The impact of public policies on EMF exposure and wireless broadband growth

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The impact of policies considered to be precautionary

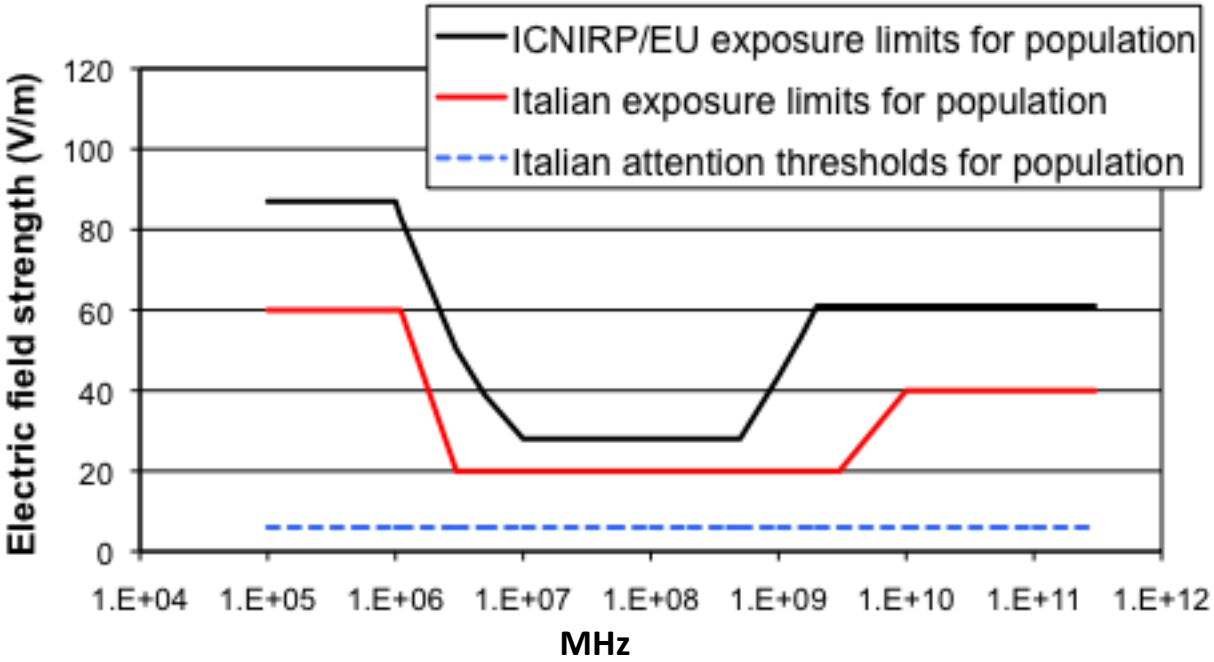
- The Italian regulatory framework dates back to 1998, before the issuing of ICNIRP Guidelines and European Recommendation 1999/519/EC.

- **Regulators privileged a cautious approach** to give response to the emerging public concern, **rather than endorsing evidence-based protection policies**.

- Subsequent regulatory evolution in 2001 and 2003 confirmed the original framework and **reaffirmed the role of political choices over scientific guidelines**.

Fundamental of the Italian Regulation

- The Italian law is based on **3 different protection levels**, expressed in terms of **radiometric** quantities (e.g. Electric field) averaged over **6 minutes** intervals:
  - **Exposure levels**, aimed at ensuring protection against acute health effects
  - **Attention thresholds** for the protection against possible long-term effects
  - **Quality targets**, which realises in fact the *prudent avoidance* approach



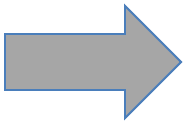
All the 3 different protection levels set limits well below ICNIRP thresholds

Authorisation and control

As for exposure assessment due to SRBs the law foresees **two separate steps**

AUTHORISATION
BEFORE THE SRB DEPLOYMENT

As common offices, Agencies adopt **cautious assumptions** for theoretical simulation in the authorisation process (e.g. maximum emitted power, free space conditions, etc.)



