

## ENVIRONMENTALISTS VS SCIENTISTS: TWO CASE STUDIES IN SCIENCE COMMUNICATION

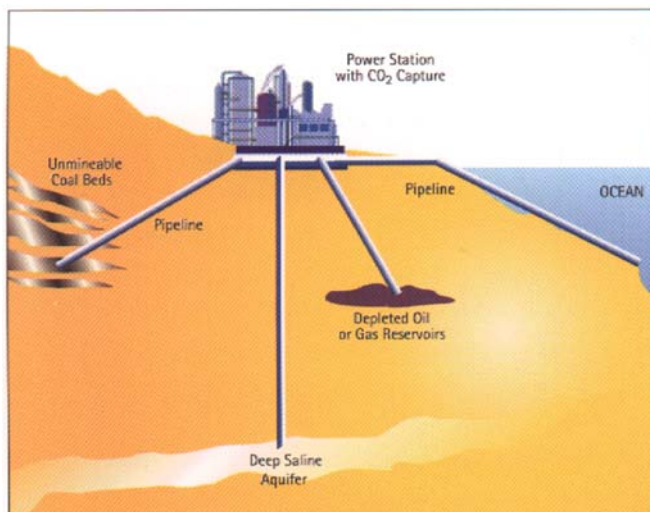
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### **Abstract**

How much environmentalists influence people when science is involved? To this aim I will consider institutional communication and press clips available online, related to two case studies in my country. The first case, Geological Carbon Sequestration (GCS), is a high-tech solution internationally studied to solve global warming, almost unknown to Italian public. The second case concerns the possible health effects of exposure to Electro-Magnetic Fields (EMF) that in Italy has been the cause of deep controversies among environmentalists, scientists and politicians. Both these cases show an important influence of environmentalists on people and institutions and a great difficulty for scientists to address their message to society.

**Key words:** Environmentalists, scientists, public



**Fig1** Different options for GCS

## Text

### Introduction

In August 2002 I have published an article in a popular science magazine concerning GCS, a technique studied by my colleagues of Fluids Geochemistry Laboratory [1]. The international scientific community is studying the possibility of storing in some geological sites (see Fig.1) the CO<sub>2</sub> coming from sources contributing to global warming. Satisfied by my article, my colleagues invited me to attend an outstanding conference in Kyoto, where, in the controversial case of ocean storage, scientists themselves were presenting case studies in public and institutional perception. Environmental organisations were considered the main cause of experiments' refusal [2][3]. When invited to a workshop on risk perception in the framework of an Italian project devoted to the safeguard of men and environment from the EMF[4], I found again scientists facing the difficulty of addressing their message to people. From my part, I had to conclude that an honest confrontation with the environmental organisations is a good a starting point, and now I am glad to realize that Legambiente is promoting the debate[5]. In the present paper, I will analyse some records obtained browsing the web with the aim of better investigating the relation between the two and their influence on people. The research is limited to online records and to my country.

### Methodology

To obtain items I have visited the online press archive of the Italian Chamber of Deputies and of the Civil Protection; the Italian web sites of Greenpeace, WWF and Legambiente; those of ENEA, INGV and Enitecnologie, and the site of "Elettra 2000", a consortium of scientists working on EMF health effects. For further records I have sometimes used google. In the second case, I have considered highly significative the year 2001 since the Italian parliament was discussing the Law on Elettrosmog, while a legal controversy between Radio Vaticana and the citizens of Cesano (Rome) was creating a big political turmoil.

### Main results

With a totality of 23 significative scores in the time-interval going from the year 2000 to April 2004, it is clear that GCS is not so much popularized, even if from one of the few clips scored we learn that experts are ready to choose sites where conducting experiments. It is noteworthy that only in Greenpeace web site, we read that they will contrast the introduction of the "Clean carbon" and consequently this technique. Most of the scores come from online magazines. I have summarized the different positions (see Table 1 below).

Favourable	Not Favourable
Press clips scored in my research are mainly positive about it.	Online records are also negative <ul style="list-style-type: none"><li>• It will not solve the problem</li></ul>

<ul style="list-style-type: none"> <li>• The technique, considered safe from many studies, will allow reducing CO<sub>2</sub> emission in time with Kyoto parameters.</li> <li>• It is encouraged by Kyoto Protocol</li> </ul>	<p>cause the gas will be released again in the atmosphere even if in geological times</p> <ul style="list-style-type: none"> <li>• It is quite expensive. Capturing and storing the gas will require further energy supply</li> </ul> <p>Environmentalists affirm that:</p> <ul style="list-style-type: none"> <li>• The use of this technique will encourage our dependence on carbon fossil fuels</li> <li>• It is a solution industry promote to keep on polluting</li> </ul>
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**Table 1** reports the different opinions on GCS obtained in the present research. Note that environmentalists' opinions come mainly from other countries.

