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1. Revolt has long been interested in superconducting (try our site-search). The futurist technology offers great efficiency in power systems and particular advantages for buried cables in grids. While there have been prototypes for high voltage power transmission, the real thing has been a long time coming. Now your favourite magazine Transmission and Distribution World reports "On April 22, 2008, the world's first high-temperature superconductor (HTS) power transmission cable system in a commercial power grid was energized on Long Island". These are just 600 metres long 132kV cables able to carry 574 MW, but it's a start.  
[http://tdworld.com/overhead\\_transmission/lipa\\_energizes\\_worlds\\_superconductor/](http://tdworld.com/overhead_transmission/lipa_energizes_worlds_superconductor/)

2. The Interphone project is a 13-country set of epidemiology studies on tumours and mobile phone use. Some partial results have been published but the greater part, along with the overall assessment, is still awaited after almost three years. Microwave News surveys the scene of splits and acrimony between the scientists at  
<http://www.microwavenews.com/>

3. The interphone project is one of many examples of splits (and acrimony) between scientists. We had similar problems in SAGE. Last month I took part in an EEA (European Environment Agency) workshop in Copenhagen to examine generic sources of divergence of scientific evaluation, with reference to four case studies: ELF-EMF; mobile phones; Bisphenol A; and Pesticides Spray Drift. In each case different official bodies reached different conclusions. Some differences were structural, e.g. evidence base and scope of review, and some were legitimate differences of scientific opinion. I am continuing this work with the EEA.

4. Legitimate differences of scientific opinion should be a good thing! The evidence is often sufficiently uncertain, and the questions considered and interpretations made sufficiently ambiguous, that a range of assessments can be appropriate. Risk managers (at least at the EEA workshop) tend to prefer more definitive scientific advice. There are benefits to governments in simple and singular advice, especially when under their own statutory advisory body. But pluralism also has benefits, especially in the context of scientific complexity, as the EEA workshop recognised.

5. The SAGE First Interim Assessment last year went part way towards pluralism, in characterising the "WHO/HPA" and "California" views. But the recommendations represented just one of those views. Government then handed the Assessment to the HPA, exclusively, for its over-riding advice. Such a statutory monopoly of advice can be problematic, especially when there is a legitimate diversity of scientific opinion.

6. Probity issues in science sometimes shadow legitimate differences of view. Often these are on the “industry” side with concerns of financial interest, widespread across science, and with statistical indications of bias by funding source. It is perhaps perversely refreshing to find probity issues on the other side, this time in relation to mobile phones (APPENDIX A), albeit they are far from clear.

7. Germany is moving to underground large parts of new high voltage lines in four pilot projects. This nationwide development follows recent policy developments in Lower Saxony (news240.6, 248.5). Key points are at APPENDIX B. The German Ministry of Economics and Technology issued a press release 18 June at <http://luca.init-ag.de/BMWi/Navigation/Presse/pressemitteilungen.did=253752.html>

8. The Dutch government and grid company (Tennet) have decided that two sections of the strategic 380kV Randstad transmission line will go underground. The final length of cable is to be decided but is said to be “more than a quarter” of the 80km length. See <http://www.tennet.org/english/index.aspx>

9. The Planning Bill was approved by the Commons today 25 June despite some opposition by Labour rebels. It proposes, controversially, to centralise over-arching decisions on major infrastructure proposals. Nuclear power stations and airport runways are popularly mentioned but wind farms and powerlines could be included. It is sensible to centralise national policy decisions, to avoid repeating the same arguments, inadequately, at local inquiries. But the central role looks like imposing some site-specific decisions. Instead, it would be better to compensate local communities so the infrastructure proposal becomes attractive to them, and then to let communities compete for the developments. The cost should be incorporated (internalised, in EU jargon) in the project.

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#### APPENDIX A Probity issues with mobile phone data.

The distinguished British Medical Journal reports a saga reflected in correspondence in the International Archives of Occupational and Environmental Health (IAOEH) this year.

<http://www.bmj.com/cgi/content/full/336/7656/1270-d>  
BMJ 2008;336:1270 (7 June), doi:10.1136/bmj.39598.629271.DB

BMJ’s choice of heading for the report by Annette Tuffs was “*University calls for mobile phone research to be withdrawn after technician admits faking data*”. Yet the report gives no confirmation that there was a confession. Indeed it reports claims that there was none.

