International Advisory Committee
of the International EMF Project

11-12 June 2009

EMF Project/activities in Lebanon

1. Ministry of Public Health

Upon the request of the Council of the prime Minister, a national committee on the Impact of the Electromagnetic Fields on Public Health in Lebanon was established at the Ministry of Public Health and WHO Country Office is designated to be a member of this committee.

WHO Country Office assisted the Ministry of Public Health by coordinating the work of the National committee and by preparing a literature review report entitled "Effects of Extremely low frequency electromagnetic fields on health- Background information and literature review" including recommendations. This literature review document is based mainly on the conclusions and recommendations of the health risk assessment undertook by WHO task Group Scientific experts which are presented in the monograph: Environmental Health Criteria 238, extremely low frequency fields, 2007.

WHO Country Office also assisted the Ministry of Public Health, as per its request, in the preparation of the summary and the conclusions of the above-mentioned report in Arabic in order to assist the country in drawing conclusions and taking decisions regarding this issue to protect the health of Lebanese population.

This issue is particularly pressing in the developing countries, like Lebanon especially that the country has small superficies / area making difficult to allocate isolated land dedicated to construct overhead lines. This would make the rates of exposure of the population high. Recently, the projected passage of high-voltage power lines (HVPL) within less than 60m from residential areas in several parts of Lebanon raised public fears and generated a debate in the media.

The conclusion drawn from the above-mentioned report indicated that it is unlikely that conducting a study on the health effects of the ELF fields in Lebanon will change the conclusions and findings of the WHO Task Group review of the health implications of ELF fields (WHO, 2007) and the updates reviews on the health effects of ELF EMF published in 2002 by the International Agency for Research on Cancer (IARC). However, it is interesting to undertake, if possible and as indicated in the meetings of the Lebanese National committee on ELF fields, an epidemiological study to measure the association between the occurrence of childhood Acute Lymphoblastic Leukemia (ALL) and ELF field exposure in the country. It should be noted that the conclusions to be drawn from such a study should be cautiously and prudently considered.

The objective of the study would be to measure the association between the occurrence of childhood Acute Lymphoblastic Leukemia (ALL) and residential EMF exposure to electro-magnetic fields.

2. Ministry of Environment

Concerning physical pollution by the electromagnetic waves, the Department of the Environment prepared and carried out a project to study the effect of the electromagnetic fields on the public health .

This project comprises three axes of work. The first consists in taking measurements of magnetic fields generated by the electric cables, the transformers, the power stations and the generators of district.

The second axis in collaboration with the ministry for the health which studies the correlation with the diseases as a private individual lymphoid leukaemia in the children

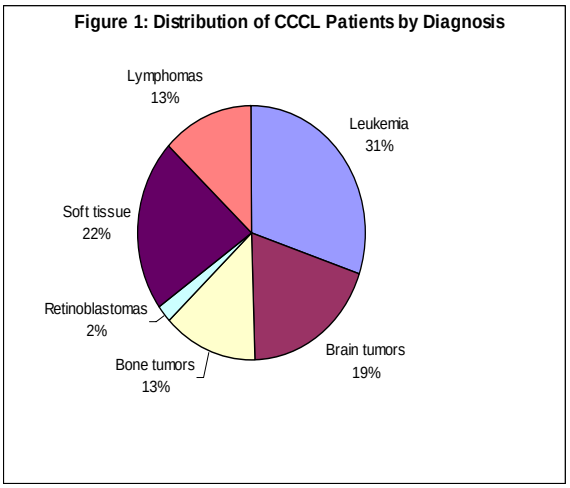
The third axis with the collaboration of the EDL which consists in making a theoretical study according to the source data.