Concerning elettrosmog, it is really controversial the message addressed to people. A confrontation between the Legambiente Faq[6] and those of "Elettra 2000" experts[7] is illustrative of the two different approaches (see Table 2 below).

Legambiente	Elettra 2000
<p><i>What risks are associated to people's exposure to EMF?</i></p> <p>...</p> <p>Some studies have shown a high incidence of cancer and leukaemia compared to the normal referring average in population living near radio and television systems and exposed to electric fields major than 60V/m...</p> <p><i>What steps can I take to reduce my exposure to EMF?</i></p>	<p><i>Are there evidences of long-term effects due to Radio Frequencies Radiations (RFR) exposure?</i></p> <p>According WHO, in the present scientific literature there is no evidence that RFR exposure reduces human life expectation, or causes cancer...</p> <p><i>Cellular phone with integrated antenna are more dangerous than the</i></p>

...	<i>traditional ones?</i>
Avoid cellular phone with integrated antennas.	No. Shape and dimensions of cellular phones are not fortuitous...in cellular phones with integrated antennas the best performance can be obtained that way.

**Table 2** shows some deeply contrasting answers to similar Faq.

An analysis of the press clips scored in the time interval going from 1999 to 2003, shows that newspapers have emphasized the political debate and the legal controversies between citizen committees and antennas and radio basis owners. In March 2001 a letter signed by outstanding scientists has clearly introduced their point of view in the communication addressed by the press to the public. The letter content is well reported by an American journalist [9]. I have summarized the main arguments in the following Table 3:

Scientists	Environmentalists
<ul style="list-style-type: none"> <li>• The WHO does not even list EMF among the 385 agents clearly causing cancer</li> <li>• The 40 per cent of cancers is due to unknown causes</li> <li>• There is also an elettrosmog business based on environmental issues</li> </ul>	<ul style="list-style-type: none"> <li>• Italy has a sad supremacy: 60.000 radio and TV antennas compared to the 10.000 in the Usa</li> <li>• We should avoid what happened with studies on lung cancer caused by asbestos exposure: Law arrived 40 years later with many victims</li> </ul>

**Table 3**

## Conclusion

Why in Italy there is not a public concern on GCS? The answer is that since environmentalists are not taking so much care about it, nobody worries and the press can be positive. On the other hand, Elettrosmog controversy shows that environmentalists have driven the political debate even if scientists have taken a public position. The limits for the level exposure in my country are the most severe. Compare, for instance, for RFR (Radio, TV, Cellular phones) the 6V/m for Italy and the 60V/m for France, Germany and Great Britain. If it is generally accepted the influence of the media on people's risk perception, the relation between the media and the environmental organisations towards the public requires more attention in the future to promote a debate where scientists could also be efficaciously involved.

## References

- 1) Lanza, T. (2002). Un sequestro per salvare il pianeta. *Newton*, (8) 121-126.
- 2) Haugan P.M. (2003). On the production and use of scientific knowledge about ocean sequestration. In J.Gale-Y.Kaya (ed) *The 6<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*, (pp. 719-724), Kyoto.
- 3) De Figueiredo, M.A., Reiner, D.M., and Herzog, H.J. (2003). Ocean carbon Sequestration: a case study in public and institutional perceptions. In J.Gale-Y.Kaya (ed) *The 6<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*, (pp. 799-804), Kyoto.
- 4) University of Rome "La Sapienza" (2003, March). *Giornata di Studio "Comunicazione e percezione della scienza e del rischio"* retrieved from [http://www.emprotect.enea.it/html/Eventi/Conclusi/Convegno\\_14\\_03\\_2003/](http://www.emprotect.enea.it/html/Eventi/Conclusi/Convegno_14_03_2003/)
- 5) Cini, M (2003). Relazione introduttiva. University of Rome (2003, April). *L'Ambientalismo e la scienza: nemici o alleati?* Retrieved from <http://www.legambiente.com/documenti/2003/0422RelazioneCiniAcqua/cini.php>
- 6) Legambiente (2002) *Elettrodomande sull'inquinamento elettromagnetico* retrieved from [http://www.legambiente.com/documenti/2002/0117\\_elettrodomande2002/elettrodomande.php](http://www.legambiente.com/documenti/2002/0117_elettrodomande2002/elettrodomande.php)
- 7) *Raccolta di domande risposte a cura del Comitato Scientifico di Elettra 2000* retrieved from <http://www.elettra2000.it/faq/fage2.htm>
- 8) Trofimov, Y. (April 10, 2001) Italian scientists attack politicians for support "electrosmog" Law. Wall Street Journal retrieved from [http://www.cidis.it/articoli/cem/italian\\_scientists\\_attack\\_politi.htm](http://www.cidis.it/articoli/cem/italian_scientists_attack_politi.htm)