

# Submission to the Department of Health, South Africa – EMF National Report 2108/2019 by James C. Lech

The report by Mr J. C. Lech has been submitted to Mr Leon du Toit, Deputy Director Radiation Control, Department of Health South Africa and the DoH Information Officer, Mr Gerrit Wissing for inclusion in the annual EMF report to the World Health Organization. (The South African Department of Health is required to submit an annual EMF health report to the World Health Organization).

## Submission for SOUTH AFRICA EMF NATIONAL REPORT 2018 | 2019 By James Lech

### **General research activities related to EMF health: Completed:**

The research, constructing an EMF radiation HYGEIA <sup>1</sup> framework and model to demonstrate a public interest override (J.C. Lech, E. de La Rey, Prof. K. Krauss).

The government study developed a multidisciplinary framework and simulation computer modelling drawing input from several international standards and guidelines for non-native EMF (nnEMF) protection within the parameters of South African legislation, and scientific-technical analysis.

The study presented the demonstration of a public interest override function of ‘substances released into the environment’ and ‘public safety or environmental risk’.

The purpose of the study was to provide a demonstration how National, Provincial and Municipal divisions of government can cost-effectively model an appropriate nnEMF protection standard given an array of input parameters for a variety of iterative output scenarios and nnEMF technologies.

## **New and ongoing**

1. The research on how non-native electromagnetic fields affect mitochondrial performance and transcription through metabolic restriction, using quantum analysis (J.C. Lech).

The study will be examining the use of UV, IR, ELF, Static and RF native and nnEMF. The study's purpose is to develop further understanding into medical science's increasing knowledge in terms of epigenetic DNA playing a more influential role in nuclear DNA.

2. Research with the Department of Defence to help train doctors, improve soldier performance, training and military health services (J.C. Lech). The study will be examining the use of UV, IR, ELF, Static and RF native and nnEMF.

3. Research and development of a National On-line Continuous Spectrum, Radiation and Quality of Service Compliance Monitoring and Management (J.C. Lech).

The system will enable Continuous Monitoring of Cellular Radiation by Collecting Information Directly from the Radio Switch Networks of the Cellular Carriers Nationwide. A regulatory body could monitor all sectors around the country from his/her desk and receive all radiation related data from every antenna, everywhere in the country, 1500 time every second, 365 days a year.

## **New Policies and Legislation**

The Advertising Standards Association (ASA) of South Africa requested the lead author of the completed study (J.C. Lech et al.) to strengthen existing ASA policies and rulings in drafting new updated clauses for the ASA to be drafted into the Consumer Protection Act.

Parliament had started the foundational work of developing a Private Bill for a National EMF radiation protection standard.

The Kwazulu-Natal Provincial government is drafting Provincial planning and development Norms and Standards for electronic communication facilities.

Recently, in the High Court of Johannesburg, *Glassop & Granville v City of Johannesburg and Others*, CCT: 41869/2018, the Judge ordered a cellular base station powered down due to health reasons.

Recently, in the Constitutional Court matter *Trustees of the Simcha Trust v Da Cruz and Others; City of Cape Town v Da Cruz and Others* (CCT125/18; CCT128/18) [2019] ZACC 8 (19 February 2019) it was ruled that the Municipality must take into account consideration of the awarding of a permit as it may impact on surrounding property values. In the completed study (J.C. Lech et al.) it was found that property values in the immediate area could be impacted by nnEMF infrastructure.

In the study a proposed modelling solution was developed and discussed toward addressing this issue. Applicable to power lines, artificial light and cell towers in modelling the different configurations on the balance of drastically reducing the potential health impact and impact on property values.

Reviews of the study by Organs of State found the model could aid in accelerating the review processes for nnEMF infrastructure permit applications. The model enables a scientific analysis to each case scenario.

For a municipality, this significantly reduces the issues of subjective biases, user oversight or negligence. A reviewer's comment: "the proposed model provides the benefit of a more rigorous and fact based standard to assist in achieving transparent and accountable government in South Africa."

