

6.0 MYTHS VS FACTS

Table 2: Myths Vs. Facts

Myths	Facts
1. All radiation is dangerous	Not all radiation is dangerous as it depends on the type and energy
2. Non-ionizing radiation can cause cancer	Non-ionizing radiation is not strong enough to change DNA structure. However, studies are still on going
3. 5G networks and Wi-Fi are harmful	Generally below international safety limits
4. Masts are not safe	Studies conducted show that radiation levels from masts are very low, hence generally considered safe

7.0 PROTECTION FROM NON-IONISING RADIATION

1. Ultra violet (UV) protection ;

- i) Use a broad spectrum sun screen (with SPF 30+)
- ii) Wear wide brimmed hats to shade the face, ears and neck
- iii) Wear UV blocking sun glasses

2. Radio frequency exposure protection

- i) Use hands free or speaker mode when making phone calls
- ii) Limit phone call duration
- iii) Avoid sleeping with your phone near you

3. Electrical safety for High Voltage power lines

- i) Maintain safe distances from high voltage power lines
- ii) Use proper wiring in homes

4. Infrared/Heat safety

- i) Use protective gear in industrial settings



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REGULATION OF SOURCES OF NON-IONISING RADIATION (NIR)

*Protecting the public and environment from dangers resulting
from non-ionising radiation*

1.0 LEGAL AND REGULATORY FRAMEWORK

Section 1 (3) of the Atomic Energy Act, Cap. 154, provides for the Council to apply provisions of the Act to sources of electromagnetic radiation other than ionising radiation sources. This provision gives the Council the mandate to regulate the safety aspects of non-ionising radiation sources and applications in Uganda.

In addition, Regulations on Non-Ionising Radiation, 2026 have been developed and gazetted in July 2026, providing a legal framework for the regulation, control and safe use of non-ionising radiation sources in Uganda.

2.0 NON-IONISING RADIATION

Non-ionising radiation is relatively low-energy radiation that does not have sufficient energy to remove electrons from atoms. This radiation lies in the lower end of the electromagnetic spectrum with frequencies ranging from 0Hz– 3PHz.



Fig 1: Non-Ionising radiation hazard

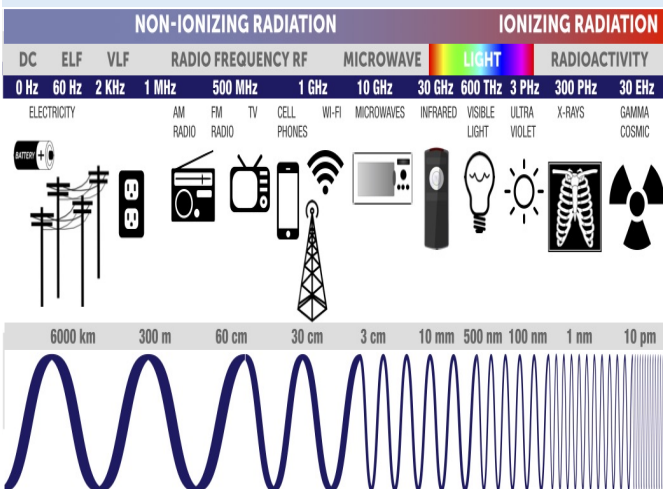


Fig 2: Electromagnetic spectrum

3.0 SOURCES OF NON-IONISING RADIATION

Table 1; Sources of non-ionising radiation

SN	Sources
1	Magnetic Resonance Imaging (MRI) Scanners (main magnet)
2	Electrochemical processes e.g industrial electrolysis
3	Nuclear Magnetic resonance spectrometers
4	Electromagnetic lifting crane
5	Tanscranial magnetic stimulation
6	High Voltage power transmission lines (33 kV and above)
7	Electric arc furnaces
8	Industrial induction heating equipment
9	Magnetic Resonance Imaging (MRI) switched gradient fields
10	Broadcasting systems and devices (AM radio)
11	Research radiofrequency systems
12	Magnetic Resonance Imaging (MRI) radiofrequency coils
13	Mobile telecommunication transmitters
14	FM radio and television antennas
15	Radar transmitters including aviation and weather systems
16	Satellite communication systems
17	Portable, mobile and handheld wireless communication devices
18	Diathermy equipment
19	Industrial dielectric heating systems
20	Industrial and domestic microwave heaters
21	Nuclear magnetic resonance spectrometers



Fig 3: Telecommunication masts



Fig 5: Satellite equipment

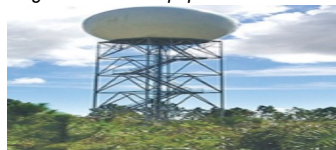


Fig 7: Weather Station



Fig 4: High voltage power lines



Fig 6: MRI equipment



Fig 8: Metal detectors

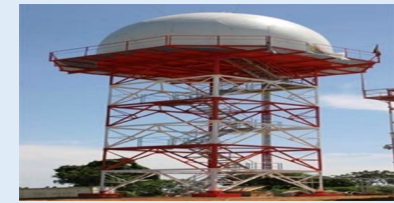


Fig 9: Radar System

4.0 EFFECTS OF NON-IONISING RADIATION

Biological effects: These mostly arise due to tissue heating of vulnerable organs such as the heart and brain which are too thick for effective heat release and the effects may include headaches, dizziness, nausea, cardiac distress, insomnia, nausea.

Non human related possible effects include stunted growth in plants, decolorized leaves, low milk production in cattle, low egg production in poultry, interference with air crafts etc.

Possible health effects may include blood cancer, glioma (cancer of the nerve and brain cells, Alzheimer's disease, eye cataracts and sterility. However, these have **NOT** been confirmed.

5.0 PROGRESS IN THE REGULATION OF NIR

Since 2020, the Atomic Energy Council has conducted Non-Ionising Radiation (NIR) safety assessments at about one thousand one hundred and eight three (1,183) locations across Uganda, as part of efforts to monitor and promote public safety around sources of non-ionising radiation.

The assessments primarily measured radiofrequency (RF) radiation exposure levels in public areas occupied by people, particularly areas located in the vicinity of telecommunication masts.

The measured RF exposure levels ranged from 0.00012% to 8.711%. These results indicate that radiation exposure at all surveyed locations was way below the maximum recommended public exposure level of 100%, in accordance with the International Commission on Non-Ionising Radiation Protection (ICNIRP) 2020 Guidelines, demonstrating that the measured levels were within the recommended safety limits for the general public.