



Further legal considerations¹ in relation to EMFs, powerlines² and a precautionary approach, following the SAGE report³ published April 2007⁴

This contributing paper considers in further detail whether existing legislation could be applied to any potential pollution from EMFs. It also considers other legislation in relation to powerlines /EMFs and a how a precautionary approach could be adopted.

By

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1 N.B. The paper refers to the law in England and there may be variations in the law relating to Wales, Scotland Northern Ireland.

2 Powerlines also referred to as “power lines” and “electricity lines” in some literature

3 Stakeholder Advisory Group on ELF EMFs (SAGE) A precautionary approach to ELF EMFS “The First Interim Assessment: Power Lines and Property, Wiring in Homes, and Electrical Equipment in Homes” 27th April 2007. (www.rkpartnership.co.uk/sage/Public/SAGE%20first%20interim%20assessment.pdf) accessed 4th June 2007.

4 Disclaimer: The paper is for informational purposes only. It is not guaranteed to be correct, complete, or up-to-date. The information provided is not intended to substitute for obtaining legal advice.

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6 Masters Degree in Environmental Law

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1 Background to law in this paper

1.1 Introduction

This paper includes various references to the current law. Law can be classified as either:

criminal law or **civil law** OR as

common law or **Statute law**.

EU law impacts on national law, as does the European Convention of Human Rights.

1.2 Criminal law or civil law

Under **criminal law** failure to comply with the law results in a criminal offence and on conviction, the defendant is given a punishment. E.g. fine. It is usually a criminal offence to fail to comply with regulations relating to pollution control.

In **civil law**, a party to the action can sue for an appropriate remedy. E.g. damages, injunction. Examples of **civil law** include judicial reviews, torts (civil wrongs, such as trespass, negligence, and nuisance). Judicial Review is a way of challenging the legality of the actions of a public body (see 4.9.3). Planning laws are civil laws, but there may also be criminal offences for failing to comply with orders/notices issued by the Local Planning Authority.

1.3 Common law or Statute law

Common law is derived from rules from previous court cases or custom and practice. It is not covered by Acts (statutes), although new legislation can supersede common law. Under common law, there are rules (under the doctrine of judicial precedent) whereby judges follow the decisions made in previously decided cases where the facts are similar. Only superior (higher) courts can make decisions which bind the inferior lower courts. E.g. A decision by the House of Lords would bind all lower courts.

NB. In this text there will be references to court cases that do not involve EMFs/ powerlines, but are relevant because they demonstrate how a court applied the law or made a new ruling on how law was to be interpreted.

Statute Law refers to laws passed by Parliament in an Act (also called Statute). New legislation is introduced to change current law, consolidate or codify existing law, or legislate for situations not covered by existing law. An example of statute law is the Electricity Act 1989. Sections of the Act have been updated by subsequent legislation, including the Utilities Act 2000 and the Energy Act 2004. Hence the current version of the Electricity Act 1989 in force is different from the original version passed by Parliament. Under statute law, "Acts" are primary legislation, with secondary legislation in the form of statutory instruments (also known as Regulations).

NB. At present the Government's Public Sector Information website www.opsi.gov.uk only publishes original versions of legislation, not the current version in force, following later amendments.

1.4 EU law

Statute law also includes laws from the **European Union**. EU legislation is mainly in the form of Regulations and Directives (EU Regulations are not to be confused with Regulations in UK law). Member states have to directly comply with EU Regulations. However, most EU environmental law is passed by the EU in the form of a Directive, which generally applies to all member states. The member state (e.g. the UK) then has a set period for bringing in national laws to comply with the EU directive. Other legal measures are Recommendations and Opinions.

EU law takes priority over national law. When a national court is unsure how to interpret EU legislation, under Article 234 it can refer the case to the **European Court of Justice (ECJ)** for a preliminary ruling. Once the ECJ has made a decision, all member states will have to interpret the EU legislation in accordance with the ruling. This is why cases heard in the European Court of Justice involving other EU countries (member states), are relevant to the laws in the UK.

1.5 The European Court of Human Rights (ECHR)

The ECHR should not be confused with the EU's European Court of Justice. The European Court of Human Rights hears cases relating to the European Convention on Human Rights which was created in 1950 and the UK ratified the treaty in 1951. Following the Human Rights Act 1998, the UK Government and public bodies now have to make sure that everything they do is compatible with European Convention Rights, unless an Act of Parliament indicates otherwise. With human rights legislation when making decisions.

(See Human Rights legislation 4.9.3).

1.6 International Treaties

Treaties are also known as conventions and agreements, with protocols being sub agreements of the main treaty. Treaties are formed following an international convention by a number of countries interested in adopting a joint approach towards a matter of common concern. Following the Convention, the exact terms of the treaty are formulated and adopted. Countries then "sign up" to express formal intent to be bound by the treaty. Once a country is in a position to introduce domestic legislation, it then "ratifies" the treaty. The Treaty does not come into force until a pre-determined number of countries have "ratified". The UK Government has ratified some international treaties which include a policy of a precautionary principle when faced with scientific uncertainty as to potential irreversible environmental harm.

2. Role of various Govt. Depts, Govt. Agencies and other bodies

2.1 Introduction

There are a number of Government Departments, Government Agencies, and other bodies that have a role in matters relating to the potential health risk from electromagnetic fields. They are not all included in the main text of this paper, but are mentioned here to give overall view.

2.2 National Govt. Departments and Parliamentary Commission

Dept. of Communities and Local Government(DCLG)(www.communities.gov.uk)

DCLG is the Government Department responsible for building regulations, planning and Environmental Impact Assessment in England. DCLG issues Planning Policy Statements and its planning inspectorate handles planning appeals. DCLG was formed when the Office of the Deputy Prime Minister was disbanded in 2006.

Department of Environment, Food and Rural Affairs (DEFRA) (www.defra.gov.uk)

DEFRA is the lead Govt. department responsible for environmental protection, including pollution prevention control, air quality, noise nuisance, environmental Liability, contaminated land, waste management.

Department of Health (DH) (Co-funding SAGE group) (www.dh.gov.uk)

Dept. of Health is the lead Government department responsible for the potential risk of EMFs to the public, dealt with in their Toxicology and Radiation Branch under the remit of the Minister for Public Health.

Department of Trade and Industry (DTI)

(From 28th June 2007 part of the newly formed Department of Business, Enterprise and Regulatory Reform (DBERR) (both websites are currently operational: www.dti.gov.uk and www.dberr.gov.uk)

DTI has been the Government Department responsible for energy, including administering the provisions of the Electricity Act 1989 and authorising the various consents in relation to the construction of generating stations, overhead transmission lines and way leaves. The Department was briefly renamed as Department of Productivity, Enterprise and Industry in 2005 before reverting to DTI. The DTI has now been abolished by the new Prime Minister's reshuffle and becomes part of the new Department of Business, Enterprise and Regulatory Reform (DBERR).

Health and Safety Commission, Health and Safety Executive (HSE) (www.hse.gov.uk)

The Health and Safety Commission is responsible for health and safety regulation in Great Britain. The Health and Safety Executive and local government are the enforcing authorities of the HSC's work. The HSC is sponsored by the Department of Work and Pensions. HSE is

overseeing transposition of the EU EMFs Directive 2004 into national law. See also HSE's role as a regulator below at 2.5.

Parliamentary Commission on Childhood Leukaemia and Electric and Magnetic Fields (EMF)
(www.epolitix.com/EN/Forums/Parliamentary+Commission+on+childhood+leukaemia+and+EMF)

A cross-party Commission consisting of 5 MPs, established in 2006 at the instigation of the charity, Children with Leukaemia. The purpose of the Commission is to consider the case for taking precautionary action on EMF exposure.

2.3 Statutory Advisory Bodies

Health Protection Agency- Radiological Protection Division (HPA-RPD)
(www.hpa.org.uk)

HPA-RPD succeeded the National Radiological Protection Board (NRPB) which merged with the Health Protection Agency in April 2005. The RPD has the statutory function of giving advice to Government on all radiation matters. The Advisory Group on Non-ionising Radiation (AGNIR) review works on the biological effects of non-ionising radiation relevant to human health and advises the relevant sub-committee to the HPA board on research priorities.

2.4 Other independent advisory bodies

Committee on the Medical Effects of Air Pollutants (COMEAP)
Secretariat c/o Dept. of Health (www.advisorybodies.doh.gov.uk/comeap/)

COMEAP is an Advisory Committee of independent experts who provide advice to Government Departments and Agencies on all matters concerning the potential toxicity and effects upon health of air pollutants.

Committee on Medical Aspects of Radiation in the Environment (COMARE)
Secretariat c/o HSE (www.comare.org.uk)

COMARE is an independent expert advisory committee whose members have medical or scientific expertise and recruited from Universities, Research and Medical Institutes, but not the Nuclear or Electrical Power Supply Industries.

COMARE offers independent advice to all Government Departments and Devolved Authorities, and is responsible for assessing and advising them on the health effects of natural and man-made radiation and to assess the adequacy of the available data and advice on the need for further research. The Committee keeps up to date on studies of the possible health effects of electromagnetic fields. It last received an update by HPA in 2006.

Royal Commission on Environment Pollution (RCEP) (www.rcep.org.uk)

RCEP is an independent standing body of experts established in 1970 to advise the Queen, Government, Parliament and the public on environmental issues: both national and international, concerning the pollution of the environment; on the adequacy of research in this field; and the future possibilities of danger to the environment. The Commission has freedom to consider and advice on any matter it chooses and it may also consider topics requested by Government.

World Health Organisation (WHO) (www.who.int)

WHO is preparing a "Framework to Develop Precautionary Measures in Areas of Scientific Uncertainty" to guide its Member States in the development of their public health policies and application of precautionary measures in the face of scientific uncertainty." The UK is represented on this body by Dept. Of Health's Toxicology and Radiation Branch.

2.5 Regulators**Health and Safety Executive (HSE) (www.hse.gov.uk)**

See also about HSE under National Government Departments at 2.2 above. Part of the Engineering Inspectorate of Dept. of Trade and Industry dealing with electricity transferred to HSE in October 2006. The HSE is now sole regulator for all safety issues associated with electricity transmission and distribution for both employees and public safety.

Office of the Gas and Electricity Markets (OFGEM)**Gas and Electricity Markets Authority (GEMA) (www.ofgem.gov.uk)**

The Gas and Electricity Markets Authority (GEMA) acts as a corporate body to the regulator, the Office of the Gas and Markets (OFGEM). OFGEM is an independent economic regulator for the UK Gas and Electricity Markets. OFGEM states its first priority is to protect consumers by promoting competition, where appropriate and regulating the monopoly companies which run the Gas and electricity markets. GEMA also has statutory obligations under the Electricity Act 1989 to protect the public from dangers due to electricity generation, transmission, distribution and supply.

Environment Agency (www.environment-agency.gov.uk)

The Environment Agency is the lead public body for protecting and improving the environment (air, land and water) in England and Wales. It is the regulator for the more polluting industries and activities, with the local authority having responsibility for the less polluting activities.

Local authorities

- Planning: Local Authorities have responsibility for planning. District and unitary authorities normally being the local planning authority (LPA), but for certain planning applications, the role of LPA falls to the County and Unitary authorities.
- Pollution Control: Local Authorities are the regulator for nearly all other pollution matters not covered by the Environment Agency. Pollution is dealt with through local authority Environmental Health Officers.

2.6 Electricity Industry in UK

The Electricity Industry operates under licences from the Government. In this contributing paper, the relevant electricity company may be referred to as the "Licence holder".

There are 4 elements to the industry. They are:

- **Generation** - Electricity generated from fuel at power stations, also now from renewable energy sources. E.g. wind energy. Generated electricity is feed into the transmission network to be distributed through to regional distribution networks.
- **Transmission**-The transmission network receives the generated electricity which goes over the high voltage powerlines to the distribution networks. National Grid Plc operates the network across Great Britain, but only owns the network in England and Wales. In addition to National Grid being the transmission licence holders in England and Wales, Scottish Power Plc and Scottish & Southern Energy Plc both hold transmission licences in Scotland. The Northern Ireland transmission network is run by Northern Ireland Electricity Plc.
(National Grid is co-funding the SAGE group.)
- **Distributors** - own and operate the local distribution electricity lines which take electricity from the high voltage powerlines to consumers of electricity, both residential and commercial.
CE Electric Network, EDF Energy networks, Central Networks (previously Midlands Electricity and East Midlands Electricity), Scottish Power Energy Networks, Scottish and Southern Energy, Northern Ireland Electricity, United Utilities, Western Power Distribution.
- **Suppliers** - these are the companies who supply and sell electricity to the consumer. They are not necessarily the distributor of the electricity.

2.7 Other Organisations

Energy Networks Association (ENA) (www.energynetworks.org)

ENA is funded by UK gas and electricity transmission and distribution licence holders. "ENA lobbies on common issues in the operating environment, both at domestic and European levels, and provides 'in common' technical services and related businesses for the benefit of members". ENA produced a booklet called "EMFS: The Facts (January 2007)", with an update "EMF: The Fact (Update April 2007)".

Institution of Engineering and Technology (IET) (www.theiet.org)

IET is the successor body to the Institution of Electrical Engineers (IEE). It represents the profession of electrical, electronic, manufacturing and systems engineering and related sciences. It also speaks for the profession in matters of public concern and assists Government to make the public aware of technological issues. It has an interest in the EMF issue and published a paper called "The Possible Harmful Biological Effects of Low-Level Electromagnetic Fields of Frequencies up to 300 GHz IET Position Statement - May 2006".

Children with Leukaemia (co-funding the SAGE Group) (www.leukaemia.org)

CWL is a leading children's cancer charity. Leukaemia being the most common form of childhood cancer. CWL is working hard towards finding a cure for childhood leukaemia.

Powerwatch (www.powerwatch.org.uk)

Powerwatch is an independent organisation with a central role in the UK Electromagnetic Field and Microwave Radiation health debate. It works closely with decision-makers in government and business, and with other like-minded groups, promoting policies for a safer environment. One of its founders, Alasdair Philips, has been researching electromagnetic field effects on health for the last 20 years. Powerwatch provides a range of information to help the general public understand this complex issue.

EM Radiation Research Trust (www.radiationresearch.org)

The EM Radiation Research Trust is an independent body and charity. Its aim is to provide the facts about electro-magnetic radiation and health to the public and the media. Trustees include MPs and a MEP.

H.e.s.e.-UK (www.hese-project.org/hese-uk/en/main/index.php)

The International h.e.s.e. Project is a loose union of scientists and scientific institutions with different fields of specialisation as well as informed laymen, from all over the world, working interdisciplinarily together under the premises: **H**uman **E**cological **S**ocial **E**conomic. It determines its activities on its own responsibility and tries to point out solutions for given and known problems of human daily life and the surrounding environment in the sense of the given premises.

H.e.s.e-uk is an extension of the European H.e.s.e Project and intends to meet the needs of not just the UK but all English speaking researchers and thinkers. Their first project deals with the issues of pollutants, in particular non-ionising electromagnetic radiation (NIEMR), to better understand its effects on people and the living environment. To aid this project they are translating some scientific papers currently only available in German and Russian.

REVOLT (www.revolt.co.uk)

REVOLT is a campaign group which opposes unnecessary, excessive and intrusive powerline development. It was founded in 1991 principally to object to the proposed 50-mile 400 kV overhead transmission line from Teesside to York. By the time the new Yorkshire line was completed in 2003, there had been several public inquiries and hearings and landowners who refused to grant voluntary wayleaves. By this time REVOLT had become an internet-based international focus for public concerns about transmission lines, related energy policy and electro-magnetic fields (EMFs).

Trentham Environmental Action Campaign (www.revolt.co.uk/trentham/)

A local campaign group formed in 1997 because of growing concerns of serious illnesses that are occurring in residents living near to High Voltage powerlines in Trentham. In 1998 they submitted an application to the DTI to ask for a review of the consent for the section of overhead line in Trentham, but the Secretary of State turned down their request in 2000. They have

undertaken several surveys into the high incidence of ill health near powerlines (both 400k and 132k).

Other campaign groups opposed to high voltage overhead powerlines .

E.g. Scotland before Pylons, an umbrella organisation representing a number of groups opposed to the Beaulieu - Denny line in Scotland, which is subject of a public inquiry during 2007

2.8 Scientists/Academics engaged in research into powerlines/EMFs

The Human Radiation Effects Group, Bristol University

The Human Radiation Effects Group, headed by Professor Denis Henshaw, is interested in environmental factors linked to the incidence of childhood leukaemia. One area it is investigating is the role played by electric and magnetic fields associated with the electricity supply:

- The role of corona ion emission from high voltage powerlines and how this may explain the observation of increased incidence of childhood leukaemia up to 600 metres from high voltage powerlines in England and Wales.
- The mechanisms by which magnetic fields appear to increase the risk of childhood leukaemia as well as certain other diseases.