Areas of public concern and national responses from Organs of State following the review of the completed study (J.C. Lech et al.) recommend departments of Government to use the research in "measuring the impact of nnEMF because it will go a long way to set a scientific standard for assessing the seriousness of the environmental impact of such emissions". "The benefit of a more rigorous and fact based standard to assist in achieving transparent and accountable government in South Africa".

A scientific review panel of the NFR (National Research Foundation) found the relevance of the problem statement is convincing from the standpoint of the link between unregulated nnEMF exposure, environments, and

increased the risk of diseases to humans. The study (J.C. Lech) presented a strongly conceptualised proposal. The literature is thoroughly reviewed for key aspects of the study and adequate literature was cited in a way to show gaps to fill in the proposed research. The researcher diligently provided information in a very convincing and understandable manner. The project ideas are novel and will contribute to the generation of both new methodologies and new knowledge on the exposure of the nnEMF environment and the impact on increased diseases in the society. From reviews:” the completed and ongoing research is highly in-line with South Africa’s national strategies and that of many departments”.

Increasingly, communities have been strongly opposing the erection of cellular base stations and transmitters with municipal permits applications being retracted or denied and or renewals being denied. Found from the completed study (J.C. Lech et al.) the primary motivation behind the objection is the lack of required information submitted by the base stations installers and or lack of demonstrable regulation or monitoring of the base station. Reviewers explained, with there being no national nnEMF radiation exposure safety standard in South Africa, the argument is based on the false sense of safety associated with lack of a standard and consequently lack of surveillance of nnEMF exposure to the public. Because it cannot be denied that there is potential of harm from exposure to nnEMF radiation, legally binding exposure standards have been established in many countries worldwide. Technology is a very powerful tool with many benefits. However, when unregulated it can cause a great deal of harm.

It is impossible to make a device that has no risk but the law evaluates probably risks, and a permit or license is entitled if the probable risks are balanced out by the probable benefits. In the case of permit applications, in the applicant’s refusing in providing the needed and correctly elaborated information, it is impossible to state if a potential site poses a probable risk or not.

The review by the NRF recognised the link between unregulated nnEMF in environments and the increased risk of diseases to humans. The completed study (J.C. Lech et al.) on nnEMF radiation dosimetry and models increasingly suggest that even a tiny increase in the incidence of diseases resulting from exposure to nnEMF radiation could have broad implications for public health, social accounting and the economy.

Following review of the completed study (J.C. Lech et al.), the African Christian Democratic Party (ACDP) has been campaigning and providing

assistance to communities advocating against the erection and operation of unregulated nnEMF exposure in South Africa, calling for the application of a standard in-line with Christian principles and risk-threshold values.

### **New/Ongoing Public Information Activities**

1. Both in the public and private sector national CPD talks are being conducted (J.C. Lech) to train doctors in nnEMF related diseases, diagnosis, latest research and developing treatment protocols.
2. A national radio show (J.C. Lech) and publication of articles in magazines regularly explain the differences between the nnEMF categories of light, Static, ELF and RF sources; provide information on the latest research from multiple disciplines in a manner that is understandable to the public. The aim of the information is to help calm public speculations and concern in aiding the public to better understand nnEMF hygiene, responsible use of products and how to develop a regulated nnEMF exposure environment for different vulnerable population categories.
3. The South African Society of Integrative Medicine (SASIM) has requested the assistance of the lead author of the completed study (J.C. Lech et al.) to aid in drafting an nnEMF hygiene and guideline booklet for its members and their patients.

<sup>1</sup> Hygeia originated from the Hippocratic Oath representing a public health model that focuses on prevention in the context of public interest. Using census block data the HYGEIA model can be used to assess the vulnerability of various demographic groups over time and location and to forecast morbidity and mortality under variable conditions of current and future climate change as well as under conditions that mitigate EMF radiation extremes. vulnerability of various demographic groups over time and location and to forecast morbidity and mortality under variable conditions of current and future climate change as well as under conditions that mitigate EMF radiation extremes.