CONTROL
AFTER THE SRB DEPLOYMENT

On-field controls are realised through measurement campaigns; measurements are actually performed for a subset of SRBs

Practical fall-out of the Italian approach

- The application of the Italian law affects the EMF exposure and wireless broadband scenario in a number of ways, among which:
  - **Significant local differences between theoretical and actual exposure levels**, due to the cautious assumption adopted in the authorisation process.
  - **Exposure levels over the landscape much lower than imposed thresholds**
  - **Additional constraints on networks layout and sub-optimal network plan** (mobile terminals not working with the lowest possible power emission)

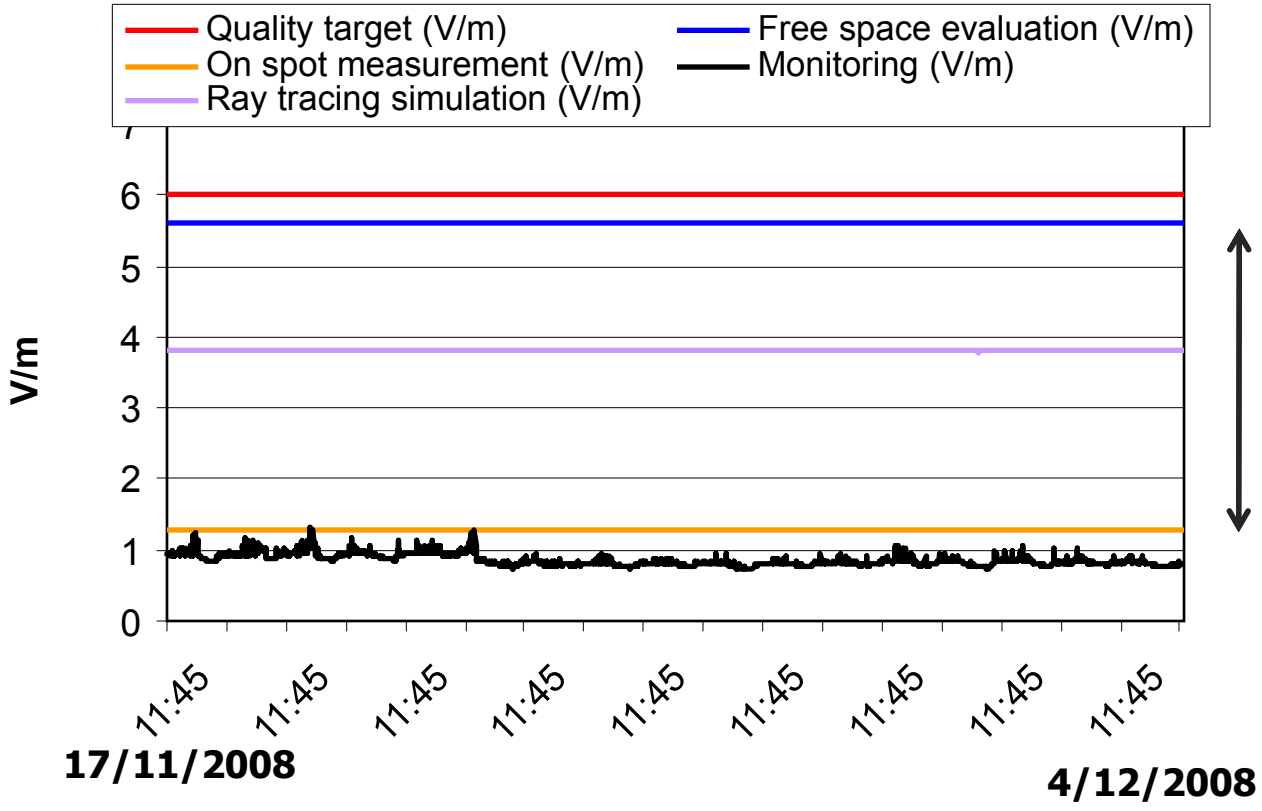
Fall-out: Authorisation vs control

Analysis on the front building:
observation point B – high floor balcony

On spot measurements

Monitoring

Fall-out: simulation vs measurements



Gap between simulation (**authorisation**) and measurements (**control**)