Coghill Research laboratories, Wales (www.cogreslab.co.uk)

A laboratory, run by Roger Coghill, specialising in bioelectromagnetics, including electropollution. The team believe the health hazards of electromagnetic radiation from mobile phones, power lines and other sources are seriously understated. The team is presently doing research into the radio-protective effects of plant melatonin at physiological doses, the mechanisms of interaction between electric fields and organisms, and free radical means of treating cancer.

Other Scientists

Other scientists are working independently or in a commercial setting on issues relating to the potential health risk attached to EMFs.

3. Introduction to legal issues relevant to EMFs

3.1 What are ELF EMFS?

The SAGE report considered what precautionary measures should be recommended in relation to extremely low frequency (ELF) electromagnetic radiation. ELF EMFs are emitted from sources such as electricity powerlines, household electrical wiring and electrical appliances⁷. This contributing paper refers to mainly to EMFs from powerlines, but there are also similar issues with under mains voltage distribution cables taking electricity from substations to houses and businesses which are greater causes of elevated magnetic fields than the high voltage overhead powerlines.⁸

Electricity powerlines emit far less EMFs when they are buried underground compared to those routed overhead over pylons. However, it is much more expensive to install underground electricity cables. See for example, the costs involved in undergrounding powerlines around the 2012 Olympic site in London⁹. For further background into electromagnetic fields and powerlines, see the *EMF Info* website set up by nation Grid¹⁰. Also see Supporting Paper 14 to SAGE report¹¹.

Typical ground-level UK field levels from overhead powerlines ¹²

		Magnetic Field (microteslas)	Electric Field (volts per metre)
The largest steel pylons (275 kV and 400 kV)	Maximum field (under line)	100	11,000
	Typical field (under line)	5-10	3000-5000
	Typical field (25m to side)	1-2	200-500
Smaller steel pylons (132 kV)	Maximum field(under line)	40	4,000
	Typical field(under line)	0.5 – 2	1000-2000
	Typical field(25m to side)	0.05-0.2	100-200
Wooden poles (11 kV and 33 kV)	Maximum field(under line)	7	700
	Typical field(under line)	0.2-0.5	200
	Typical field(25m to side)	0.01-0.05	10-20

7 Household wiring can give off high levels of EMFs, particularly if incorrectly installed. See Wiring FactSheet on Powerwatch website. www.powerwatch.org.uk/gen/wiring2.asp

8 Maslany J., "Investigation of sources of Residential Power Frequency Magnetic Field Exposure in the UK Childhood Cancer study" Journal Of Radiological Protection March 2007 doi nr 10.1088/0952-4746/27/1/002

9 In 2005, the London Development Agency announced plans to construct 12 kilometres of tunnels to replace overhead powerlines across the Lower Lea Valley, in preparation for the 2012 Olympics. The cost of £70 million being the first part of £200 million project to remove in total 50 huge pylons from the skyline and free up land for development.

10 "A guide to the debate on Electro and Magnetic Fields and Health", www.emfs.info

11. "Powerlines: Facts on EMFs" Supporting Paper 14, Sage's 1st Interim Report. April 2007

12 Taken from EMFs INFO website www.emfs.info/Source_overhead.asp

It is not just the UK that has to consider the potential health hazard from EMFs and whether to adopt a precautionary approach. Other countries face the same dilemma, but one difference with the UK compared to other countries, is that the UK has one of the highest population densities in the world and land for development is expensive. The reason developers build homes either under or near existing powerlines, is that the land is cheaper to buy.

3.2 EMFs are capable of Environmental Pollution

It is generally accepted that there is a risk to human health from excessive exposure to electromagnetic fields. There is disagreement amongst the international scientific community as to the level of exposure required to cause harm or the risk of harm to human health. Some scientists believe the current standards of the International Commission on Non-Ionising Radiation Protection (ICNIRP), adopted by the UK, are not rigorous enough to protect the public¹³. Nevertheless, in excess, EMFs do have the potential to cause environmental pollution and should be considered as such.

3.3 Difficulty in measuring EMFs and possible adverse health affects

- EMFs are invisible to the naked eye and do not appear to have a physical presence.
- EMFS are inaudible (although the powerlines can create noise in damp conditions).
- EMFs not give off smell.
- EMFs can not be felt through touch, unless a person receives an electric shock.
- EMFs are transient or intermittent. Switch off the EMF emitting facility and the radiation fields stop.
- Any adverse effects of exposure to low level of EMFs are never immediately apparent. There may be a long latency period.

¹³ Some important scientific reports/papers:

Ahlbom, A., et al, 2000. A pooled analysis of magnetic fields and childhood leukaemia, *British Journal of Cancer*, Vol 83, pp. 692-8.

California Health Department, 2002. An evaluation of the possible risks from electric and magnetic fields (EMFs) from power lines, internal wiring, electrical occupations and appliances. California EMF Program.

Draper, G., Vincent, T., Kroll, M.E., Swanson, J., 2005. Childhood cancer in relation to high voltage power lines in England and Wales: a case control study. *British Medical Journal* 7503, 1290-1292.

Greenland, S., et al, 2000. A pooled analysis of magnetic fields wire codes, and childhood leukaemia, *Epidemiology*, Vol 11, pp. 624-34.

Few, A.P., Henshaw D.L., Wilding, R.J., and Keitch, P.A. 1999. Corona ions from power lines and increased exposure to pollutant aerosols. *International Journal of Radiation Biology*, 75(12), 1523-1531.

Henshaw, D.L. and Reiter, R.J., 2005. Do magnetic fields cause increased risk of childhood leukaemia via melatonin disruption? *Bioelectromagnetics Supplement* 7, S86-S97.

National Institute of Environmental Health Sciences (NIEHS), 1999. NIEHS Report on Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields. NIH Publication No. 99-4493.

UK Childhood Cancer Study Investigators, 1999. Exposure to power frequency magnetic fields and the risk of childhood cancer. *The Lancet*, 354, 1925-31.

UK Childhood Cancer Study Investigators, 2000. Childhood cancer and residential proximity to power lines. *British Journal Cancer*, 83, No. 11, 1573-80.

- EMFs can not be measured without specialist equipment, so the ordinary person can not easily gauge whether they have been exposed to a high level of EMFs or the duration of any such exposure.

3.4 Public concern about living near powerlines and health risk

Some residents living near overhead powerlines attribute current health problems (e.g. Headaches or more serious illnesses, including cancer, clinical depression and neurodegenerative illnesses) to the EMF emissions. Others are worried about future illnesses due to exposure now. The anxiety caused to local residents may generate ill-health in itself. Such concerns are not unreasonable given that the public are now aware that exposure to a causative agent can lead to a life reducing illness later in life (e.g. asbestos-various lung diseases, BSE-Variant Creutzfeldt-Jakob disease).

There are also particular concerns about the health of children living near high voltage overhead powerlines, especially following scientific reports which suggest a link between powerlines and risk of developing childhood leukaemia. Research indicates that children with leukaemia have a poorer prognosis and outcome if they return to live near powerlines¹⁴. A report¹⁵ by German research team published in 2005 stated that a 12mG (1.2µT) magnetic field can block the ability of tamoxifen to control the growth of human breast cancer cells.

People find themselves unhappy about living near a power line for a variety of reasons:

- Overhead power line installed after the local residents moved there.
- Local residents moved near to an existing line but media coverage of the scientific debate has raised the residents' awareness to the possibility of risk to their health. No doubt, the level of anxiety for those living in the shadow of high voltage overhead powerlines (HVOL) is greater now than in the past.
- Local residents, or their neighbours, may have developed illnesses where, in the absence of another diagnosed origin, power line emissions are suspected of being the cause of the illness.
- Local residents may have moved to the area for reasons of necessity. E.g. housing allocated to council or housing association tenants.
- Properties may be occupied by couples who bought in the area because prices were cheaper and more affordable. They then become concerned about health issues once they have children or consider starting a family.
- One argument is that people, who are worried about living near powerlines, should move elsewhere. It is not that simple.
 - Tenants/owners living in the properties near powerlines may desperately want to move but be trapped for financial or contractual reasons.
 - Owners may be hampered by the inability of a prospective purchaser to obtain a mortgage on the property.

14 Information supplied by Children with Leukaemia charity, 2007

15 Girgert R. et al. "Induction of tamoxifen resistance in breast cancer cells by ELF electromagnetic fields" Biochemical and Biophysical Research Communications, 4 November 2005.

- Owners may find that it is more difficult to sell their property because of the proximity of the power line or substation.
- Prospective purchasers may be deterred if the property has an easement or wayleave agreement allowing the power line route over the property (see more about easements and powerlines in 4.8.11).
- Others already concerned about the health issue are reluctant to sell to a family with young children because they believe they would be at greater risk of childhood leukaemia.

3.5 Public's need for monitoring of EMF levels from power lines, information and legal redress

Because of the nature of EMFs, residents living near powerlines can not easily measure their level of exposure or the level of risk associated with it. They may be unaware if their level of risk is increased for any reason, such as a power surge at peak periods of electricity demand. Even if they are able buy, hire or borrow specialist equipment to measure the EMF levels, they may not be able to interpret the results without information from a specialist. Members of HSE's Small Businesses Forum have expressed similar concerns about difficulty in measuring electromagnetic fields from equipment in relation to their obligations under the incoming EU EMF Directive 2004¹⁶.

At the moment, any one-off reading of EMF levels from a powerline (or other EMF sources) does not necessarily show the whole picture.

In any given 24 hours, there will be variations of levels depending on:

- The type of line (400kV, 275 kV or 132 kV),
- Whether line is serving residential or industrial use. Supply to industrial use tends to be more stable.
- Mainly Residential use on 132kv lines can be very variable, particularly with the early morning peak, afternoon/early evening peaks together with another peak at midnight for off peak electricity tariffs. Also there is a winter peak.
- Powerlines from peak load power stations have very little power going through them when on standby, but very high level when operating.
- Higher levels due to an electricity surge or in the case of a substation, a malfunction. Double circuit lines which are faulty or where maintenance is being carried out may give off higher EMF readings.
- If for any reason there happened to be a low electricity power flow at the time the reading was taken.

If residents do find out they are exposed to high levels of EMFs, their options are limited. Many of those living near powerlines, particularly high voltage overhead lines, would welcome:

- a precautionary approach being introduced,

¹⁶ HSE's Small Businesses Forum meeting 18th October 2006
www.hse.gov.uk/aboutus/hsc/iacs/sbtaf/181006/minutes.pdf

- appointment of local regulator to provide regular monitoring of EMF emission levels from powerlines and
- A local regulator who could respond to requests from residents to check overall emission levels at a property and investigate cause of any high readings. This might reveal source of EMFs from sources other than from powerlines, e.g. faulty household wiring.

3.6 Govt and public bodies have to comply with the Human Rights Act 1998

The Human Rights Act 1998(HRA 1998) requires the Government and public bodies to make sure that everything they do is compatible with European Convention Rights, unless an Act of Parliament indicates otherwise. Public bodies include privatised electricity companies, as they are statutory undertakers, and regulators, e.g. OFGEM.

Relevant European Convention of Human Rights includes:

- **Article 2 Right to life. Art.2(1)**
Everyone's right to life shall be protected by law.
- **Article 6 Right to a fair trial**
“In the determination of his civil rights and obligations or of any criminal charge against him, everyone is entitled to a fair and public hearing within a reasonable time by an independent and impartial tribunal established by law.”
- **Article 8 Right to respect for private and family life**
“Everyone has the right to respect for his private and family life, his home and his correspondence”. “There shall be no interference by a public authority with the exercise of this right except such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others”.
- **Article 13 Everyone whose rights under the Convention are violated shall have an effective remedy before a national authority.**
- **The First Protocol, Article 1- Protection of property**
“Every natural or legal person is entitled to the peaceful enjoyment of his possessions. No one shall be deprived of his possessions except in the public interest and subject to the conditions provided for by law and by the general principles of international law”.

3.7 A Precautionary approach

There has been a call for a precautionary approach towards powerlines and EMFs by some scientists and members the public. The question is how could a precautionary approach be adopted and who might pay for it, e.g. electricity consumer, tax payer, electricity company. This is explored in more detail later in this paper, see 4.3.6- 4.3.10.

4. Applicability of existing legislation to EMFs/ Powerlines

4.1 Introduction to law and legal issues

4.1.1 Background to law and legal issues

For the benefit of those without a legal background or knowledge of the legal issues involved, see sections 1 and 3. Members of the public living power

4.1.2 Here is considered the extent to which EMFs and powerlines may be covered by other existing legislation.

This paper considers the extent to which EMF/powerlines and Corona Ions may apply to existing legislation. The relevant laws are mainly designed either to control development (planning laws), to control pollution or protect the environment.

Under Part 1 of EPA 1990¹⁷, Section 1 defined the environment *“as consists of all, or any, of the following media, namely, the air, water and land; and the medium of air includes the air within buildings and the air within other natural or man-made structures above or below ground”*.

Laws relating to civil liability might also apply to the harm, potential harm or nuisance from EMFs/ Corona Ions.

4.1.3 The courts may need to decide whether laws apply to EMFs.

In some cases, it may be unclear as to whether a particular law applies to EMFs or powerlines and it may be a matter for a court to give a ruling on interpretation of the legislation. One of the issues which determines whether specific pollution control legislation applies to powerlines depends on the definition of the EMFs and other properties created by powerlines and whether they constitute a physical substance.

Some relevant legislation is derived from EU law, usually in the form of an EU Directive which has to be transposed into national UK law. If a UK court is unsure how to interpret law derived from EU legislation, the case may be referred to the European Court of Justice (EJC) for a preliminary ruling under Article 234 of EU treaty. Once the European Court of Justice makes a decision on interpretation of EU legislation, it applies to all member states. Hence, if another member state asked the ECJ to give a ruling on whether an EU directive applied to EMFs, the ECJ's ruling would be binding on all member states including UK.

¹⁷ Part 1 of the Environmental Protection Act 1990 (EPA 1990) provided for an Integrated Pollution Control and Local Authority Air Pollution Control regime, which is being phased out by 2007 and the incoming Pollution Prevention and Control Act 1999 and Pollution Prevention and Control (England and Wales) Regulations 2000 (as amended).

4.1.4 Legislation in each UK Country

There may be some differences in the law of the 4 UK countries. However, legislation derived from EU law will be very similar in each country. This text refers to English law, which until 1999 automatically included Wales.

Primary environmental regulatory authority

- England and Wales - The Environment Agency.
- Scotland - The Scottish Environmental Protection Agency (SEPA)
- Northern Ireland - The Environment and Heritage Service

Government body responsible for Planning

- England - Dept. of Communities and Local Government
(Formerly Office of the Deputy Prime Minister)
- Wales - Dept. for Environment, Planning and Countryside,
Welsh Assembly Government
- Scotland - Scottish Executive Development Department, Scottish Executive
- Northern Ireland - Dept. of Environment (N.I.)

Government body responsible for Environmental Protection

- England - Department of Environment, Food and Rural Affairs
- Wales - Dept. for Environment, Planning and Countryside,
Welsh Assembly Government
- Scotland- - Dept. for Environment and Rural Affairs, Scottish Executive
- Northern Ireland - Dept. of Environment (N.I.)

Primary regulatory authority for Health and Safety regulations

- England, Wales and Scotland - Health and Safety Executive
- Northern Ireland - Health and Safety Executive for Northern Ireland

4.2 EMF limits, Health and Safety Legislation and other legislation to protect the public from dangers from electricity

4.2.1 EU Recommendation on limitation of exposure of general public to electromagnetic fields 1999

The Recommendation sets a framework that deals with limiting public exposure, providing public information and undertaking research. Although an EU "recommendation" is not binding on EU member states, it has been adopted by the UK.

4.2.2 EU Directive on the minimum health and safety requirements regarding the exposure of workers to the risk arising from physical agents (Electromagnetic fields) 2004 (known as EMFs Directive)

The EU EMF directive sets out common standards to prevent short-term effects from exposure to electromagnetic fields at work. The Directive is due to be transposed into UK law by 2008, with the Health and Safety Executive overseeing the process. Small businesses have expressed concern about their inability to measure EMFs from equipment¹⁸.

At an open consultation meeting held by the HSE in 2004 as part of the consultation process for the Directive, the HSE Adviser¹⁹ introducing the meeting stated: *"EMFs are not a priority issue in the context of risks and hazards addressed by HSE. We have to direct our resources to those areas where there are real health and safety issues and where we can make an impact. We do not envisage any significant health benefits from this Directive and have negotiated a framework that puts minimum impact on industry. We intend to implement this directive using an appropriate 'light touch' approach."*

Possibly HSE take a similar stance with regard to potential harm caused by EMFs from powerlines. Whilst there is still no conclusive proof as to the potential risk, for those living under powerlines, EMFs are a real health and safety issue.

