The Environmental and Social Impact Assessment (ESIA) report shall contain information on how the contractor will comply with the Communications Authority of Kenya's (CA) Carbon Emission Reduction framework during the construction of the ICT system, in addition to complying with applicable provisions of the Climate Change Act of 2025.

The report shall also include information on how the service provider will comply with the CA's Carbon Emission Reduction framework during operation, decommissioning, and disposal of the system and equipment.

i) E-waste Management

The Environmental and Social Impact Assessment (ESIA) report shall include information on the E-waste management plan during the construction, operation and decommissioning of the system. The hierarchy of mitigation should be applied hence avoidance, reduction, mitigation, and offset mitigation approaches should be followed.

j) Compliance with ISO 14001

The Environmental and Social Impact Assessment (ESIA) report shall include information to demonstrate the project user's compliance with the International Organization for Standardization (ISO), ISO 14001, in its operations, that cover construction, operation and decommissioning phases of the system. Among the compliance activities will include having an environmental policy in place, Environmental targets, the company's environmental program, assignment of resources and responsibilities for environmental sustainability for activities similar to the project being proposed.

Annex 1: Prescribed EMF Measurement Form

Measurements shall be carried out in accordance with International Commission for Non-Ionizing Radiation Protection (ICNIRP) 2020 guidelines, and the International Telecommunications Union (ITU) ITU-T Recommendations K.91, K. 52, K.61, K.70 and K.83 and any corresponding amendments.

Summary of Electromagnetic Field Readings (EMF) Levels around the (Service Provider)					
RF Transmission Site [<i>Location and Coordinates</i>]					
Date:					
Introduction: This report provides maximum electromagnetic field readings at various measurement points emitted from the existing and proposed ICT installation at [<i>site</i>]					
EMF Readings and Estimations					
	Existing Radio System (Readings)		Proposed Radio System (Calculations)	Cumulative (Calculations)	
	Service Type [<i>Broadcasting/ Telecommunication /PMR</i>]		Service Type [<i>Broadcasting/ Telecommunication /PMR</i>]	Service Type [<i>Broadcasting/ Telecommunication /PMR</i>]	
	Specific technology: [<i>GSM , UMTS , VHF, DVB-T , etc</i>]		Specific technology: [<i>GSM , UMTS , VHF, DVB-T , etc</i>]	Specific technology: [<i>GSM , UMTS , VHF, DVB-T , etc</i>]	
Distance from Carrier antennas (meters)	Electric Field (V/m)	Power Density (mW/m ²)	Electric Field (V/m)	Power Density (mW/m ²)	Electric Field (V/m)
0 to 50					
50 to 100					
100 to 200					
200 to 300					
300 to 400					
400 to 500					
NB: The readings should be done at a maximum height of 1.5m above the ground from the antennas. The estimated levels should be calculated on the maximum peak capacity anticipated for this site. The estimated EMF should not include possible radio signal attenuation due to buildings and the general environment, to ensure that the actual EMF levels will generally be significantly less than predicted					

Annex 2: Template for Stakeholder Engagement

Company Name	
Project Title	
Date	
Purpose	We are conducting a survey to gather feedback from stakeholders regarding the proposed construction of <i>{type}</i> installation in your area. Your participation is crucial to ensuring that the project aligns with community needs, addresses concerns, and meets regulatory requirements. Please take a few minutes to complete this questionnaire.

Section 1: Stakeholder Information

Stakeholder Name	
Contact Information	Phone Number: _____ Email Address: _____
Role/Position	- Resident - Business Owner - Local Government Official - Community Leader - Other (Please Specify): _____

Section 2: Awareness and Understanding

Are you aware of the proposed ICT installation in this area?	- Yes - No
If yes, how did you learn about it?	- Flyers/Posters - social media - Word of Mouth - Public Meeting - Other (Please Specify):
Do you understand the purpose of the ICT Installation?	- Yes - No

Would you like more information on the benefits and impact of the ICT Installation?	- Yes - No
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Section 3: Concerns and Feedback

What is your initial perception of the proposed ICT Installation?	- Support - Neutral - Oppose
What are your primary concerns regarding the ICT installation?	(Please check all that apply) - Aesthetic/Visual Impact - Health and Safety Concerns - Environmental Impact - Noise Pollution - Property Value Impact - Other (Please Specify): _____
Do you have any specific questions or requests related to the project?	
What suggestions do you have for minimizing potential negative impacts of the ICT installation?	

Section 4: Benefits and Opportunities

What potential benefits do you see from the ICT installation?	(Please check all that apply) - Improved Network Coverage - Economic Growth (jobs, business opportunities) - Emergency response improvements - No benefits - Other (Please Specify): _____
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Section 5: Preferred Communication Channels

How would you prefer to receive updates about the project prior to implementation?	- Email - SMS - In-Person Meetings
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	- social media - Other (Please Specify): _____
Would you be interested in attending future public meetings or consultations about the project?	- Yes - No

Section 6: Final Remarks

Is there anything else you would like to share with us regarding the ICT installation including any measures you would recommend to address community concerns?	
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Thank You!

We appreciate your time and valuable input. Your feedback will help us make Informed decisions and ensure that the project meets the needs of the community while addressing any concerns.

For further inquiries, please contact:

[Your Company Contact Information]

Name & Phone contact: _____

Email: _____