Observation point B

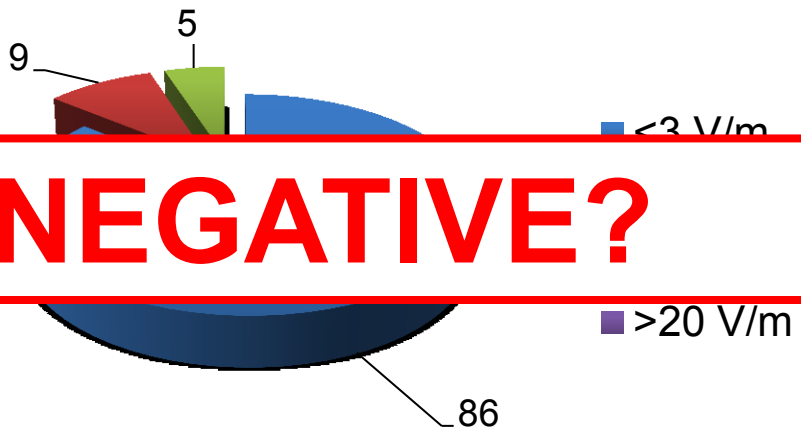
Fall-out: exposure over time

- Common procedures adopted for authorisation reflects in EMF exposure levels **significantly lower than imposed thresholds**, which remain stable over years**.**

In Piedmont more than 80% of samples are below 3 V/m.