4.2.3 Health and Safety Legislation

Health and Safety legislation is regulated by the Health and Safety Executive. The responsibilities of the Health and Safety Commission and its enforcing authority, the Health and Safety Executive, are primarily the protection of workers and the public from the generality of hazards (except where other Secretaries of State have specific responsibility), including passenger safety on railways and protection of public and workers from hazards connected with transport of dangerous goods by all modes of transport, including road, rail, air, inland waterways and through ports and harbours. HSE is the lead authority to transpose EU legislation relating to EMF limits.

The HSE Inspectors' roles for public safety include enforcement of the *Electricity Safety, Quality and Continuity Regulations 2002 (as amended)*, which set safety standards for electricity companies

¹⁸ HSE's Small Businesses Forum meeting 18th October 2006
www.hse.gov.uk/aboutus/hsc/iacs/sbtaf/181006/minutes.pdf

¹⁹ Consultation Meeting held at HSE's Rose Court, London 27th July 2004.
www.hse.gov.uk/radiation/nonionising/270704.htm

to help prevent danger to the public from electrical plant and lines. They investigate fatalities and some major injuries to members of the public; investigate complaints about safety matters and carry out annual safety management audits of licensed electricity companies. Public safety issues mainly involves risks from direct contact with electricity (risk of electric shock), such as security for substations, heights of lines. It is understood that the HSE only take a reactive approach to EMFs. See also the HSE's policy with regard to EU EMF Directive 2004 at 4.2.2.

The operators of any installation or equipment which emits EMFs has to comply with the Health and Safety at Work Act 1974 and Management of Health and Safety at Work Regulations 1999(1992 regulations revoked by 1999 Regulations). Health and Safety legislation applies to the endangering anyone's health or safety, employees and non employees (i.e. including members of the public) under Health and Safety at Work etc. Act 1974, s2 and s3 and Management of Health and Safety At Work Regulations 1999, reg. 3. Health and Safety legislation applies to work activities and the impact the activity has on the employees and non employees.

Under the Management of Health and Safety at Work Regulations 1999 an employer has to assess risk to health and safety, including EMF exposure levels and take appropriate action. The UK conforms to the standards of the International Commission on Non-Ionizing Radiation Protection (ICNIRP)²⁰.

4.2.4 Electricity Legislation

The Electricity Act 1989 (as amended) is the main act relating to the generation, transmission, distribution and supply of electricity. It confers duties on the Gas and Electricity Markets Authority and the Secretary of State for Trade and industry to protect the public from the dangers of electricity (see below 4.2.5). The Electricity Act 1989 also provides for licence holders to apply for compulsory wayleaves over land.

Electricity at Work Regulations 1989 (EAW 1989) impose duties to limit the risks involved in using electricity at work. Under Regulation 2 *Interpretation (1) In these Regulations, unless the context otherwise requires –*

““danger” means risk of injury,.....

“injury” means death or personal injury from electric shock, electric burn, electrical explosion or arcing, or from fire or explosion initiated by electrical energy, where any such death or injury is associated with the generation, provision, transmission, transformation, rectification, conversion, conduction, distribution, control, storage, measurement or use of electrical energy;”

It is unclear from the interpretation of “injury” whether the Regulations would apply in respect of any risk of injury from EMFs.

The Electricity Safety, Quality and Continuity Regulations (as amended) 2002 (ESQCR 2002) replace the *Electricity Supply Regulations 1988 (as amended)* to bring up-to-date legislation since the privatisation of the electricity industry.

Regulation 3 confers general duties on generators, distributors, suppliers and meter operators to prevent danger which could possibly apply to danger from the health risk from EMFs.

²⁰ ICNIRP is a body of international independent scientific experts. Its principle aim is to disseminate information and advice on potential health hazards of exposure to non-ionising electromagnetic fields. www.icnirp.de

“Reg. 3 General adequacy of electrical equipment

(1) *Generators, distributors and meter operators shall ensure that their equipment is –*

(a) Sufficient for the purposes for and the circumstances in which it is used; and

(b) so constructed, installed, protected (both electrically and mechanically), used and maintained as to prevent danger, interference with or interruption of supply, so far as is reasonably practicable.....

(3) Generators and distributors shall take reasonable steps to ensure that the public are made aware of dangers which may arise from activities carried out in proximity to overhead lines and to indicate the means by which those dangers may be avoided”.

There are various other duties to protect from the dangers of electricity in specific circumstances, including Regulation 18(5) *“No overhead line shall, so far as is reasonably practicable, come so close to any building, tree or structure as to cause danger”*. This could be interpreted to include danger from the risk of EMFs.

It is an offence not to comply with ESQCR under Reg. 35:

“Any generator, distributor, supplier, or meter operator or any agent, contractor or sub-contractor of any of the foregoing who fails to comply with any provision of these Regulations which applies to him,

any person who fails to comply with regulation 18(3), 21, 22 or 25(1) and any consumer who fails to comply with regulation 8(4) or 34(2)

shall be liable on summary conviction to a fine not exceeding level 5 on the standard scale”.

It would appear that the *Electrical Safety, Quality and Continuity Regulations (as amended) 2002* could be applied in respect of the dangers from powerlines from EMFs.

4.2.5 Duties of Secretary of State, Gas and Electricity Markets Authority to prevent dangers to the public

The Utilities Act 2000 created the Gas and Electricity Markets Authority (*referred to as “The Authority”*). It acts as a corporate body to the regulator, Office of the Gas and Markets (OFGEM). The Authority and Secretary of State both have statutory obligations under s3 and s29 of the Electricity Act 1989 (as amended by Utilities Act 2000 and Energy Act 2004) to protect the public from dangers due to electricity generation, transmission, distribution and supply. These obligations would include any danger from EMFs.

Electricity Act 1989, S3A (5)(b) provides that both the Secretary of State and the Gas and Electricity Markets Authority are required:

“to carry out their respective functions in the manner which he or it considers is best calculated to protect the public from dangers arising from the generation, transmission, distribution or supply of electricity. In carrying out those functions, to have regard to the effect on the environment of activities connected with the generation, transmission, distribution or supply of electricity.”

S3C Requires the Secretary of State and the Authority to consult the Health and Safety Commission on all electricity safety issues which may be relevant to the carrying out of any of their respective functions. *“Electricity Safety Issues”* are defined by S3C(5) as *“anything concerning*

the generation, transmission, distribution or supply of electricity which may affect the health and safety of (a) members of the public; or (b) persons employed in connection with any of those activities."

S29(1)(b) provides for the Secretary of State to introduce regulations to protect the public from dangers arising from the generation, transmission, distribution or supply of electricity, from the use of electricity interconnectors, from the use of electricity supplied or from the installation, maintenance or use of any electric line or electrical plant. S29(1)(c) provides for the Secretary of State to introduce regulations in relation to any electric line or electrical plant or any electrical appliance to eliminate or reduce the risks of personal injury, or damage to property or interference with its use.²¹

4.3 The Precautionary Principle enshrined UK law and the issues relating to a precautionary approach to powerlines/ EMFs

4.3.1 Introduction

This section provides the background to the authority of the Government to adopt a precautionary approach. The precautionary principle is applied in situations where there is scientific uncertainty as to the risk of irreversible harm to the environment, which includes human being, animal and plant health. Once there is conclusive proof of the risk of harm, the time for the precautionary approach has passed.

There is no internationally accepted single definition of the precautionary principle and international agreements or treaties all adopt different formulations of the "*precautionary principle*" to reflect their particular circumstances.

4.3.2 The precautionary principle and the polluter pays principle are examples of "*soft law*"

In international environmental law, the terms "*hard law*" and "*soft law*" are used to describe the difference between legally binding agreements and non-legal agreements which are not binding. "*Hard law*" is traditional law with exact rules which can be legally enforced. "*Soft law*" refers to aims or policies, such as declaration of principles, codes of practice, recommendations, guidelines etc. These are "*non treaty*" obligations between parties and are not legally enforceable although they can be the forerunner to future treaty obligations. Also there is an expectation that the parties to the agreement will incorporate these policies into their national policies and ultimately national legislation. Some EU laws measures, such as guidelines or a declarations, which are not legally binding are also considered "*soft law*", although they indicate the EU's policies and intentions. The "*precautionary principle*" comes under this category of "*soft law*"²².

The polluter pays principle is also "*soft law*", derived from EU law. The principle means that the producer pays for the costs of preventing or remedying the pollution damage caused by the process, including environmental costs. The 1st EU legislation to adopt the polluter pays principle as its main objective is the 2004 EU Directive on Environmental Liability²³.

²¹ See S5 of this paper for extracts from Electricity Act 1989.

²² see the Duddridge case below at 4.3.5

²³ See below at 4.8.3.

4.3.3 The Precautionary Principle adopted from International Law

Although the UK has adopted the precautionary principle in various international environmental treaties, it is “soft law” and not enforceable until it has been incorporated into specific national legislation.

The Rio Declaration

The precautionary principle was first introduced into UK law as a generalised policy to prevent possible harm to the environment, including harm to human beings, after the UK Government signed up to the Rio Declaration. The Rio Declaration on Environment and Development emerged from the 1992 UN Conference on Environment and Development (The Earth Summit). It established a number of principles, including:

Principle 1 states “Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature”.

Principle 15 states: “In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”

The World Health Organisation

The WHO is preparing a “Framework to Develop Precautionary Measures in Areas of Scientific Uncertainty” to guide Member States in the development of their public health policies and application of precautionary measures in the face of scientific uncertainty.” The Framework will include guidance on adopting a precautionary principle towards ELF EMFs and RF EMFs. In 2002 the WHO published a guidance called “Establishing a dialogue on risks from Electromagnetic fields”.

4.3.4 The Precautionary principle under EU law

The EU provides for a precautionary approach to environmental harm under Art 174* EU Treaty (*previously Article 130r before the Treaty renumbered). Article 174(2) states

“Community policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Community. It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay”.

Some EU legislation only allows projects to go ahead if no reasonable doubt remains as to whether environmental harm will be caused. E.g. EU Habitats Directive 1992 and Birds Directive 1979 (4.5.8).

A recent case in the European Court of Justice clarified the interpretation of Article 6 of the Habitats Directive regarding damage to natural habitats from proposed large infrastructure projects. The European Court of Justice made a preliminary ruling on the interpretation of Article 6 of Habitats Directive 1992 which designates Special Areas of Conservation in *Landelijke Vereniging tot Behoud van de Waddenzee, also acting on behalf of Nederlandse Vereniging tot Bescherming van Vogels v. Staatssecretaris van Landbouw, Natuurbeheer en Visserij* (ECJ) 2004 (**known as the Waddensea Case**). The case concerned a commercial activity in the Dutch Wadden Sea, which had been designated a Special Area of Conservation. The Court held that the particular

activity fell within the concept of 'plan or project' within the meaning of Article 6(3) of the Habitats Directive. A plan or project likely to have significant effect on the site is only to be authorised if it is ascertained that it will **not** adversely affect the integrity of the site, i.e. **where no reasonable scientific doubt remains as to the absence of such effects**. In case of doubt, the authorities are prevented from authorising the plan or project under the precautionary principle, article 6(3).

In *Vogelbescherming Nederland a.o. v. Minister van Landbouw, Natuur en Voedselkwaliteit* (EJC) (2006), the European Court of Justice ruled that the Dutch Minister of Agriculture, Nature Management and Food Quality should not have issued a licence in relation to an activity in a protected nature area. It had not been demonstrated that the activity would **not** have significant effects on a protected nature area. In accordance with the Habitats Directive, appropriate assessments should have been made of the implications of the plans/projects on the site given the interpretation given to the Habitats directive in the Waddensea case (ECJ).

The Communication from the European Commission on the precautionary principle (2000) provides guidelines on the use of the precautionary principle to all EU member states.

"It covers cases where scientific evidence is insufficient, inconclusive or uncertain and preliminary scientific evaluation indicates that there are reasonable grounds for concern that the potentially dangerous effects on the environment, human, animal or plant health may be inconsistent with the high level of protection chosen by the EU".

Where action is deemed necessary, measures based on the precautionary principle should be, *amongst other things*:

- *proportional* to the chosen level of protection,
- *non-discriminatory* in their application,
- *consistent* with similar measures already taken,
- *based on an examination of the potential benefits and costs* of action or lack of action (including, where appropriate and feasible, an economic cost/benefit analysis),
- *subject to review*, in the light of new scientific data, and
- *Capable of assigning responsibility for producing the scientific evidence* necessary for a more comprehensive risk assessment.

SCENIHR's Scientific Opinion on "possible effects of Electromagnetic Fields (EMF) on human health"

The European Commission is monitoring new developments in scientific research and international regulatory action in the field of EMF. The Commission, in consultation with the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR), invited stakeholders to comment on SCENIHR's recently finalised scientific opinion on "Possible effects of Electromagnetic Fields (EMF) on Human Health" until 3rd November 2006. Following public consultation, SCENIHR adopted its final opinion in March 2007²⁴. The committee considered Radio Frequency fields, Intermediate Frequency fields, Extremely Low Frequency fields and

²⁴ SCENIHR "Possible effects of Electromagnetic Fields (EMF) on Human Health. SCENIHR adopted this opinion at the 16th plenary of the 21st march 2007 after public opinion after consultation "

http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_007.pdf

Static fields. SCENIHR acknowledged that nearby power and high voltage transmission lines are major sources of exposure to Extremely Low Frequencies (ELF) in the environment.

In considering ELF fields, it came to a similar conclusion as in 2001 :

“ 3.5.5. Conclusions about ELF fields

The previous opinion came to a similar conclusion regarding carcinogenicity of ELF fields as IARC's evaluation, namely that ELF magnetic fields are possibly carcinogenic. This conclusion was mainly based on epidemiologic results indicating that exposure to ELF fields might be a cause of childhood leukaemia. This assessment is still valid. The fact that the epidemiological results for childhood leukaemia have little support from known mechanisms or experimental studies is intriguing and it is a high research priority to reconcile these data. For some other diseases, notably breast cancer and cardiovascular diseases, later research has indicated that an association is unlikely. For yet some other diseases, such as neurodegenerative disease and brain cancer, the issue of an association to ELF fields remains open and more research is called for. A relation between ELF fields and symptoms has not been demonstrated.

Of current interest is to arrive at a better understanding of recently published genotoxicity results including those from the REFLEX study.....

4. Opinion

ELF: “Based on the scientific rationale presented above the SCENIHR updates the previous opinion and concludes the following: The previous conclusion that ELF magnetic fields are a possible carcinogen, chiefly based on childhood leukaemia results, is still valid. There is no generally accepted mechanism to explain how ELF magnetic field exposure may cause leukaemia. Animal studies have not provided adequate evidence for a causal relationship. No consistent relationship between ELF fields and self-reported symptoms (sometimes referred to as electrical hypersensitivity) has been demonstrated. In addition, for breast cancer and cardiovascular disease, recent research has indicated that an association is unlikely. For neurodegenerative diseases and brain tumours, the link to ELF fields remains uncertain.

In the overall conclusion : “The Committee is mindful of the mandate that requested particular attention to be paid to a wide variety of issues. In most cases the data available are very limited. Some of these issues will be addressed in further opinions as more data become available.”

SCENIHR's Opinion concluded with research recommendations and for ELF fields in particular: “Epidemiological results indicate an increased risk of leukaemia in children exposed to high levels of ELF magnetic fields, however, this is not supported by animal data. The mechanisms responsible for the childhood leukaemia and the reasons for the discrepancy are unknown and require a better understanding and clarification”.

Importantly, in a further consideration it added, “Studies including exposure to combinations of frequencies as well as combinations of electromagnetic fields and other agents need to be considered”.

European Commission's reply to petition from individual over potential health hazard from HVOL in Poland

An individual from Poland²⁵, on behalf of local residents, petitioned the European Parliament over the potential public health hazard that would be caused by radiation from a proposed high voltage overhead power line in western Poland. The petitioner was concerned that the local population would be exposed to radiation likely to cause various forms of cancer, including leukaemia among children. He argued that this infringed the relevant EU legislation and sought action by the European Parliament to ensure that the local residents would not be exposed to dangerous and carcinogenic radiation.