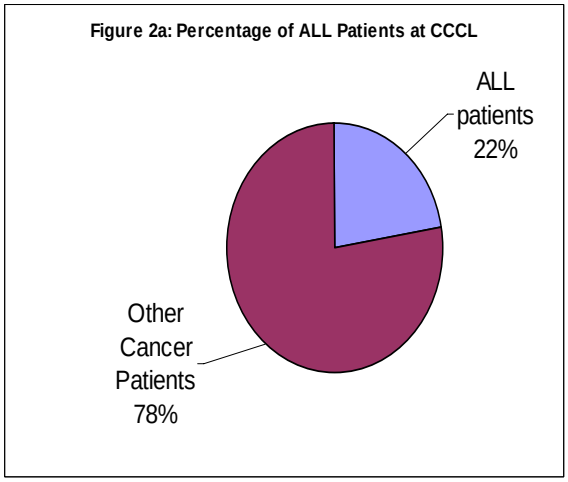
A pilot study is already started which consists in taking measurements of fields in the dwellings at the risk.

In addition the ministry studies the new recommendations of HAVE concerning the antennas of transmission of waves RF and the portable telephone under the large title of the prevention first knowing that no serious study showed anything until now.

3. The Children's Cancer Center of Lebanon (Childhood Leukemia and Extra Low frequency Magnetic Field)

The Children's Cancer Center of Lebanon (Figure1) stated in the meetings of the National Committee that Acute lymphoblastic leukemia was the most common tumor diagnosed diagnosed at the Children's Cancer Center of Lebanon (Figure1).





4. Study of the impact of the electromagnetic fields Generated by the overhead lines (Summary of the Electricity of Lebanon (Electricite du Liban (EDL) Study)

As part of the extension project of the Lebanese transmission system, EDL solicited Electricite de France (EDF) to prepare a study concerning the impact of the electromagnetic fields (EMF), which are decomposed into electrical fields and magnetic fields (magnetic induction), generated by the overhead lines 220KV and 400KV, constructed or under construction.

In a first stage, this study aimed to present the normative documents and state of art of public exposure to electromagnetic fields.

In a second stage, some simulation was realized on four places selected by EDL, critical for the completion of the Lebanese transmission system 220KV and 400KV, on lines Bsalim - Aramoun, Aramoun - Sofar, Bsalim - Bhsas and Ksara - lebano-syrian frontier.

The results of measurement campaigns of electromagnetic fields on lines 220KV in service Zahrani – Saida - Aramoun allowed to validate the result simulated on the other lines. Finally, the distances in comparison with the buildings of the future lines from the existent plans provided by EDL were verified.

Concerning the state of knowledge on the electromagnetic fields, many expertises have been realized over the last twenty years, on the effect of EMF on health, by some official organisms such as the WHO (World Health Organization), the Academy of American Sciences, the National English office of radioprotection and the International Research Centre for cancer.

This expertise concludes, on one hand, the absence of proof of a significant effect on health, and agree on the other hand, to recognize that EMF does not constitute a public health problem.

This expertise allowed to international instances such as the International Commission of Protection against the non ionizing radiation or The European Commission to establish recommendations relating to the public exposure to EMF.

The reference value for measuring electric and magnetic fields specified in the European recommendation of 12 July 1999 relating to the limitation of public exposure to electromagnetic fields guarantee a “high level of protection of the public health”.

- Limit in magnetic induction 50 HZ: 100 µT (80 A/m).
- Limit in electrical fields 50 HZ: 5KV/m.

The European Council affirmed that the restrictions “were realized after thorough review all scientific published documents” and that the recommendation take in consideration “a

safety factor, approximately 50, compared to the established effects (excitation of cells) of low frequencies EMF on health and also guarantees long-term effects".

Concerning the campaign of measurement and simulation on 220 KV and 400 KV lines in Lebanon, the choice was made to position itself systematically under very constraining hypotheses regarding electromagnetic fields.

The measurements and simulations were realized closer to the cables, on the roofs of buildings when it was possible, and for acceptable maximum intensity which are very superior to the maximum intensity envisaged in the Master plan.

In conclusion, despite these very stringent hypotheses, the study shows that the results are less than the limits fixed by the European recommendations.

Recently, the projected passage of high-voltage power lines (HVPL) within less than 60m from residential areas in several parts of Lebanon raised public fears and generated a debate in the media. The Ministry of Public Health (MOPH), noting that HVPL were already in place near or through other residential areas in Lebanon has decided to measure the potential risk already posed to the exposed population. This proposal seeks to fulfill this mandate. The goal of this work would be to support MOPH in responding to public demand and in elaborating norms against potential hazards associated with EMF exposure.