Source: FUB 2006

Source: ARPA 2010

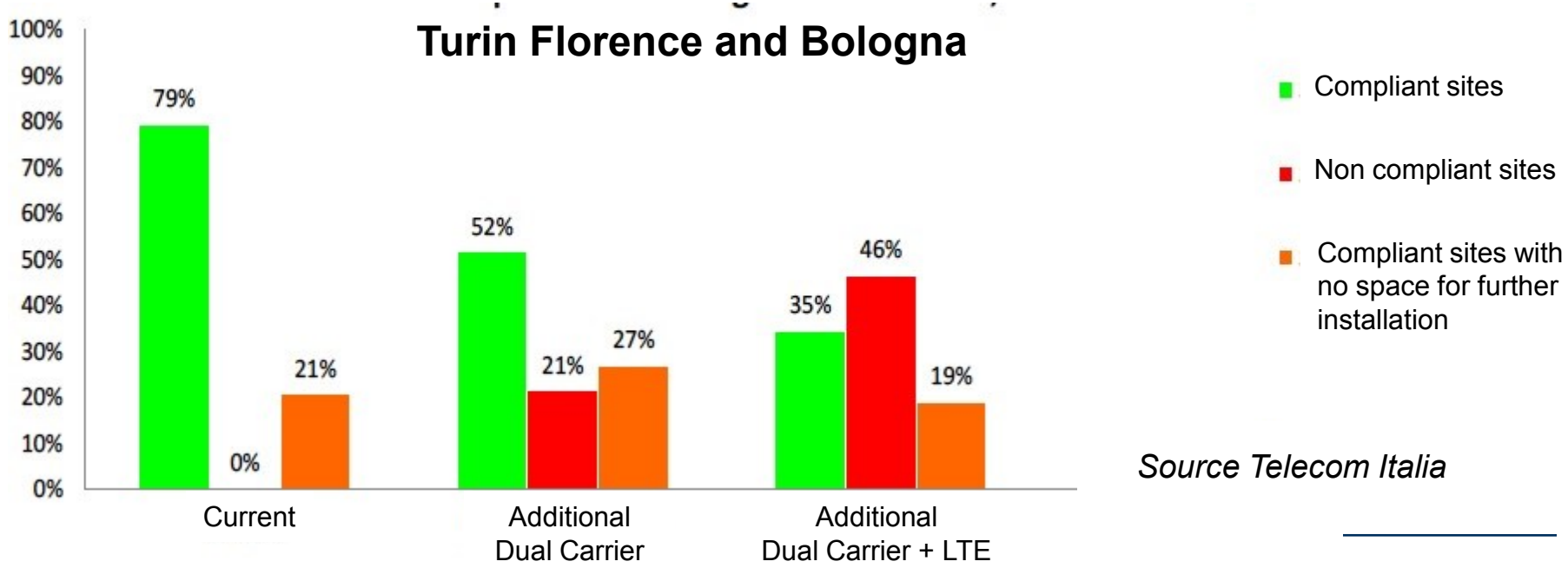


POSITIVE OR NEGATIVE?

EMF exposure levels in Piedmont have been considered for comparison between results from the Italian national monitoring network (dismissed as a whole in 2006) and from ARPA monitoring activities.

Is there 'electromagnetic room' for new technologies on the existing SRB?

- Strict assumptions for authorisation pose additional **undue and unnecessary constraints** on wireless broadband network deployment.
- As an example, **20% of current sites in Bologna** cannot support the installation of any further technology (from data supplied by ARPA).
- Similar claims come from MNOs:



Source Telecom Italia

The need for evolution in regulation

- The evolution of regulation represents an ambitious challenge in a **public concern-limited** scenario.

- Difficult fulfilment of different requirements:
  - Public health safeguard
  - Feasible application of procedures foreseen by the law
  - Wireless broadband growth

- A Working Group composed of several Ministries (Economic Development, Environment and Health) and technical bodies (FUB, ISPRA/ARPA) was set up to suggest possible alternative solutions to the Regulator.

- The WG adopted the **Impact Assessment** methodology.

Impact assessment

- "**NO CHANGE**" scenario taken as reference for comparison with possible regulatory evolution
- Evaluation criteria for comparison and assessment of possible pros&cons:
  - **Impact on health and environment**
  - **Potential effect on public concern**
  - **Feasible application of procedures for authorisation and control**
- Alternative scenarios:
  1. Exposure assessment referred to 24-hour instead of 6-minute intervals
  2. Exposure assessment referred to 4-hour instead of 6-minute intervals
- **Adoption of ICNIRP/EU limits was considered as an unviable alternative.**

Impact assessment outcome: pros&cons

		NO CHANGE	24-hour intervals	4-hour intervals
Need for amendment of regulation in force		NO	YES	YES
Additional burden on Environment Agencies for authorisation and control		NO	YES	YES
SRB co-siting opportunities for new technologies		LOW	HIGH	MEDIUM
Risk of possible raise in public concern	**wrt raise of exposure thresholds**	ABSENT	HIGH	MEDIUM
	wrt number of new masts	MEDIUM	LOW	MEDIUM
New guidelines for the application of regulatory provisions		YES	YES	YES
Need for specific measurement equipment		NO	YES	YES

The application of new rules: a long path?

- For the thorough application of the recently revised regulation (Oct 2012), some provisions have still to be issued:
  - National and Local Agencies for Environment Protection ((ISPRA/ARPA) are in charge of the development of Application Guidelines.
  - CEI (Italian Electrotecnic Committee) is completing relevant updated technical norms, for the proper application of the revised regulation.

- Both Application Guidelines and CEI technical norms are expected to be issued by the first semester of 2013.

Lessons learnt

- Costs of precautionary policies in terms of social impact and additional burden for economic growth.
- Once applied, precautionary policies represent a no-return path.
- Even in front of new regulatory provisions still very distant from ICNIRP/EU guidelines, there is an air of general worry on possible response from the public, which may condition the application of the law.