In the European Commission's reply to the European Parliament²⁶, the European Commission (EC) acknowledged the public concern concerning the issue of Electromagnetic Fields (EMF). The EC stated that it had been monitoring the potential health effects of EMF for a long time, requesting the review of scientific literature, financing research, disseminating information and contributing to the establishment of a legal framework for the protection of workers and citizens. It referred to EU measures including:

- 1999 Council Recommendation with "*Recommended limits to the exposure to EMF of the general public in the Member States*" based on the guidelines of the International Commission on Non-Ionizing Radiation Protection (ICNIRP).
- EU Directive established limits concerning EMF originating from products placed or put into service on the EU market 1999
- EU Directive on the minimum health and safety requirements regarding the exposure of workers to the risk arising from physical agents (Electromagnetic fields) 2004 (known as EMFs Directive)

Referring to the application of protective measures in particular circumstances, such as those mentioned for power lines (e.g. in the vicinity of schools, hospitals, residential areas), the EC stated that the implementation of protection measures is a matter for national measures to address, using where appropriate the European Recommendation referred to above as a basis. It also referred to the recently finished final opinion of the work by the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) to update the opinion of the Scientific Committee on Toxicity, Ecotoxicity and the Environment (CSTEE)²⁷ of 30 October 2001²⁸ on possible health effects of electromagnetic fields, radio frequency fields and microwave radiation on human health.

Transboundary pollution/ precautionary approach by countries bordering EU Member States

The European Union now has 27 members: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, France, Finland, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania,

²⁵ Krzysztof Kuklinski, spokesman for local protest group from villages of Kamionki, BorÅłwiec, Daszewice, Skrzynekii in Western Poland. www.kamionki.snap.pl/petycja/Protest7.htm
</NPET>Petition <NPET>0628/2006 to European Parliament </NPET>

²⁶[www.europarl.europa.eu/registre/commissions/peti/communication/2007/390329/PETI_CM\(2007\)390329_EN.doc](http://www.europarl.europa.eu/registre/commissions/peti/communication/2007/390329/PETI_CM(2007)390329_EN.doc)

²⁷ http://europa.eu.int/comm/health/ph_risk/committees/sct/sct_en.htm

²⁸ http://europa.eu.int/comm/health/ph_risk/committees/sct/documents/out128_en.pdf

Luxembourg, Malta, Netherlands, Poland, Portugal including Romania, Slovakia, Slovenia, Spain including the Canary Islands, Sweden, UK (includes Gibraltar) .

Parts of the EU outside Europe and Mediterranean: French territory includes French Guyana (in South America), Martinique and Guadeloupe (Caribbean islands), and Reunion (an island off South East of Africa). Portuguese territory includes the Azores and Madeira (islands in the Atlantic). Spanish territory includes Canary Islands.

EU member states will need to take into account the potential for transboundary pollution before siting HVOLs close to the EU border. This will particularly be the case, if a neighbouring non EU country has or later adopts a precautionary approach to EMF levels and Power lines. E.g. Switzerland shares a border with 5 EU member states. In Swiss²⁹ laws to protect the environment, radiation is defined as a pollutant and provision is made to take preventative measures to limit the effects of pollution³⁰. A situation could also arise, where a non EU Country builds a HVOL very close to the EU border, giving rise to health concerns by the EU residents living nearby.

Countries that cannot resolve a dispute regarding transboundary pollution, can take their case to the UN's International Court of Justice. Should such a dispute occur, the EU may be required to reconsider its policy regarding powerlines/EMF limits and a precautionary approach.

4.3.5 UK policy on the precautionary principle

The Government set out its commitment to the use of the precautionary principle in its 1999 White Paper on "sustainable development", with reference to Article 15 of the 1992 Rio Declaration on Environment and Development (see below). Since the "Rio" declaration, the UK has signed up to a number of international agreements which include a precautionary approach to environmental harm, including harm to humans, animal and plant health.

In 2002, the United Kingdom Interdepartmental Liaison Group on Risk Assessment (UK-ILGRA) (the now defunct advisory group to the Health and Safety Commission and Executive), published a consultation paper on "*Precautionary principle: Policy and Application*". The paper addressed the need for consistency between Government Departments when invoking a precautionary approach towards hazardous activities.

The UK-ILGRA policy proposed to clarify and develop existing understanding and to underpin domestic application of the precautionary principle by Government Departments. Its policy was broadly consistent and expanded on the European Commission's Communication on the Precautionary Principle 2000, although its application was subject to the UK's commitments to existing international treaties or agreements. The work of UK-ILGRA was taken on by Risk Support Team of HM treasury Department.

Although EU law provides for member states to adopt a precautionary approach in environmental matters, it was decided in the English Courts that it was not mandatory to do so. In *R v Secretary of State for Trade and Industry ex parte Duddridge* (1995), the Court of Appeal held that that the Secretary of State was not obliged to adopt a precautionary principle for national policies under Article 130r (now Article 174) of the EU Treaty unless required by an EU directive. The judicial review was taken by 3 local families who were concerned about the potential adverse

²⁹ Switzerland is one of the few non-EU European countries

³⁰Article 1, Federal Law 814.01 relating to the Protection of the Environment.

health effects of a proposed underground electricity cable in a residential area of East London. They unsuccessfully challenged the Secretary of State's decision to give consent for the power line without adopting a precautionary approach. The families had wanted the Secretary of State to issue regulations under the Electricity Act 1989 to restrict the emission of EMFs from electricity cables because of the risk of leukaemia. The families expressed their wishes to the Secretary of State who considered again the scientific evidence available at that time and decided there were insufficient grounds to adopt a precautionary approach.

Given the current scientific knowledge and raised awareness of statutory consultees and the public, these issues are more likely to be considered earlier in the process of future consent applications.

4.3.6 When should Government apply a precautionary approach to Powerlines/EMFs?

In considering whether to adopt a precautionary approach, a decision has to be reached as to whether current scientific knowledge demonstrates sufficient possibility as to risk of harm to invoke a precautionary approach. It may be at the time a decision is made, there is insufficient evidence of risk to warrant a precautionary approach. However, the decision needs to be reviewed on regular basis, as science develops. In any event, a precautionary approach needs to be adopted as emerging evidence starts to indicate there could be risk of harm and a long before conclusive proof is reached.

In some EU legislation a project or plan is unable to proceed unless no reasonable doubt remains as to risk of significant adverse affects on habitats or species.

4.3.7 Costs of a precautionary approach in relation to powerlines/EMFs

There is a growing call for a precautionary approach to be adopted towards EMFs and powerlines. The costs associated with adopting a precautionary approach to powerlines include:

- rerouting or undergrounding of electricity lines. It is much more expensive to route a power line underground.
- Land Owners' lost profits from development rights from planning restrictions on private land near powerlines:
- Land already granted planning permission for development or
- Land designated for development in local development documents.
- Purchase of properties. In circumstances where a dwelling is under a HVOL and not practicable to reroute line (probably only likely in exceptional circumstances).
- Costs of any other measures to reduce overall EMF exposure. E.g. rewiring of households near to powerlines and provision of EMF screening materials. Faulty or badly configured house wiring can give rise to high EMF levels. In these circumstances, re-wiring will reduce electric and magnetic fields. Screening materials will reduce electric but not magnetic fields.
- Cost of integrating EMFs into a pollution control regime and training up regulatory teams.

4.3.8 Planning and introduction of restricted planning zones

At the moment, some council have wanted to adopt a precautionary approach to powerlines in their area, by adopting a policy in the local development framework (previously local plan) but have no authority to do so. If the Government introduced legislation, it would give local planning authorities the authority to adopt such policies. It would also allow LPAs to refuse individual planning applications near existing powerlines. In adopting a precautionary approach, the Government would also need to decide whether land owners were to receive compensation for loss of development rights and if so, who would pay for it.

4.3.9 Electricity companies and rerouting or burying electricity lines

In some countries electricity generation, transmission and distribution is run by nationalised industries. In the UK, the electricity industry was privatised in 1990 and the privatised electricity companies are operating under licences issued by the Government, hence also known as licence holders. As statutory undertakers, they have to comply with the Human Rights Act 1998. However, electricity companies are also large public companies (Plcs). As Plcs they have responsibilities and in some cases legal obligations to:

- their consumers (to maintain supply, health and safety, provide competitive price),
- employees (health and safety),
- all members of the public who could be affected by their actions (health and safety),
- their shareholders (who are looking for return on their investment).

It is not so easy for any of the electricity companies to individually decide to adopt a more precautionary approach. Anything less than a unanimous decision by either all transmission networks (with the high voltage lines) and/or all the distribution networks, may create legal pitfalls. Also, if a precautionary approach is to be instigated and adopted by electricity companies themselves, without Government backing, then it would fall to OFGEM to approve any subsequent increase in electricity prices being passed on to the consumer. If OFGEM did not approve price increases, then the cost of precaution would be met by the company and its shareholders.

Licence holders have to juggle responsibilities to their shareholders with their legal liabilities. If members of the public develop serious illnesses later in life due to their exposure to EMFs from powerlines now, it would be difficult for the electricity companies to say that they did not foresee that possibility. In which case, the electricity companies might find themselves facing a negligence claim. It is possible that other parties could be joined to the action. The Gas and Electricity Markets Authority, the corporate body to OFGEM, together with the Secretary of State for Trade and Industry, both have a duty to protect the public from dangers from electricity due to electricity generation, transmission, distribution and supply³¹.

Should the Government introduce policies to restrict development near to existing/proposed powerlines, then it would also need to address the question of compensation to land owners who have lost development rights.

³¹ S3 and s29 of the Electricity Act 1989 (as amended by Utilities Act 2000 and Energy Act 2004).

4.3.10 The case for legislation rather than voluntary precautionary measures towards powerlines/EMFs

One of the more important factors underpinning any decision to adopting precautionary measures is deciding "*who will pay for the cost?*" which may vary according the precautionary measure being taken. Precautionary measures are mainly associated with replacing powerlines and lost development rights. See the SAGE report for cost benefit analysis. If a mandatory precautionary approach was brought in by Government, it would also have to determine who would bear the cost.

If and when the Government decide that that the weight of scientific evidence is sufficient to adopt a precautionary approach and introduced legislation, it would remove some of the difficulties faced by the licence holders. The Government would decide who should pay for those measures: licence holders, consumers and/or the tax payer. If consumers were expected to fund all or part of the precautionary measures, then OFGEM would be required to approve any electricity price increases.

4.4 Planning Considerations

4.4.1 Planning system administered by Local Planning Authority

The planning system, known as development control, is administered by the local planning authority (LPA), and appeals determined by the Planning Inspectorate, an executive agency for the Department of Communities and Local Government (DCLG). Although most planning decisions are made by the appropriate local planning authority (usually the district council), the First Secretary of State has reserve powers to 'call-in' an application, for him to make the decision. Planning applications are only called-in when there are issues involved which have more than local significance. An inquiry is normally held before the First Secretary of State makes a decision.

Local development frameworks (replacing local plans)

A local development framework (LDF) is folder of local development documents prepared by the local planning authority which outlines how planning will be managed in their area over the next 10-15 years. LDFs were introduced by the Planning and Compulsory Purchase Act 2004 and replace local plans. The local development framework has to comply with Central Government policies, in the form of Planning Policy Statements (previously Planning Policy Guidance Notes). At the time the LDF is compiled, the public have the chance to object to planning policies. When an application is for planning permission, the proposed development or change of use has to be in accordance with the local development documents, unless other material consideration indicates otherwise.

When LPAs are compiling their local development framework (or previously with the outgoing local plan), it is not possible adopt precautionary policies in respect of overhead powerlines and restrict future development near to existing overhead powerlines because of the health risk although it may be possible to do so on "*visual amenity*"³² grounds.

³² Amenity being "A feature that increases attractiveness or value, especially of a piece of land or a geographic location"

Attempts to introduce a precautionary approach prevented

In a number of cases local planning authorities have tried to introduce a precautionary approach but have had to modify their plans due to objections at the draft stage of the plan by National Grid and/or other electricity companies and/or developers.

For example of an objection lodged by National Grid, see the 2003 Draft London Plan³³.

Plan had to be modified to remove precautionary measures

For an example of an unsuccessful attempt to introduce a precautionary policy, see the Torbay local Plan (1995-2011), Revised Deposit Version. At the Local Plan inquiry in 2001-2³⁴, there were objections to the policy by Torbay Unitary Council to restrict development under overhead powerlines on health grounds.

- Against the policy: the 4 objections came from National Grid, SWEB (now EDF electricity company), the Government Office for the South West and a major regional house builder.
- For the Policy, but did not think it went far enough: Friends of the Earth argued that any restriction on development should be extended further, up to 100 metres from powerlines.

Following the Inspector's Report of Inquiry into objections to Local Plan, the plan was modified to remove the precautionary element towards powerlines and high voltage powerlines.

Plan still contains some element of precaution

However, it might be considered that Wyre Borough Council has managed to adopt a precautionary approach in its local plan³⁵ under its *High Voltage Powerlines Policy (COMM5)*³⁶:

*"Proposals for development which is intended to be occupied on a regular and frequent basis and is located directly under high voltage powerlines will be refused planning permission. Proposals for development in the vicinity of high voltage powerlines will be **approved provided** there would be **no detrimental effects on the safety of future occupants** of the development.*

Justification

*The Council will, in the interests of safety, endeavor to ensure that development is located beyond the overhang of powerlines. The distance will clearly be dependent on the height, spread and capacity of the line. In accordance with the Electrical Safety Quality and Continuity Regulations 2002, the Borough Council will seek to ensure that all **development** is located so that it **does not**, so far as is reasonably practicable, **come so close** to any overhead line or pylon **as to cause danger**. **Danger is interpreted as***

33 Draft London Plan Examination in Public 3(c) East London/ Thames Gateway Session Tuesday, 18 March 2003 see submission by Malcolm Judd and Partners on Behalf of National Grid

www.london.gov.uk/london-plan-eip/submissions2003/subs-3c-parts/NationalGrid.rtf

34 Torbay Unitary Council, Devon www.torbay.gov.uk/lp_mod_chapter9.pdf

35 In 2004 following the Planning and Compulsory Purchase Act 2004, Wyre Borough Council abandoned its local plan review, to pursue a local development framework. Although the review process was not completed, the policies of the Local Plan 1st Deposit Draft were adopted by Wyre Borough Council for Development Control Purposes. [www.wyrebc.gov.uk/Council_Services/Planning_Services/Planning_Policy_and_Conservation/Wyre's_Development_Plan/Local_Plan_Review/Chapter_10 - Community And Infrastructure Services.asp](http://www.wyrebc.gov.uk/Council_Services/Planning_Services/Planning_Policy_and_Conservation/Wyre's_Development_Plan/Local_Plan_Review/Chapter_10_-_Community_And_Infrastructure_Services.asp)

36 *Ibid.*

including, danger to life from shock, burn, injury or mechanical movement to persons, livestock or domestic animals. All proposals will be considered against the advice given in the 'Design Guidelines for Development near High Voltage Overhead Lines' produced by the National Grid Company plc."

It could be considered that "detrimental effects" or "injury" could include risk to health from EMFs.

Applications for planning permission

Currently, when local planning authorities (LPA) make planning decisions, they can not take into account any potential health risk from an existing overhead power line near to the proposed development or application for change of use of land. Similarly, the LPA can not refuse planning application for development near to powerlines on the grounds of the potential health risk.

4.4.2 Requirement for planning permission prior to development of land

Under s57 Town and Country Planning Act 1990 (TCPA 1990), any proposed development or change of use of land normally requires a grant of planning permission from the local planning authority (LPA). When considering a planning application, the LPA may grant permission with or without conditions attached or refuse planning permission. Once planning permission has been granted, it can not be rescinded, unless there is a condition attached. E.g. Grant of permission given for a set time period, after which the applicant has to re-apply for further permission.

S51 of the Purchase and Compulsory Purchase Act 2004 reduced the time period within which planning permission must be implemented, from 5 years down to 3 years. A reduction is also made in the time in which development must be implemented following the grant of outline planning permission.

There are no 3rd party rights of appeal against a grant of planning permission other than:

- an "aggrieved person" being able to make an application to the High Court to challenge the decision on a "question of law" under s284 and s288 Town and Country Planning Act 1990.
- An applicant (i.e. eligible interested party with "locus standi") can bring a judicial review³⁷ if it appears the process was flawed.

Electricity and EMFs are not covered under *Planning (Hazardous Substances) Act 1990*, legislation relating to hazardous substances.

Powerlines have permitted development rights ("deemed planning permission").

Under s90 (2) TCPA 1990, powerlines which have been granted consent by the Secretary of State under s37 of the Electricity Act 1989, are deemed to have been granted planning permission and therefore, enjoy "permitted development rights".

Part 17 (G) of Town and Country Planning (General Permitted Development) Order 1995, also allows permitted development rights for other categories of electricity lines.

³⁷ See more about judicial review/ locus standi in 4.9.3

Part 17 (G)(a) allows permitted development rights for the installation or replacement in, on, over or under land of an electric line provided it is not on a highway and does not require consent under s37 Electricity Act 1989.

