

**Public Forum on Mobile Phones, Base Stations and Health  
Concerns, being Keynote address by Engr. Ernest Ndukwe,  
Executive Vice Chairman of the Nigerian Communications  
Commission, NCC, at the IT World International Conference,  
holding at Golden Gate Restaurant, Ikoyi, Lagos**

I wish on behalf of the organizers of this forum to add my voice of welcome to all participants at this very important event.

The discussion on the possible harmful effect that mobile phones could pose to users and the risk and effect of base stations on people near where they exist are no doubt on interest to all.

At the NCC we have committed to public safety and general well being of phone users. Both the Telecommunications Act and the Communications Policy provide copiously for the safety and protection of the consumers and mandate us to pursue same.

It is an interesting paradox how issues of development can sometimes spring its own line of argument. Developments in the country's telecommunications sector have escalated facility deployment in different parts of the country. Prominent among them are the base stations, which form the bedrock of wireless services provision in the country.

If by the year 2000, there were less than 500, 000 connected lines in the country and today the networks are recording a combined figure of about 68million lines, it only follows that the operators have also deployed facilities to support what could well be termed an unprecedented lift in subscriber base. Specifically for the mobile services, a very visible facility is the base station which has become evident on the country's landscape. Its proliferation has raising health concerns all over the world but has particularly been very loud in Nigeria. So here lies the paradox. Yesterday there were no phones, today, we are talking about health. But it is well. There is sufficient evidence to support this very harmless but very powerful statement: it is well.

Although initially, there were fears surrounding dangerous emissions from the mobile set itself, the attention has shifted to base stations which some people claim pose more danger. At the moment there are less than 15, 000 base stations in the country and fear basically arise from the electromagnetic field (EMF) or electromagnetic radiation (EMR) generated by these base stations. The truth though is that the number of base stations fall far below what is required to have a good and comprehensive radio coverage of the country

But to make another point here, electromagnetic energy consists of waves of electric and magnetic energy radiating through space, and traveling at the speed of light. The area where these waves are found is called electromagnetic field. The main source of electromagnetic energy is the sun, but man-made sources account for large amounts of the electromagnetic radiation in our day-to-day environment. Items such as hairdryers, electric ovens, fluorescent lights, microwave ovens, stereos, wireless phones and computers produce electromagnetic fields of varying intensities – Wireless Communications and Health, Ottawa.

Based on information from reported test results, the radiation emitted by a base station is far smaller than the radiation from a TV antenna. But speaking this way would make people see me as the regulator of the industry trying to defend a position.

This is the way the World Health Organization puts it after reviewing the background EMF levels from wireless systems and I quote:

“Recent surveys have shown that the RF exposures from base stations range from 0.002% to 2% of the levels of international exposure guidelines, depending on a variety of factors such as the proximity to the antenna and the surrounding environment. This is lower or comparable to RF exposures from the radio or television broadcast transmitters.”

Specifically on EMF levels in public areas, the WHO report also states that:

“Recent surveys have indicated that RF exposures from base stations and wireless technologies in publicly accessible areas (including schools and hospitals) are normally thousands of times below international standards.”

An Independent Expert Group on Mobile Phones in the UK also came to the conclusion that “there is no general risk to the health of people living near to base stations where the exposures are only small fractions of guidelines.”

As a regulator we affirm and stand by all international standards which conform to the International Commission on Non Ionizing Radiation Protection (ICNIRP) guidelines. The standard according to NCC documentation for towers and masts for telecommunications in the country is 42.3 volt meter (V/M). The translation matches the standard of the World Health Organization.

With about 68million lines in the hands of phone users in the country we should also be concerned about the health implications for those who constantly use mobile phones.

But are mobile phones harmful? Again let’s rely on what research has dug up.

“Most reviews have concluded that there is no evidence that wireless phones have any adverse effects. However, they also conclude that RF radiation in the wireless phone range may produce biological effects, and that more research is needed. It is important to note the difference between biological effects and adverse effects due to exposure to electromagnetic fields. Biological effects are detectable changes that occur in an organism, tissue or cell. They may or may not be harmful to the organism. They may even be advantageous, as in the case of sunlight acting on skin cells to produce vitamin D. adverse effects are harmful or detrimental to an organism and occur when the organism is unable to compensate for biological effects.”

Elsewhere people are so paranoid that they use what is called Radiation Shields. But these products have been declared as unnecessary, ineffective and unable to absorb RF radiation. The FDA in the United States has said that “these products generally do not work as advertised” and “the so-called shield may interfere with proper operation of the phone.” The Federal Trade Commission in the USA has charged companies selling these devices with making false unsubstantiated claims.

Most of the research in the industry are converged on the result that no conclusive evidence of harm or danger has been associated with mobile technology, whether through masts or mobile handsets. The World Health Organization has also aggregated a number of research works in the industry to agree with that

momentary conclusion. However, we must maintain an open mind and continue to monitor new research findings.

The option of antennas at roof tops of buildings have not been widespread in Nigeria because of power limitations in the country which dictate the use of generating sets to power all base station sites. A number of premises owners do not approved the installation of generating sets even when they don't mind antennas on their roof tops. For wireless communications, it is true to say that if a base station is not near enough to a phone user, then there can be no service. It is therefore important that base stations are safe since they must necessarily exist within population centres.

At the NCC we try to be proactive by taking measures that would prevent any unpleasant development. At the Commission there is a department responsible for ensuring that standardizing the handsets that come into Nigeria meet specifications that conform to international safety standards. The Technical Research and Standards Department is responsible for type-approving all the mobile phones that come into the country. The NCC is empowered to do this by law. And as a result we work with the handset manufacturers and big time vendors to ensure compliance.

However, I must I confess that this is a herculean task as the grey market or what some may call the bootlegging market which deals with unapproved sets in Nigeria is very big. Unfortunately, there is very little the Commission can do to secure our borders and all the other entry points into the country. I want to suggest that all arms of government must work together to check this kind of business which, though it offers some attractive prices, would end up short changing the unsuspecting individual.

In conclusion, I wish to commend the organizers of this forum for bringing these health concerns for discussion at this time. We at the NCC are here to listen and possible take away new ideas that may emerge from the discussion and debate today.

Thank you for listening to me. And God bless.