Controversial published studies from the Medical University of Vienna showed DNA damage in human and rat cells from types of mobile phone EMF exposure. First results published 2005 were followed by similar results for a different frequency range and lower exposure levels published 2008.

Correspondence by Professor Alexander Lerchl, from Jacobs University Bremen, then challenged the results as being statistically suspicious, since some data showed a very low variation compared with what would be expected typically. Having read Lerchl's letter but not having examined the data, his suspicions do seem reasonable to me, though necessarily proving fraud.

However Lerchl's introduction of an absolute claim of "*the lack of any biophysical mechanism*", without doubt or qualification, is irrelevant to the statistical and probity considerations and might betray his own prejudices, but let that pass as we need to examine the statistical and probity issues per se. His conclusion that the study "*must be treated with extreme caution*" was more measured.

The challenge was answered by Professor Hugo Rudiger, from Medical University of Vienna, in a further letter. Rudiger says: "Although some of his minor points are correct the objected inconsistencies are largely based on the author's incomplete and superficial consideration of published data in the field". I haven't yet accessed Rudiger's letter in full.

The academic and statistical debate is one thing. The question of probity is another. What do we have? From what is reported in BMJ news we have:

- (a) resignation of technician, giving grounds for suspicion, but no confession;
- (b) Professor Rüdiger claims that the university committee did not act independently because its chairman was a lawyer from Austria Telecom;
- (c) lack of due process as the committee did not interview the technician;
- (d) university press officer statement claiming the committee was independent because the chairman did not vote;
- (e) university press officer claiming that the technician left the university of her own accord was evidence enough of her guilt.

That looks like very muddy waters! Clearly the committee chairman should have stood down. A clear confession and explanation should be made, in default of which we have only suspicion and counter-suspicion. I wonder if the time of the science soap opera has arrived?

The items in IAOEH this year were:

Schwarz C, Kratochvil E, Pilger A, Kuster N, Adlkofer F, Rüdiger HW (2008) Radiofrequency electromagnetic fields (UMTS, 1,950 MHz) induce genotoxic effects in vitro in human fibroblasts but not in lymphocytes. *Int Arch Occup Environ Health* doi: 10.1007/s00420-008-0305-5

Alexander Lerchl, Comments on ..., *Int Arch Occup Environ Health* 2008 doi: 10.1007/s00420-008-0323-3

Hugo W Rudiger, Answer to comments by A. Lerchl on ..., *Int Arch Occup Environ Health* 2008 doi: 10.1007/s00420-008-0330-4

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## APPENDIX B Germany to underground high voltage lines

Last week, the German government introduced new legislation on transmission lines, which is expected to have major implications for the future use of overhead lines. The main points are:

- There is strong need for new EHV lines due to EU electricity transit, more conventional power plants in Germany due to nuclear “exit strategy” and more renewables
- 4 pilot EHV transmission line projects are agreed - Ganderkessee-St.Hulfe, Niederrhein-Diele, Weklar-Mahle and the section Altenfeld-Redwitz of the line Bad Lauchstadt-Redwitz. The lines are around 600km in total and around 30% is expected to be put underground
- The 4 pilot projects are critical to ensure security of energy supply in Germany “*it is essential to have high security of supply guaranteed*” Page 16/18/19 AND they recommend partial undergrounding for them
- Additional cost to be shared among all electricity customers in Germany – page 2
- Partial undergrounding is “*more expensive, but speeds up construction, this in turn will contribute to improved competition which will reduce electricity prices*” - page 2
- Planning and authorisation procedures are to be streamlined into a “one-stop-shop” – only one court can be called upon once in case of disagreement – page 27
- Transmission lines should not be placed within sensitive areas 200m buildings/400m residential areas plus an environmentally protected area in Thuringen for 4<sup>th</sup> pilot project – page 4
- 24 priority EHV lines are to be built – page 6/7
- This is federal competence – it will apply to all of Germany – page 28
- There is limited experience with EHV transmission cables – this is why the 4 pilots have been identified, to facilitate use of EHV UGC “widely” – page 31/32

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