Electricity lines usually have “permitted development rights” and do not require planning permission. However, the presence of existing powerlines may have an effect on future planning applications for the development or change of use of land nearby. E.g. Potential for pollution from a proposed business to become more toxic if charged up by the power line.

4.4.3 Material considerations for Local Planning Authority to consider

The Government issues guidance to local authorities on planning policy in the form of Planning Policy Statements (PPSs), which are now replacing the old style Planning Policy Guidance Notes (PPGs). LPAs have to take these guidances into account when preparing development plans³⁸ and they also be relevant to decisions on individual planning applications and appeals. The Government also issues circulars to LPAs to give advice on land use planning and development. There are no specific PPSs (or PPGs) on powerlines at present.

1999 Draft Circular of Land-Use Planning and EMFs

The Department of the Environment, Transport and the Regions and the Department of Health jointly issued a Draft Circular on Land-Use Planning and Electromagnetic Fields in 1999. This gives advice to LPAs on land-use planning and development (such as overhead powerlines and telecommunications base stations) giving rise to electromagnetic fields (EMFs). It has not yet been superseded by another Circular.

Under s70 Town and Country Planning Act 1990, when making a decision about whether to grant planning permission, the LPA has to have regard for the Local Development Framework or Local Development Plan, now being phased out)³⁹ as far as material to the application and any other material considerations.

S54a TCPA 1990 requires the LPA to determine the planning application in accordance with the local development framework unless material considerations indicate otherwise.

Perceived or potential health effects and court cases

Material considerations can include perceived or potential adverse health effects. The public's concerns over the health issue of EMFs, is a material consideration for the LPA. In *Newport CBC v Secretary of State for Wales and Browning Ferris Environmental Services Ltd* (1997), the Court of Appeal held that public concern about safety is a material consideration for a planning application even if the public perception of danger was unfounded.

³⁸ Since Planning and Compulsory Purchase Act 2004, local development plans now consist of a portfolio of documents known as the Local Development Framework.

³⁹ Planning and Compulsory Purchase Act 2004 introduced a new development plan system based on Regional Spatial Strategies (which replace Structure Plans) and Local Development Frameworks (which replace Local Plans and Unitary Development Plans) in England).

There have been a number of court cases involving EMF emissions from mobile phone masts. Although they are not the same as the EMFs given off by power lines, it is worth considering how the courts have addressed the issue of EMFs and potential health risk.

Court found decision maker to decide how much weight to attach to public concerns

In a subsequent case, *Trevett v Secretary of State for Transport, Local Government and the Regions* (2002), relating to a planning inspector's grant of planning permission for 3 TETRA masts, the court held that it was up to the inspector to decide how much weight to attach to public concerns of perceived health risk.

Court decided LPA had failed to consider health risk from mobile phone mast

There have been a number of judicial reviews, mainly unsuccessful, challenging the grant of planning permission for mobile phone masts on issues relating to the perceived or potential health effects from EMFs. However, in *R(Harman) v Winchester CC* (2002), the court quashed the grant of planning permission for a mobile phone mast as the LPA had failed to consider the potential health effects. On re-determination the LPA refused planning permission, but it was granted by a planning inspector on appeal.

Court found ICNIRP guidelines sufficient in mobile phone mast case

In *T-Mobile UK Ltd, Hutchinson 3G UK Ltd, Orange Personal Communications Services Ltd v The First Secretary of State and Harrogate Borough Council* [2004], the Court of Appeal had to consider the provisions in PPG8 regarding the planning authority's responsibility in respect of health risks due to telecommunication. The Court referred to the policy which expressed that if in any given case the ICNIRP guidelines are met the planning authority should not have to look further in relation either to an actual health risk or perceived health risks. It stated that to depart from this policy there would have to be an exceptional course which would have to be specially justified. The court concluded that there was nothing to show why, on the facts of the particular case, compliance with the ICNIRP guidelines was insufficient to allay perceived fears about health issues.

Claimants could not demonstrate harm in mobile phone mast case

Petursson and Ingvarsdottir v Hutchison 3G UK Ltd (2005) was a High Court case where the claimants applied under the Electronic Telecommunications Code in Schedule 2 Telecommunications Act 1984 (as amended by the Communications Act 2003) for the removal of a mobile phone mast near their property on the grounds that it was causing them ill-health. The claimants had kept a log of their ill health from the time the mobile phone mast was installed. They attributed ill-health from that time; however, it later transpired that the mast was not operational until several months after installation. The court also heard evidence from experts about EMFs and decided there was not sufficient evidence to demonstrate harm, although did acknowledge the need for more scientific research, "It is clear that there is continuing scientific debate and continuing research work and there is widespread recognition that such on-going debate and research is desirable".

At the time the case was heard, the couple had moved away from the property, but as the court held they had not on balance shown material prejudice to their enjoyment of the property, it did not have to consider their "standing". The court stated that it had no submissions on any human rights issues and had not been invited to consider any Human Rights aspects.

It is believed, but not confirmed, that substantial legal costs from the other side were awarded against the unsuccessful claimants. In this case the claimants had already moved from the property, so they did not personally stand to gain any benefit from the case. Some aggrieved citizens chose to take legal action, knowing it will be a test case or for the principle of the matter. However, anyone who is funding a court case out of their own purse needs to think very carefully about the financial implications if they lose the case.

Court appears misconstrue the nature of EMFs in mobile phone mast case

The Court of Appeal in Northern Ireland is in a separate jurisdiction from the English legal system; however cases in either jurisdiction would be persuasive precedent for the other. A case heard by the Court of Appeal in Northern Ireland, *HM (a minor), Re Application for Judicial Review* [2007] NICA, considered whether a child's human rights under Article 2⁴⁰ and 8⁴¹ of ECHR were breached by Department of Environment for Northern Ireland (DOENI) by allowing a mobile phone mast with several antennae to be sited near her home. The case involved the health issues associated with telecommunications development as addressed in Planning Policy Statement 10 (same as PPS8 in England) and the authority the decision maker had to determine what weight to attach to such considerations in any particular case.

In Northern Ireland, planning decisions are made by NI's Dept. of Environment, not the local authority, although the local authority is a statutory consultee. In this case the local authority, Castlereagh Borough Council, was concerned about the health issues raised and eventually expressed its opposition to the proposed development, although it seems that the DOENI did not formally take this into account⁴². The DOENI's view was that the place for determining health safeguards was the Northern Ireland's Department of Health, Social Services and Public Safety, (DHSSPS), as it was a public health issue not a planning issue. The DHSSPS considered that the guidelines of the International Commission on Non-Ionising Radiation Protection (ICNIRP) for public exposure to electromagnetic fields, as accepted by the World Health Organisation, were based on the best evidence available to date. If the proposed mobile telecommunications development met the ICNIRP guidelines in all respects, the DHSSPS believed it should not be necessary for the Department to consider this aspect further.

In the first court hearing in the High Court, it was unsuccessfully claimed that the child's convention rights had been breached by both articles 2 and 8 of the European Convention rights, whereas the appeal concentrated on article 8. At the appeal it was claimed that the DOENI had breached the child's human rights under Article 8 as it had failed to consider whether the child's apprehension that the mobile telephone mast *might* have a deleterious effect on her health. The court found therefore that, "*the appellant's argument on this issue is not strictly speaking a claim based on a convention right. Rather it is a contention that the department failed to have regard to a relevant consideration viz the appellant's fear that her health may be affected by the proximity of the mast. But there is nothing in the jurisprudence of ECtHR which suggests that something imperceptible, intangible and having no effect on the senses can potentially infringe article 8. It is a prerequisite of such a violation that it be shown that there was an actual interference with the appellant's private sphere and that a level of severity was attained (the test in Fadeyeva v Russia). The appellant has failed to establish that there was such an interference and the department cannot be faulted for having failed to take an apprehension that there might have been into account.*"

40 Art.2 Right to life

41 Art. 8 Right to respect for private and family life

42 Legal team for Applicant, 18th May 2007.

The court seems to have erred in fact:

- **EMFs are not imperceptible** as some people can actually perceive their presence⁴³,
- **EMFs may appear intangible**, they can be measured by suitable instrumentation⁴⁴,
- Although EMFs are not always detected by the senses, they have an impact on the body and have the potential to cause harm to human health⁴⁵.

In May 2007, it is understood a decision is awaited on an application for leave to appeal to the House of Lords.

How Ecclesiastical courts have dealt with EMFs (from Mobile phone masts) Mobile phone masts installed in Church towers have permitted developments rights, but objections based on concerns about potential health effects from EMFs has resulted in a number of cases being referred to the Ecclesiastical Courts. The courts have usually allowed the masts as the EMF levels were within Government guidelines. However, in *Emmanuel Church, Re Bentley* (2005), the Chancellor refused the application on the grounds of strong local opposition on health and safety issues which could cause significant pastoral difficulties.

4.4.4 Should LPA take into account air emissions from a proposed development combining with EMFs and/ or Corona ions from existing powerlines?

Gateshead MBC v Secretary of State for the Environment (1994), involved the question of whether the local planning authority or Her Majesty's Inspectorate of Pollution (HMIP)⁴⁶ should be considering the acceptable emission levels from a proposed development. The case related to the decision of the Secretary of State to grant planning permission for a waste incinerator plant. The LPA appealed, asking for the planning permission to be quashed. The Court of Appeal refused the LPA's appeal, stating that the issues of emissions, pollution and acceptable limits were matters within the competence of the HMIP and the Secretary of State for Environment was justified in deciding that the areas of concern expressed by the planning inspector could properly be determined by the HMIP as its powers were adequate to deal with such concerns. Whilst the court decided that pollution control was an issue for the regulator, not the local planning authority, the case only involved emissions from the proposed development, not the combination of emissions from the proposed development combining with pollutants from an existing facility.

LPAs may therefore, still be able to take into account as a material consideration, the effect of any proposed planning application to develop or change the use of land near to existing powerlines. If the proposed use of land includes an operation with air emissions, the LPA should take into account the impact to the environment of the air emissions combining with EMFs and/or Corona

⁴³ Alasdair Philips, Powerwatch May 2007.

In 2003, Sweden acknowledged electro hypersensitivity as a physical disability.

⁴⁴ *ibid.*

⁴⁵ *ibid.*

⁴⁶ The Environment Agency now carries out the functions of the defunct HMIP.

Ions from existing overhead powerlines. If LPA considered this would have a negative impact, they might refuse planning permission or only grant planning permission with conditions⁴⁷.

4.5 Environmental Impact Assessment (EIA) legislation

4.5.1 Environmental Impact Assessment (EIA) is derived from EU law

Environmental assessments were originally introduced into UK following the 1985 EU Directive on the Assessment of the Effects of Certain Private and Public Projects. It required planning applications for certain large scale developments have to be accompanied by an environmental impact assessment. The developer has to submit an Environmental Statement which contains information to inform the LPA how the proposed development will impact on the environment and may include mitigating measures to reduce the adverse effects. Even if a development is likely to have a negative impact on the environment, the LPA can still approve the development provided it takes into account the information in the Environmental Statement when making the decision.

The 1985 EU Directive was transposed into national law through the Town and Country Planning (Assessment of Environmental Effects) Regulations 1988. S71a was also added to the Town and Country Planning Act 1990 to give the Secretary of State powers to extend the categories of projects (or developments) requiring an environmental assessment. The Secretary of State used these powers to introduce the Town and Country Planning (Assessment of Environmental Effects) (Amendment) Regulations 1994 which extended the classes of project which could be the subject of an environmental assessment. A specific regulation relating to EIAs for Electricity Works was introduced in 2000, see 4.5.5.

The 1985 EU Directive was later amended by the 1997 EU Directive amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment (referred to as the EIA Directive). The 1997 Directive was transposed into national law through the Town and Country Planning (Environmental Impact Assessment) Regulations 1999 and revoked the 1988 Regulations. Following the 1999 Regulations, the "*Environmental Assessment*" became known as the "*Environmental Impact Assessment*". Circular 2/99⁴⁸ gives guidance on the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999.

Certain proposed projects may require an EIA under either the Town and Country Planning (EIA) Regulations 1999 (as amended)⁴⁹ or other EIA Regulations relating to use of land that does not normally require planning permission.

In addition to requirements for an EIA for proposed projects, the 2001 EU SEA Directive now requires EIAs for plans and programmes which establish the framework for the future development consent of projects listed under the 1997 directive.

⁴⁷ This would be considered more fully if the planning application needed an EIA or the installation needed a PPC permit.

⁴⁸ Circular 2/99 on Dept. of Communities and Local Government website www.communities.gov.uk/index.asp?id=1144398

⁴⁹ Town and Country Planning (EIA) Regulations 1999 (amended by 2000 Regulations) apply to England and Wales. Scotland- Town and Country Planning (EIA) Regulations (Scotland) 1999 (amended by 2002 Regulations). N.I.- Planning (EIA) Regulations (Northern Ireland) 1999.

4.5.2 Environmental Statement

The criteria for an Environmental Statement from the 1997 Directive amending the 1985 EU Directive on the assessment of the effects of certain public and private projects on the environment⁵⁰ :

ANNEX III SELECTION CRITERIA REFERRED TO IN ARTICLE 4 (3)

1. Characteristics of projects

The characteristics of projects must be considered having regard, in particular, to:

- the size of the project,
- the cumulation with other projects,
- the use of natural resources,
- the production of waste,
- pollution and nuisances,
- the risk of accidents, having regard in particular to substances or technologies used.

2. Location of projects

The environmental sensitivity of geographical areas likely to be affected by projects must be considered, having regard, in particular, to:

- the existing land use,
- the relative abundance, quality and regenerative capacity of natural resources in the area,
- the absorption capacity of the natural environment, paying particular attention to the following areas:
 - (a) wetlands;
 - (b) coastal zones;
 - (c) mountain and forest areas;
 - (d) nature reserves and parks;
 - (e) areas classified or protected under Member States' legislation; special protection areas designated by Member States pursuant to Directive 79/409/EEC and 92/43/EEC;
 - (f) areas in which the environmental quality standards laid down in Community legislation have already been exceeded;

⁵⁰ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31997L0011:EN:HTML>

- (g) densely populated areas;
- (h) landscapes of historical, cultural or archaeological significance.

3. Characteristics of the potential impact

The potential significant effects of projects must be considered in relation to criteria set out under 1 and 2 above, and having regard in particular to:

- the extent of the impact (geographical area and size of the affected population),
- the transfrontier nature of the impact,
- the magnitude and complexity of the impact,
- the probability of the impact,
- the duration, frequency and reversibility of the impact.

ANNEX IV INFORMATION REFERRED TO IN ARTICLE 5 (1)

1. Description of the project, including in particular:

- a description of the physical characteristics of the whole project and the land-use requirements during the construction and operational phases,
- a description of the main characteristics of the production processes, for instance, nature and quantity of the materials used,
- an estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed project.

2. An outline of the main alternatives studied by the developer and an indication of the main reasons for this choice, taking into account the environmental effects.

3. A description of the aspects of the environment likely to be significantly affected by the proposed project, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors.

4. A description (1) of the likely significant effects of the proposed project on the environment resulting from:

- the existence of the project,
- the use of natural resources,
- the emission of pollutants, the creation of nuisances and the elimination of waste,

and the description by the developer of the forecasting methods used to assess the effects on the environment.

5. A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.

6. A non-technical summary of the information provided under the above headings.

7. An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the developer in compiling the required information.

(1) This description should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project.

4.5.3 Strategic Environmental Assessment of Plans and Programmes (SEA)

The 2001 EU Directive On the Assessment of the Effects of Certain Plans and Programmes on the Environment⁵¹ (known as the "strategic environmental assessment" or "SEA" Directive) was transposed into the Environmental Assessment of Plans and Programmes Regulations 2004⁵². The Directive applies to plans and programmes which whose preparation began on or after 21 July 2004. It requires certain plans and programmes to have an environmental impact assessment which are likely to have a significant effect on the environment. The Directive provides for the monitoring of the implementation of plans and programmes, to identify unforeseen adverse effects and to enable remedial action to be taken.

Annex 7 of the Directive makes provision for transboundary consultations.

Plans or programme likely to have significant effects:

ANNEX II defines the Criteria for determining the likely significance of effects referred to in Article 3(5), including;

"2. Characteristics of the effects and of the area likely to be affected, having regard, in particular, to

- the probability, duration, frequency and reversibility of the effects,*
- the cumulative nature of the effects,*
- the transboundary nature of the effects,*
- the risks to human health or the environment (e.g. due to accidents)".*

What plans and programmes will SEA Directive apply to?

