

Electromagnetic fields and health impact: measurements, monitoring and environmental indicators

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Abstract

During the last 10 years there has been a remarkable growth of the attention for problems related to the electromagnetic pollution, motivated by the alert connected to potential risk for the health of persons and due to the increasing diffusion of BTS for mobile telecommunication as EMF sources.

Many projects are being realized about the environmental and health impact of electromagnetic field and an important social role is played by specific actions to minimize the risk perception of the population.

This study aims to find an innovative approach to these problems through the use of a system of continuous time monitoring of the electromagnetic fields and the individuation of appropriate environmental indicators.

The proposed system monitors the electromagnetic fields continuously over time, and is already operating in many southern Italian cities. It works in a very efficient way as a mean for:

- **Info to the citizens**, thanks to diffusion of daily collected data on Internet WEB.
- **Control for local administrations and Authorities**, due to capability of the system itself to alert when measured values exceed the limits reported by the Italian laws.
- **Planning**, for the implementation of :
 - new procedures agreed among local environmental control agency, local administrations and mobile Companies for network planning and management of alarm situations;
 - new local guidelines documents concerning the installation and operation of telecommunications apparatus.

Moreover, starting from the general principles of the Strategic Environmental Evaluation (VAS), the environmental impacts of EMS field is studied. Based on the model DPSIR (Drivers, Pressure, State, Impacts, Responses), 12 environmental indicators have been chosen

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providing an immediate and understandable tool to obtain very important informations on electromagnetic pollution generated by radio-telecommunication systems.

The selected environmental indicators have been applied to 11 cities of the Region Campania (south Italy), providing important indications about environmental impacts on the territory. Moreover they also facilitate the understanding of policy actions of local governments with its strengths and weaknesses. The found results are of primary importance in the management, planning, monitoring and reduction of risk perception of the population against electromagnetic pollution.

KEYWORDS: Measurements, monitoring, risk analysis and communication