The SEA Directive applies to a wide range of plans and programmes. An environmental assessment is usually mandatory for plans and programmes which are prepared for agriculture,

⁵¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32001L0042:EN:HTML>

⁵² applies to any plan or programme which relates either solely to England, or to England and any other part of the UK. Each of the SEA Regulations for NI, Scotland and Wales apply to plans and programmes which relate solely to one of these parts of the UK:

Environmental Assessment of Plans and Programmes(Wales)Regulations 2004

Environmental Assessment of Plans and Programmes(NI)Regulations 2004

Environmental Assessment of Plans and Programmes (Scotland)Regulations 2005 (replaces 2004 Regulations)

forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning, or land use and which set the framework for future development consent for projects listed in Annexes I and II to the EU 1985 EIA Directive (as amended by 1997 Directive).

Plans and programmes covered by the SEA Directive will include those for town and country planning and land use, including local Development Documents and Regional Spatial Strategies (and the outgoing local authority development plans and Regional Planning Guidance). Also plans or programmes requiring assessment under Article 6 or 7 of the EU 1992 Habitats Directive. Also any plans and programmes which set the framework for development consent of projects (not limited to those listed in the EIA Directive) and which are determined by screening to be likely to have such effects).

Projects which involve electricity transmission or generation listed in Annex I and II :

Annex I, 2. Thermal power stations and other combustion installations with a heat output of 300 megawatts or more and nuclear power stations and other nuclear reactors (except research installations for the production and conversion of fissionable and fertile materials, whose maximum power does not exceed 1 kilowatt continuous thermal load).

Annex II, 3. Energy industry

(a) Industrial installations for the production of electricity, steam and hot water (unless included in Annex I).

(b) Industrial installations for carrying gas, steam and hot water; transmission of electrical energy by overhead cables.

(j) Installations for hydroelectric energy production.

As well as projects involving electricity transmission or generation included in Annex I and II, other plans or programmes subject to the SEA Directive are also likely to include powerlines and in some cases HVOLs.

4.5.4 Categories of development requiring an EIA under Town and Country Planning (EIA) (England and Wales) Regulations 1999:

- Schedule 1 of the Regulations lists developments where an EIA is mandatory. Schedule 1, includes (2):
 - (a) Thermal power stations and other combustion installations with a heat output of 300 megawatts or more; and
 - (b) Nuclear power stations and other nuclear reactors (except research installations for the production and conversion of fissionable and fertile materials, whose maximum power does not exceed 1 kilowatt continuous thermal load).
- Schedule 2 lists categories of development where an EIA is required if it is likely to have a significant impact on the environment and "*applicable thresholds and criteria*". The LPA has the discretion to decide whether a development needs an EIA.

Schedule 2, Para 3 lists the "Energy industry" including:

Column 1 - Description of development	Column 2 -Applicable thresholds and criteria
(a)Industrial installations for the production of electricity, steam and hot water (unless included in Schedule 1);	The area of the development exceeds 0.5 hectare.
(j) Installations for hydroelectric energy production	The installation is designed to produce more than 0.5 megawatts.
(i)Installations for the harnessing of wind power for energy production (wind farm)	(i) The development involves the installation of more than 2 turbines; or (ii) the hub height of any turbine or height of any other structure exceeds 15 metres

For powerlines requiring an EIA, see Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2000(as amended).

4.5.5 Electricity Works requiring EIA

Although powerlines are normally granted deemed planning permission, this is withdrawn if the powerlines require an EIA and a planning application has to be submitted along with an Environmental Statement.

- Schedule 1 lists developments where an EIA is mandatory and
- Schedule 2 developments do not have permitted development rights unless the LPA has adopted a screening opinion that an EIA is not required. Schedule 2 developments include

Under the **Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2000**(as amended)⁵³ an EIA is required for certain higher voltage powerlines applications to the Secretary of State for Trade and Industry for consent.

Schedule 1 provides the criteria for power line installation for which an EIA is mandatory, including:

(2) an electric line installed above ground with

(a) a voltage of 220 kilovolts or more and

(b) a length of more than 15 kilometres, the installation of which (or the keeping installed of which) will require a section 37 consent."

⁵³ The Electricity Works (Environmental Impact Assessment)(England and Wales) Regulations 2000 (as amended) applies to England and Wales.

Scotland- Electricity Works (EIA)(Scotland) Regulations 2000

Northern Ireland- draft regulations being drawn up.

Schedule 2 provides the criteria for an EIA providing the power line will have a significant effect on the Environment, including:

(3) an electric line installed above ground with a voltage of 132 kilovolts or more, requiring a s37 consent but which is not Schedule 1 development.

(4) an electric line installed above ground in a sensitive area, requiring a s37 consent but which is not Schedule 1 development and does not fall within para(3).

(4)(a)-(i) Lists Sensitive areas and includes Areas of Special Scientific Interest, land within 2 kilometres of SSSI, Nature Conservation areas, National Parks, The Broads, World Heritage sites, Monuments under Ancient Monuments and Archaeological Areas Act 1979, Areas of Outstanding Natural Beauty and European Sites under Conservation (Natural Habitats) Regulations 1994.

Any EIA for powerlines to be installed near to an existing industrial, trade or business premises with air emissions, should take into account the impact to the environment of those air emissions on EMFs and/ or corona ions from proposed overhead powerlines.

Public inquiry into Beauldy-Denny line in Scotland

Following a large number of objections, a public inquiry is being held into a proposed transmission line upgrade across Scotland⁵⁴. In 2005, Scottish Hydro-Electric Transmission Ltd (SHETL)⁵⁵ and SP Transmission Limited (SPT)⁵⁶ submitted applications to the Scottish Ministers under Section 37 of the Electricity Act 1989, to construct and operate the line in their respective licensed areas. The proposed 137 mile route was for a 400kV line transmission line to replace an existing 132kV transmission line between Beauldy, west of Inverness, and Denny, west of Falkirk. The application for the line is one that requires an environmental impact assessment. The proposed route will have 600 pylons and in places the pylons would be 65 metres high. In 2006 the Scottish Ministers announced that the proposed upgrade to the overhead electricity transmission line would be referred to a public inquiry.

The Statement of Case submitted by Before Pylons, and on behalf of Scotland Before Pylons, stated that Chapter 32 of the Environment Statement, compiled by the applicants, failed to address the potential health impacts. The Public Inquiry is expected to report later in 2007.

4.5.6 Other issues relevant to all EIAs

Transboundary effects and transboundary projects

Article 7 deals with the procedures where a project is likely to have significant effect on the environment of another member state. Para 27 provides for situations where developments in England or Wales are likely to have significant effects in another EEA State⁵⁷. Para 28 provides

⁵⁴ Beauldy-Denny Public Inquiry in Scotland began in February 2007. For official website of Beauldy Denny public inquiry www.beauldydenny.co.uk

⁵⁵ a transmission company subsidiary of Scottish and Southern Energy Power Plc

⁵⁶ A transmission company subsidiary of Scottish Power Plc

⁵⁷ EEA State is within the within the European Economic Area, i.e. the European Union (EU) member states, Norway, Iceland or Liechtenstein.

for situations where projects in another EEA State are likely to have significant transboundary effects in England or Wales.

Transboundary projects, involving two or more countries, will need the planning approval of each country, but will also need a combined EIA to assess the overall project.

What constitutes a project ?

Proposed developments involving modifications to Annex I projects may also come under Annex I criteria, if the modification itself exceeds the threshold levels⁵⁸. Similarly, changes or extensions to Annex II projects may also come under the regulations.

There have been occasions when a planning application or an EIA for a project have been challenged on the grounds that the application was part of a larger development. A developer could try to avoid an EIA by breaking the proposed development down into several smaller projects (sometimes referred to as salami slicing). In *R v Swale BC ex parte RSPB* (1991) a planning application for Lappel Bank did not include an EIA and RSPB challenged on the grounds that it was part of a larger development. The application failed, but the Court stated that the LPA should look beyond what was applied for, to see if the application was part of a more substantial development.

There is also the situation where decision makers have to consider the cumulative impact of development projects. Following a public inquiry in 1997, the Secretary of State refused planning permission to the Government's nuclear waste agency, UK Nirex Ltd, for a testing facility. UK Nirex Ltd agreed that the testing facility was a first step in the process to decide whether the site was suitable for a nuclear waste repository. The Secretary of State stated that future applications would have to take into account the environmental effects of the waste repository.

Circular 2/99 gives guidance on when the LPA should have regard not only for the cumulative effect but also appropriate to consider more than one application for development to determine whether an EIA is required.

"Applying the guidance to individual development

45. In general, each application (or request for an opinion) should be considered for EIA on its own merits. The development should be judged on the basis of what is proposed by the developer.

46. However, in judging whether the effects of a development are likely to be significant, local planning authorities should always have regard to the possible cumulative effects with any existing or approved development. There are occasions where the existence of other development may be particularly relevant in determining whether significant effects are likely, or even where more than one application for development should be considered together to determine whether or not EIA is required.

Multiple applications

For the purposes of determining whether EIA is required, a particular planning application should not be considered in isolation if, in reality, it is properly to be regarded as an integral part of an inevitably more substantial development. In such cases, the need for EIA (including the applicability of any indicative thresholds) must be considered in respect of the total development. This is not to say that all applications which form part of some wider scheme must be considered

⁵⁸ EU case C-431/92 Commission v Germany (1995)

together. In this context, it will be important to establish whether each of the proposed developments could proceed independently and whether the aims of the Regulations and Directive are being frustrated by the submission of multiple planning applications."

There are examples where it has been argued that an application for a development involving a power station or transmission lines has not considered the whole project. One example is the application for a S36 consent that was granted for a power station in Teesside, in 1989, without considering the transmission line. Formal complaints were made to the EC Commission by REVOLT and CPRE with regard to the 1985 EIA Directive, but were dismissed. The secretary of state later indicated that the transmission line would serve other purposes and was not exclusively for the new power station.

Another example is the 1994-5 275 kV Moyle interconnector⁵⁹ in Northern Ireland, going under the sea to Ayrshire in Scotland. Initially there were 3 separate EIAs, each submitted to a separate authority:

- The NI works (landfall, underground cables, interconnector and overhead lines),
- The Scottish works,
- The undersea works.

At the pre-inquiry meeting for the NI inquiry, a witness successfully argued that having separate EIAs was in violation of the 1985 EU EIA Directive. The Dept. of Environment for Northern Ireland accepted the submission and the whole proceedings were delayed while a combined EIA was produced. The applications were still submitted separately to three different authorities, but the possible cumulative effects were now included.

Currently there is a proposal for a Tyrone to Cavan 400kV interconnector between NI and Republic of Ireland. Not only will the project need approval from both countries, but the environmental impact assessment will have to consider the combined whole project and the inter-state impacts⁶⁰.

Need to consider proposed developments being built near existing powerlines

When considering planning applications which require an EIA, the Environmental Statement may need to take into account the implications of proposed developments being built near to existing powerlines. If the proposed use of land includes an operation with air emissions, it should take into account the impact to the environment of the air emissions combining with EMFs and/ or corona Ions from existing overhead powerlines (this should also be considered under PPC permits).

4.5.7 Offshore development

Offshore developments which need powerlines may require an EIA under the Electricity Works (EIA) Regulations 2000. Offshore developments also require other consents including a licence under the Food and Environmental Protection Act 1985 (FEPA 1985), administered by the Marine Consents and Environment Unit of DEFRA. Where there is scientific uncertainty, as a condition of the licence, the effects of the offshore structure have to be monitored. Marine renewable energy

⁵⁹ An interconnector connects the transmission lines of 2 countries).

⁶⁰ Revolt, June 2007. www.revolt.co.uk

facilities, such as offshore wind farms, channel energy back to the shore through underwater power cables. Due to the uncertainty of the effects of EMFs on marine organisms, COWRIE (Collaborative Offshore Wind Research into the Environment), commissioned an "Investigation into the effects of electromagnetic fields (EMF) generated by offshore wind farm cables under various conditions". The investigation was completed in 2006 and indicated more research is needed. If any subsequent research does indicate underwater power cables have an adverse effect on marine life, then further conditions could be imposed on the operators' licences.

It would seem that a cautious approach is being taken in respect of potential adverse affects to marine organisms from EMFs emitted by underwater powerlines.

4.5.8 EU Habitats and Birds Directives

Under the EU Habitats Directive and Birds Directives, large infrastructure projects can only go ahead if there no reasonable doubt remains as to the significant adverse effects on the habitats or the species. See 4.3.4 for references to the 2004 *Waddensea* Case and other European Court of Justice cases involving the precautionary principle under the Habitats Directive.

The Habitats Directive 1992 (EU Directive on the conservation of natural habitats and of wild fauna and flora 1992) was transposed into UK law with Conservation (Natural Habitats, & c.) Regulations 1994(as amended)⁶¹. The Directive provides for the designation of protected areas, "Special Areas of Conservation" (SAC). Article 6 of the Habitats Directive requires parties to consider whether the project will result in a 'deterioration' of natural habitats or the habitats of a species or the 'disturbance' of a species. They must also consider the potential cumulative impact from different projects and examine alternatives to the proposed project.

The Birds Directive 1979 (EU Directive on the conservation of wild birds 1979) was transposed into UK law through the Wildlife & Countryside Act 1981 (as amended) and The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)⁶². The Directive provides for the designation of Special Protection Areas (SPA) to protect the species.

Article 4(4) of the Birds Directive requires:

"In respect of the protection areas referred to in paragraphs 1 and 2 above, Member States shall take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the birds, in so far as these would be significant having regard to the objectives of this article. Outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats".

These conservation laws would only be relevant to proposed plans or projects involving powerlines if it could be demonstrated that the EMFs affected the habitats of a species/ birds and/or disturbed the species or birds themselves⁶³.

61 [Habitats Directive transposed into NI law through N.I. Conservation (Natural Habitats, & c.) Regulations (N.I.)1995 (as amended)

62 Birds Directive was transposed into NI law through:

Wildlife (Northern Ireland) Order 1985,

The Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 and the Conservation (Natural Habitats, &C.)(Northern Ireland) Regulations 1995 (as amended).

63 An information sheet was published in February 2005 by WHO on "Electromagnetic fields & public health: Effects of EMF on the Environment". It stated that studies to date had found little evidence of EMF effects on fauna at levels

4.6 Pollution control legislation

4.6.1 Introduction to pollution control legislation

It is considered whether any of the existing pollution control regimes can be applied to EMFs and powerlines.

Primary Legislation for controlling pollution was introduced through the Environmental Protection Act 1990, with each regime being regulated by either the Environment Agency or the local authority. In some instances, the legislation has been derived from EU law.

- **Integrated Pollution Prevention and Control Regime** regulates pollution from industry (i.e. emissions to air, discharges to water and disposal to land). IPPC legislation is derived from EU law and supersedes Integrated Pollution Control under Part I Environmental Protection Act 1990, being phased out by 2007(see 4.6.2).
- **Air pollution** is covered by "*Local Air Pollution Prevention Control by local authorities*" (LAPPC) under Part B of Integrated Pollution Prevention Control regime (see 4.6.2.)and supersedes "*Air Pollution Control by Local Authorities*" (LAPC) under Part 1 Environmental Protection Act 1990. Air pollution is also covered statutory nuisance under s79 Environmental Protection Act 1990 (see 4.6.5).
- **Waste Management legislation** is derived from EU law and is transposed into national law through Part II Environmental Protection Act 1990 and Waste Management Licensing Regulations 1994 (see.4.6.3).
- **Contaminated Land** is regulated under Part IIA Environmental Protection Act 1990 (see 4.6.4)
- **Statutory Nuisances and Clean Air** is regulated under Part III Environmental Protection Act 1990 (see 4.6.5)
- **Water Pollution** is dealt with by various laws including Water Resources Act 1991, regulated by the Environment Agency. (see 4.6.6)

below ICNIRP's guideline levels, other than significant effects on the flight of bees. There is damage to trees at electric field strengths far above ICNIRP's levels due to corona discharge at the tips of the leaves, with such field levels being found only close to the conductors of very high voltage powerlines.

The information sheet stated that "Environmental studies are needed since any adverse influence of EMF on plants, animals such as birds, and other living organisms, while important in their own right, could also ultimately impact on human life and health. However, much of the existing work in this area has been scattered in approach and uneven in quality. A co-ordinated research agenda that addresses the scientific issues raised by increasing environmental EMF levels does not exist. In view of the facts discussed above, there is no urgent need to give research priority to this field over other health topics. However, while there is a small but active research effort in this area, it would be informative to:

Design bio-effects research with wildlife species in mind and aimed at identifying their possible responses to new human-made sources of EMF energy. Appropriate choice of species for study is very important (e.g. birds since they can enter areas of high field strength),

Develop environmental guidelines for EMF exposure at different frequencies, drawing on information from well-performed studies. Such guidelines might resemble those developed for human health, but with appropriately adapted thresholds to ensure that EMF levels are below those producing adverse consequences in the environment."

www.who.int/peh-emf/publications/facts/environimpact/en/print.html

None of the various pollution control regimes specifically provide for pollution from EMFs or powerlines. The main question is whether any emissions from powerlines could or should be applied to existing legislation. If so, does the Government need to introduce amendments to the legislation or new guidance on interpretation of the law?

4.6.2 Pollution Control Regimes for industry

4.6.2.1 Integrated Pollution Control (IPC) and Local Air Pollution Control (LAPC), (Part I EPA 1990 (*being phased out by October 2007. See incoming IPPC & LA-PPC at 4.6.2.2*))

Part 1 Environmental Protection Act 1990 consisted of 2 regimes:

- Integrated Pollution Control (IPC) regime required operators of polluting processes to obtain licences from the Environment Agency before discharging emissions into the environment (Air, Water and Land)
- Local Air Pollution Control (LAPC) regime required operators to obtain a licence from the local Authority before discharging emissions into the Air.

IPC and LAPC under Part 1 EPA 1990 are being replaced by a similar but more comprehensive Integrated Pollution Prevention Control (IPPC) and Local Air Pollution Prevention and Control (LA-PPC) regimes.

The IPC/LAPC licences will be completely phased out by October 2007 and since 1999, all new installations, and existing installations subject to "substantial changes", have been required to apply for a permit under the new PPC regime.

The outgoing IPC regime, regulated by the Environment Agency, was not applied to EMFs/ Corona ions/ powerlines. However, it would seem that the legislation did provide for electricity to be included. S1 (3) EPA 1990, outlined the criteria for processes to come under the IPC regime. It applied to processes released into the environment, and substances which were capable of causing harm to man or any other living creature. Under s (1)13 EPA 1990, the definition of "substances" included electricity or heat⁶⁴.

64 Environmental Protection Act 1990,

S1(3) "Pollution of the environment means pollution of the environment due to the release (into any environmental medium) from any process of substances which are capable of causing harm to man or any other living organisms supported by the environment."

(4) "Harm" means harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes offence caused to any of his senses or harm to his property; and "harmless" has a corresponding meaning.

(5) "Process" means any activities carried on in Great Britain, whether on premises or by means of mobile plant, which are capable of causing pollution of the environment and "prescribed process" means a process prescribed under section 2(1) below.

(6) For the purposes of subsection (5) above— "activities" means industrial or commercial activities or activities of any other nature whatsoever (including, with or without other activities, the keeping of a substance);

(13) "Substance" shall be treated as including electricity or heat

4.6.2.2 Integrated Pollution Prevention and Control (IPPC) Regime and Local Air Pollution Prevention and Control (LA-PPC) Regime

The new Integrated Pollution Prevention and Control Regime is provided by the Pollution, Prevention and Control Act 1999 (PPCA 1999) and the Pollution Prevention and Control (PPC) Regulations 2000. Activities /installations are regulated according to their classification:

Classification	regime	regulator	Scope of regulatory Control
Part A (A1)	IPPC	Environment Agency	Air, water, land, Odour, waste, energy, Accident prevention, Noise and vibrations
Part A (A2)	IPPC	Local authority	Air, water, land, Odour, waste, energy, Accident prevention, Noise and vibrations
Part B	LA-PPC	Local authority	Air

Part A (A (1) and A (2)) activities/ installations which come under Integrated Pollution Prevention Control (IPPC)

Part A only (not Part B) of the new Integrated Pollution Prevention and Control Regime is derived from the 1996 EU Directive on Integrated Pollution Prevention Control (IPPC Directive). It was transposed into national law through the PPCA 1999 and the PPC Regulations 2000. IPPC is more comprehensive than the outgoing IPC regime and regulatory control is required for odour, waste, **energy**, accident prevention, noise and vibrations as well as emissions to as air, water and land, before the installation can operate

- **Part A (1) installations** are the potentially most polluting industries and technologically complex processes ⁶⁵ which regulated by the Environment Agency. There are about 5000 installations covered by part A (1).
- **Part A (2) installations** includes the other operations⁶⁶ covered by Part A and regulated by the local authority. There are about 1000 installations covered by Part A (2) and they are generally smaller and potentially less polluting than Part A (1) installations.
- **Part B installations come under Local Air Pollution Prevention Control (LA-PPC)**⁶⁷. Part B is not derived from the EU Directive and supersedes the local air pollution control from Part 1 of Environmental Protection Act 1990. Regulatory control is by the local authority and related to air emissions only.

⁶⁵ Activities under Part A1, A2 and Part B listed in Schedule 1 of Pollution Prevention and Control Regulations 2000 (as amended). There are variations for Northern Ireland.

⁶⁶ *Ibid.*

⁶⁷ *Ibid.*

The regulators must set permit conditions for the operation of an installation which are based on the "Best Available Techniques" (BAT), but in the case of Part B installations, these conditions only apply to emissions to air.

Whilst powerlines would not be considered an installation as such, powerlines could be considered as a directly associated activity which could have an effect on pollution.

See DEFRA's "Practical Guide to Integrated Pollution Prevention and Control", www.defra.gov.uk/environment/ppc/manual/index.htm

In version 4:

"3 IPPC ACTIVITIES, INSTALLATIONS AND OPERATORS

3.1 IPPC is concerned with controlling the environmental impacts of installations in which any activities, listed in Part A of Schedule 1 to the PPC Regulations, are carried out. Annex III summarises the main industry sectors covered by these activities.

3.2 Annex I explains the term "installation". In summary, the installation comprises not only any relevant unit carrying out Part A activities prescribed in Schedule 1 to the PPC Regulations, **but also any location where directly associated activities which have a technical connection with the Schedule 1 activities and which could have an effect on pollution are carried out.** Once the extent of an installation has been established, each activity within it is subject to permitting."

It is therefore possible that energy, waste emissions or noise from a power line could also be included in the conditions of a PPC permit.

If an operator requires a PPC permit for the operation of an installation with overhead powerlines going into/ from that installation, the regulator should consider the potential health effect of corona ion charging of toxic airborne particles.

S2 of Pollution Prevention and Control Act 1999 defines "activities" as

"means activities of any nature, whether-

(a) industrial or commercial or other activities, or

(b) carried on on particular premises or otherwise,

and includes (with or without other activities) the depositing, keeping or disposal of any substance;"

S2 PPCA 1999 also defines "environmental pollution" as

*"means pollution of the air, water or land which **may** give rise to **any** harm; and for the purposes of this definition (but without prejudice to its generality)-*

*(a) "pollution" includes pollution caused by noise, heat or vibrations **or any other kind of release of energy, and***

(b) "air" includes air within buildings and air within other natural or man-made structures above or below ground.

(3) In the **definition of "environmental pollution"** in subsection (2), "harm" means-
(a) harm to the health of human beings or other living organisms;

- (b) harm to the quality of the environment, including-
 - (i) harm to the quality of the environment taken as a whole,
 - (ii) harm to the quality of the air, water or land, and
 - (iii) other impairment of, or interference with, the ecological systems of which any living organisms form part;
- (c) **offence to the senses of human beings;**
- (d) damage to property; or
- (e) impairment of, or interference with, amenities or other legitimate uses of the environment (expressions used in this paragraph having the same meaning as in Council Directive 96/61/EC).

As "any other kind of release of energy" is considered a form of "environmental pollution" under s2 PPCA 1999, it would appear that the legislation could be applied to EMFs/Corona ions.

Including powerlines in the permit of an installation requiring a PPC permit is one issue to be considered, the other is whether powerlines themselves should be subject to a PPC permit.

The omission of EMFS/Corona ions/powerlines from the IPPC/ LA-PPC regimes could be challenged by judicial review. If the UK courts were unsure as to the interpretation of Part A (IPPC) only, which is derived from the EU IPPC Directive, then the matter could be referred to the European Court of Justice for a preliminary Ruling on the interpretation of the EU Directive.

Alternatively, the Government could issue guidance or amend current legislation to specifically include EMFs/Corona ions into Part B (LA-PPC) part of the legislation, which is not covered by the EU IPPC Directive.

4.6.3 Waste Management under Part II Environmental Protection Act 1990

Part II "Waste on Land" Environmental Protection Act 1990 provides for legislation on the management of waste.

Under S33 EPA 1990, it is an offence to *deposit* or knowingly cause or knowingly permit the deposit of controlled waste in or on land unless a waste management licence authorising the deposit is in force.

S34 EPA 1990 introduced a "*Duty of Care*" in respect of any person who imports, produces, carries, keeps, treats, or disposes of controlled waste, or as a broker has control of such waste.

If EMFs from powerlines could be defined as "waste" under section 75 of the Environmental Protection Act 1990, they would then be subject to waste management regulations.

S75 defines the meaning of "waste" and household, commercial and industrial waste and hazardous waste.

(1) The following provisions apply for the interpretation of this Part.

(2) "Waste" includes--

(a) any substance which constitutes a scrap material or an effluent or other unwanted surplus substance arising from the application of any process; and

(b) any substance or article which requires to be disposed of as being broken, worn out, contaminated or otherwise spoiled;

but does not include a substance which is an explosive within the meaning of the Manufacture and Storage of Explosives Regulations 2005.

(3) Any thing which is discarded or otherwise dealt with as if it were waste shall be presumed to be waste unless the contrary is proved.

(4) "Controlled waste" means household, industrial and commercial waste or any such waste.

(6) Subject to subsection (8) below, "industrial waste" means waste from any of the following premises-

(c) any premises used for the purposes of, or in connection with, the supply to the public of gas, water or electricity or the provision of sewerage services;

(d) waste of any other description prescribed by regulations made by the Secretary of State for the purposes of this paragraph.

Can EMFs / Corona Ions be "waste"?

Waste legislation is derived from the EU Waste Framework Directive. On occasion the question of "what is waste?" has been difficult for national courts to determine in relation to other materials (not EMFs) and cases have been referred on to the European Court of Justice for an Article 234 preliminary ruling on interpretation of the EU law.

EMFs/ Corona ions from powerlines have not been brought under waste management legislation. Any finite decision as to whether EMFs/ Corona ions from powerlines should come under the definition of "waste" for the purposes of the EU Waste Framework Directive could become a decision for the European Court of Justice.

4.6.4 “Contaminated Land” under Part IIA EPA 1990

Contaminated land is defined under s78a of EPA 1990 and requires a: "pollutant linkage" between pollutant, a pathway and target. Land can be contaminated by different causes or a combination of pollutants, so there can be more than one significant pollutant linkage.

POLLUTANT LINKAGE

CONTAMINANT	RELEVANT RECEPTOR (Target)	PATHWAY which either allows
(Pollutant)	See Table A DETR Circular: human beings, property, (buildings, crops or animals subject to property rights), sites protected by nature conservation laws.	a) The contaminant to cause significant harm to that receptor OR there is a significant possibility of such harm being caused to the receptor OR b) Pollution of controlled waters is being or likely to be caused ⁶⁸

The definition of “contaminated land” under s78A:

(2) "Contaminated land" is any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that—

- (a) Significant harm is being caused or there is a significant possibility of *such harm being caused*; or
- (b) Pollution of controlled waters is being, or is likely to be, caused;⁶⁹

and, in determining whether any land appears to be such land, a local authority shall, subject to subsection (5) below, act in accordance with guidance issued by the Secretary of State in accordance with [section 78YA](#) below with respect to the manner in which that determination is to be made

(4) Subject to subsection (4A), "harm" means harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes harm to his property.

S78 (9) defines “substance” as follows: "substance" means any natural or artificial substance, whether in solid or liquid form or in the form of a gas or vapour;"

68 Scotland- from April 2006, s78(A)(2)(b) has been amended to:

“Significant pollution of the water environment is being caused or there is a significant possibility of such pollution being caused”.

England and Wales- under the Water Act 2003, s78 (A)(2)(b) is also to be amended, but has not been implemented yet.

69 Ibid.

Can EMFs contaminate land?

EMFs would not seem to fall within the definition of “*substance*” under s78 (A) EPA 1990, since they are forces rather than matter in a physical form (solid, gas or liquid). It is unclear whether corona charging would come under the definition either, although corona is a physical manifestation of excess electrons and electrical charge which leak into the atmosphere. If EMFs do not give rise to “*contaminated land*”, Statutory Nuisance under s79 (1)(a) may apply instead.

It is noted that Department of Environment, Food and Rural Affairs (DEFRA) and the Welsh Assembly Government extended the existing “*contaminated land regime*” under Part 2A EPA 1990 to include radioactive contaminated land in England and Wales as from 2006. Of course this applies to ionising radiation which is different from non-ionising radiation. Ionising radiation leaves a physical contamination on the land after the initial exposure to radiation. The radiation can be measured and continues to be a risk to human health until the contamination is cleaned up. Whereas non-ionising radiation leaves no physical contamination to the land after the EMF emitting facility is switched off.

4.6.5 Statutory Nuisances, Part III Environmental Protection Act 1990

Excessive noise from powerlines would come under statutory nuisance.

EMFs/Energy⁷⁰/Corona Ions have not yet been specifically designated a statutory nuisance, so it has to be considered whether they fulfil the criteria for the existing categories. In 2006, a draft private members bill, in relation to the regulation of telecommunications masts, proposed a definition of excessive EMF levels, which would then constitute a statutory nuisance. EMFs are already designated a matter which can constitute a statutory nuisance in Australian legislation⁷¹. In Swiss law, radiation is considered a form of pollution⁷².

Under s 79(1) EPA 1990, the local authority (LA) has a duty to inspect its area and to investigate complaints of nuisance. If a LA is satisfied a statutory nuisance exists or is likely to occur, then it must take steps to make the person responsible to abate the nuisance.

S79 (1) lists a number of matters that constitute statutory nuisances.

- (a) **any premises in such a state** as to be prejudicial to health or a nuisance;
- (b) **smoke emitted from premises** so as to be prejudicial to health or a nuisance;
- (c) **fumes or gases emitted from premises** so as to be prejudicial to health or a nuisance;
- (d) **any dust, steam, smell or other effluvia arising on industrial, trade or business premises** and being prejudicial to health or a nuisance;
- (e) **any accumulation or deposit** which is prejudicial to health or a nuisance;

⁷⁰ Energy would include EMFs.

⁷¹ (e.g. Western Australia -Environmental Protection Act of 1986,“Section 49(1) in this section unreasonable emission means an emission of noise, odour or electromagnetic radiation which unreasonably interferes with the health, welfare, convenience, comfort or amenity of any person”. Australian Capital Territory’s Environmental Protection Act 1990, s4 defines “Pollution” as “energy, including heat, noise or radioactivity, or light or other electromagnetic radiation.”)

⁷² Article 1, Federal Law 814.01 relating to the Protection of the Environment

- (f) **any animal kept in such a place or manner** as to be prejudicial to health or a nuisance;
- (fa) **any insects emanating from relevant industrial, trade or business premises** and being prejudicial to health or a nuisance;⁷³
- (fb) **artificial light emitted from premises** so as to be prejudicial to health or a nuisance;⁷⁴
- (g) **noise emitted from premises** so as to be prejudicial to health or a nuisance;
- (ga) **noise** that is prejudicial to health or a nuisance **and is emitted from or caused by a vehicle, machinery or equipment in a street** or in Scotland, road; and
- (h) **any other matter declared by any enactment** to be a statutory nuisance;⁷⁵

Criteria for statutory nuisance

The criteria for nuisance is "prejudicial to health or a nuisance", it does not have to be both. A "matter" becomes a nuisance when it interferes with a person's use or enjoyment of land, *Godfrey v Conway CBC*(2000). It is not necessary to prove harm for a matter to be a nuisance. However, it was held in *Wivenhoe Port v Colchester BC* (1995), that the nuisance must materially interfere with the personal comfort of residents in so much as it affects their well-being although it does not have to be prejudicial to their health. Following *London Borough of Southwark v Simpson* (1999), it was held that a witness did not have to have a medical qualification in order to give evidence on the question as to whether the condition of premises was such as to be likely to cause injury to health, but it was necessary that the witness had some form of experience or expertise in the area.

Who can take action under statutory nuisance?

As well as the LA being able to take action, under s82 an "aggrieved person" can also take action under statutory nuisance, but only once the nuisance exists or has existed and is likely to reoccur. An "aggrieved person" does not have to have property rights, such as owner, tenant, unlike civil action for (private) nuisance. The Local Authority will not take action under statutory nuisance if the matter is regulated under another pollution control regime, however this does not prevent an individual taking action under s 82.

It is a criminal offence not to comply with an abatement notice and the local authority can pursue criminal proceedings in the Magistrates Court. If it considers such a remedy would be inadequate, the LA can take civil proceedings in the High Court.

Statutory nuisance applicable to powerlines?

EMFs do not obviously seem to fall within any of these categories part from possibly s79 (1)(a) or s79 (1)(e).

S79 (1)(a) - Premises in such a state. Premises experiencing levels of EMFs which are prejudicial to health or a nuisance could be deemed a Statutory nuisance under s79 (1)(a). It could possibly be argued that the premises in s79 (1)(a) are contaminated by EMFs. However, if the premises

⁷³ new statutory nuisances introduced by Clean Neighbourhoods and Environment Act 2005

⁷⁴ *Ibid.*

⁷⁵ Clean Neighbourhoods and Environment Act 2005 introduced 2 new statutory nuisances

come under the criteria for “contaminated land”, then the land might be subject to clean up measures under “Contaminated land” legislation, Part IIA EPA 1990, instead.

s79 (1)(A) excludes land which is defined as excludes land in a “contaminated state” as being a statutory nuisance.

S79(1)(B) defines a ‘contaminated state’ for the purposes of subsection (1A) above if, and only if, it is in such a condition, by reason of substances in, on, or under the land, that

- (a) harm is being caused or there is a possibility of harm being caused⁷⁶; or
- (b) Pollution of controlled waters is being, or is likely to be, caused; and, in this subsection ‘harm’, ‘pollution of controlled waters’ and ‘substance’ have the same meaning as in Part IIA of this Act⁷⁷.

NB. The definition for “contaminated land” for England and Wales under Part IIA EPA 1990 requires “significant harm” or “significant possibility of harm” and is therefore a stricter criteria than for statutory nuisance. In some instances “contaminated land” has been excluded from Statutory Nuisance legislation, but not fallen under “contaminated land” legislation either.

EMFs would seem not to fall within the definition of substance under s78 (9), since they are forces rather than matter in a physical form (solid, gas or liquid) although it might apply to corona ions. If EMFs/ Corona Ions do not give rise to “contaminated land”, they may be considered a statutory nuisance under s79 (1)(a), “premises in such a state”.

S79 (1)(e) - Accumulation or a deposit. Any accumulation or a deposit is considered a statutory nuisance under s79 (1)(e). It could be argued that EMFs/ Corona ions are a form of accumulation or deposit, even if a temporary or intermittent deposit.

Bird excrement from birds who settle on the power line can be deemed a statutory nuisance. Some residents living under powerlines have problems with their properties being fouled by birds who settle on the lines. It can also be a public nuisance, *Wandsworth London Borough Council v Railtrack PLC* (2000). In cold weather ice can form on the pylons and cables and then chunks can fall to the ground when it starts to melt. This too could be considered a statutory nuisance if it falls on to private property or areas where the public have access⁷⁸.

S79 (1)(g) and (ga) - Noise. Noise emitted from premises is defined as a statutory nuisance under S79 (1)(g). Whether s79 (1)(g) applies to powerlines depends on whether powerlines and/or pylons could be defined as “premises”. Noise emitted from or caused by a vehicle, machinery or equipment in a street is a statutory nuisance under s79(1)(ga). Whether s79(1)(ga) could be applied to any power line overhanging a street depends on whether a power line and/or pylons could be defined as “machinery or equipment”.

It might be more likely that powerlines be considered “equipment” rather than “premises” in which case, statutory nuisance would apply to noise from powerlines where the powerlines or pylons overhang a street.

76 In Scotland, (a) significant harm is being caused or there is a significant possibility of such harm being caused;]

77 In Scotland, (b) significant pollution of the water environment is being caused or there is a significant possibility of such pollution being caused and in this subsection "harm", "pollution" in relation to the water environment, "substance" and "the water environment" have the same meanings as in Part IIA of this Act.

78 Similar to concerns expressed about chunks of ice falling off wind turbines in bad weather.

Do EMFs/ Corona Ions or noise from Powerlines come under Statutory Nuisance?

Whether EMFs/ Corona Ions from be a nuisance under s79(1)(a) or (e), or noise from powerlines be a nuisance under s79(g) or (ga), would be a question of interpretation by the courts.

Even if these matters were applicable to statutory nuisance, in each individual case, it would have to be proved that the matter did constitute a nuisance. S80(7) provides a defence of use of Best Practicable Means (BPM) by Industrial, trade or businesses for non-compliance to s79(1)(a), (e), (g) and (ga).

Currently, action has not been taken by a local authority or an individual in respect of EMFs/Corona Ions under statutory nuisance, so the law has not been tested. Uncertainty could be removed if "energy", including EMFS, was introduced into legislation as a new statutory nuisance.⁷⁹

If statutory nuisance is not applicable, then the common law offence of public nuisance might be applicable instead.

4.6.6 Water Pollution

Water pollution is unlikely to be an issue. Water pollution laws would only become relevant if it could be demonstrated that EMFs had the effect of directly or indirectly polluting water. E.g. If EMFs were found to have an adverse cocktail effect on pollutants already in water. e.g. causing any waste liquids discharged into a river to become more toxic.

There are various laws which control the pollution of public sewers or "controlled waters", as defined under s104 Water resources Act 1991. The most relevant being the Water Resources Act 1991 which is regulated by the Environment Agency. Under s85 (1) it is a strict liability offence if : "A person contravenes this section if he causes or knowingly permits any poisonous, noxious or polluting matter or any solid waste to enter any controlled waters".

The Court of Appeal it was held that "polluting matter" meant "matter" that was capable of causing harm, *R v Dovermoss Ltd* (1995).

4.7 Other Offences

4.7.1 Part II "Consumer Safety" Consumer Protection Act 1987 (CPA 1987)

Part II relates to consumer safety and offences for non compliance. In *Coghill v Morgan* (1998), a scientist who was concerned about non-ionising radiation from mobile phones and the lack of warning labels on the product, took a private criminal prosecution against a retailer under s10 Consumer Protection Act 1987. The defendant was acquitted as he had complied with NRPB guidelines. S10 of the Act has now been repealed by General Product Safety Regulations 2005.

A criminal prosecution taken under consumer protection legislation in relation to EMFs against an electricity distributor or supplier would be unlikely to succeed provided the defendant was acting within national guidelines.

⁷⁹ S79 (1)(h) Environmental Protection Act 1990.

4.7.2 Public Nuisance (a common law offence, not statute law)

If EMFs were found not to come under the criteria of Statutory Nuisances under Part III, Environmental Protection Act 1990, they could come under the common law offence of "Public Nuisance". Public Nuisance is defined as "*an act, not warranted by law, materially affecting the reasonable comfort of a class of her Majesty's subjects who come within the sphere or neighbourhood of its operation*". Whether the group of people affected by the nuisance are counted as a class, is a question of fact in each case. Powers to prosecute under public nuisance are restricted to local authorities (under s222 Local Govt. Act 1972), the Attorney-General or an individual with the consent of the Attorney-General.

In *R. v Rimmington and R v Goldstein* (2005) the House of Lords comprehensively reviewed the law relating to Public Nuisance. The court stated that "A core element of the crime of public nuisance is that the defendant's act should affect the community, a section of the public, rather than simply individuals. Obvious examples would be the release of smoke or fumes which affect a village or neighbourhood or the emission of loud noises which disturb the neighbourhood. In such cases the release or emission or-where it is repeated-each release or emission affects the public in the area". The Court also stated that good practice and respect for the primacy of a statute required that conduct falling within the terms of a specific statutory provision should be prosecuted under that provision unless there was good reason for doing otherwise.

An example of public nuisance is the prosecution of South West Water in 1992 following pollution of the water supply pollution in Camelford, Cornwall during 1988. In *Wandsworth London Borough Council v Railtrack PLC* (2000) pigeon excrement from pigeons settling on a railway bridge was found to be public nuisance. Some residents living underneath powerlines experience nuisance from bird excrement.

For a prosecution to take place under public nuisance in respect of EMFs, there would need to be a measured and recorded incidence of the public being exposed to levels above the national EMF standards. e.g. in the event of an EMF emitting facility malfunctioning such as faults in underground electricity distribution cables. Whether a prosecution in public nuisance could follow, would depend very much on the extent to which national standards were exceeded, the length of time the public were exposed to the higher levels and whether the exposure was likely to have any potential adverse health implications.

4.7.3 Offences under electricity laws

For further details of the offences under the Electricity Act 1989, The Electricity at Work Regulations 1989 and The Electricity Safety, Quality and Continuity Regulations 2002, see 4.2.4.

4.8 Civil liability (including torts)

4.8.1 Introduction to civil liability

There are some laws relating to civil liability which may be relevant to EMFs/powerlines. There are other private law areas, such as common law torts, where problems with electricity transmission or EMF have potentially given rise to remedies through the civil courts. There are also contractual arrangements through permanent easements and wayleave agreements that allow powerlines over privately owned land.

Who pays for legal action?

When considering legal action, claimants have to consider how to fund their legal costs.

- **Self funding-** it is necessary to take into account the possibility that if they lose, the court may order them to pay the other side's costs.
- **Public funding-** but only available to those on a very low income and limited savings, together with limited equity in their property. It is necessary to fulfil the criteria on the merits of the case and as well as means testing⁸⁰. In some environmental cases, action is taken by a child claimant who is entitled to legal aid, whereas the parents are not.
- **Legal expenses insurance-** those with cover may be able to make a claim on their insurance policy.
- **No Win No Fee.** Some solicitors firms operate on a no win, no fee basis, but this would only apply to certain types of claims e.g. for damages not injunction.

There are no general public funds to allow a public spirited individual to test the law relating to the pollution issues surrounding powerlines and EMFs. At the moment, anyone taking a judicial review for example, risks financial consequences if the case is lost.

4.8.2 Part 1 "*Product Liability*" Consumer Protection Act 1987

Part I refers to product liability and includes electricity under s1(2): "*product*" means any goods or electricity". A claimant would have to prove he has suffered injury or harm to property due to a defect in the product but unlike an action in the tort of negligence, the claimant does not have to prove foreseeability. However s4(1)(e) provides a defence if the producer would not to have been expected to have discovered the defect due to the state of scientific and technical knowledge at the relevant time.

It is unlikely that a successful claim could be taken in relation to injury from EMFs unless the levels exceeded national standards.

4.8.3 EU Environmental Liability Directive 2004

The EU Environmental Liability Directive 2004 was required to be transposed into UK law by 30th April 2007. DEFRA is the lead Government Department dealing with the transposition into national legislation, which will be introduced late as DEFRA was still going through the consultation process in April 2007.

The main objective of the Directive is the "*polluter pays principle*" and aims to make businesses pay for environmental damage they cause to the environment not covered by existing civil liability regimes.

The Directive covers damage to:

- species and natural habitats protected under the 1992 Habitats Directive and the 1979 Wild Birds Directive;

⁸⁰ Community Legal Service Fund (legal aid) www.clsdirect.org.uk

- waters covered by the 2000 Water Framework Directive; and
- land contamination that creates a significant risk of harming human health.

Intentions of defendant

- Strict liability will apply in respect of damage to land, water and biodiversity from activities regulated by specified EU legislation;
- fault-based liability would apply in respect of biodiversity damage from any other activity.

Defences will exist for damage caused by:

- an act from compliance with a permit,
- emissions which at the time they were authorised were not considered to be harmful according to the best available scientific and technical knowledge.

Regulator will need to be appointed

Competent authorities will be responsible for enforcing the regime in the public interest, including determining remediation standards, or taking action to remediate or prevent damage and recover the costs from the operator. Individuals and others who may be directly affected by actual or possible damage, and qualified entities (non-Governmental Organisations) will have the opportunity to request action by a competent authority, and seek judicial review of the authority's action or inaction.

The Directive will not apply retrospectively and existing civil liability regimes will continue to cover traditional damage (to person or property). It is unsure at this stage whether a claim under this Directive could succeed in respect of individuals who claim to be adversely affected by EMFs/ corona ions from powerlines. Some scientists have expressed concern about the potential adverse impact EMFs have on the species⁸¹. If it could be proved that EMFs from powerlines caused damage to the habitats or species, then a successfully claim might be brought, although the Species mainly seem to experience problems with radio frequency (e.g. mobile phone, radar etc) rather than EMFs⁸².

4.8.4 Occupiers Liability

Occupiers of premises also owe a duty of care to lawful visitors and trespassers. Under Occupiers Liability Act 1957, the occupier of premises owes a duty of care to ensure that his visitors will be reasonably safe in using the premises for the purposes for which he is invited or permitted by the occupier to be there. Under the Occupiers' Liability Act 1984 a person who is not a visitor is owed a duty of care by the occupier of premises in respect of any risk of their suffering injury on

81 See information sheet published in February 2005 by WHO on "Electromagnetic fields & public health: Effects of EMF on the Environment".

www.who.int/peh-emf/publications/facts/environimpact/en/print.html

82 Alasdair Philips, Powerwatch April 2007

the premises by reason of any danger due to the state of the premises or to things done or omitted to be done on them.

It is much easier for visitors/trespassers to prove they have suffered from injuries caused by a visible physical hazard and/or one off incident rather than exposure to EMFs on premises. It is unlikely that a claim would be made under this legislation.

4.8.5 Children Act 1989 Part 3 Section 17

Campaigners against mobile phone masts have put forward the argument that the local authority has a duty to protect children who may be at risk of harm under the Children Act 1989. Part 3 s17 of the Act places a legal obligation on local authorities to protect children in their area against significant harm and or abuse or the risk of that harm or abuse. The Children Act 1989 does not require the risk of harm to be proved or to have taken place, but could be a likely or perceived risk.

4.8.6 Introduction to Torts

Tort means "civil wrongs" and refers to a body of common law (i.e. not from statutory legislation) which will allow an injured person who has suffered personal harm or harm to property to obtain a remedy from the person responsible. Civil action has been taken against operators of EMF emitting facilities under the torts of nuisance and negligence, although so far with very limited success.

In USA, claims have been taken against electricity distributors under various tort laws and the courts have held that stray voltage could be the subject of trespass or nuisance, see *Martins v. Interstate Power Co* (2002)(State of Iowa Supreme Court), and *Public Service Co. of Colorado v Van Wyk*(2001)(Supreme Court, State of Colorado).

Evidence required for Torts

As torts are civil cases, it is only necessary to prove the case on balance of probabilities. The burden of proof in criminal cases is "beyond reasonable doubt". Courts find it much easier to deal with claims for environmental harm/ pollution caused by a one off incident where the chain of causation between the incident and the harm suffered is much more apparent. Claims in respect of EMFs which cause immediate and obvious interference, such as in the *Soundstar Studio* (2004) case, as much easier to prove.

Defence of "Statutory Authority"

As well as specific defences to particular torts, there are general defences including "Statutory Authority". A defence of statutory authority can be raised by a statutory undertaker whose actions are the result of carrying out an activity expressly authorised, or implied, by the Statute, with reasonable care. Electricity distributors are statutory undertakers and this could provide a defence to an action against them in respect of powerlines.

4.8.7 Torts of (Private) Nuisance and Rylands v Fletcher

There have been various nuisance cases involving EMFs and the courts have indicated that EMFs can be an interference to the use of land.

Definition of Nuisance

Nuisance was reaffirmed by the House of Lords in *Hunter v Canary Wharf Ltd* (1997) as:

- 1) encroachment on a neighbour's land; or
- 2) direct physical injury to a neighbour's land; or
- 3) unlawful interference with a neighbour's quiet enjoyment of his land".

Rylands and Fletcher is a special type of nuisance defined in *Rylands and Fletcher* (1868): "A person who for his own purposes brings on to his land and collects and keeps there anything likely to do mischief if it escapes, must keep in it at his peril, and if he does not do so, is *prima facie* answerable for all the damage which is the natural consequence of its escape."

In *Cambridge Water Co. v Eastern Counties Leather* (1994), the Court of Appeal, stated that foreseeability of harm of the relevant type by the defendant was a prerequisite of the recovery of damages both in nuisance and under the rule in *Rylands v Fletcher*.

A successful claimant can receive damages and/or an injunction. The measure of damages based on the injury to the amenity value of the land. If a claimant sued over personal injury, it would be to the extent which the nuisance had impeded the comfortable enjoyment of his property, *Hunter v Canary Wharf Ltd* (1997). A claimant concerned over health risks, might be able to obtain an abatement or injunction.

Who can sue?

Traditionally, a person has needed a legal interest in the land to be able to sue under nuisance. The law was widened to include other householders in 1993, but the House of Lords restricted the law again in *Hunter v Canary Wharf Ltd* (1997). This may no longer be the case following the Human Rights Act 1998, although as yet untested in court. In *McKenna v British Aluminium Ltd* (2002) the court refused to strike out the claims in nuisance of those with no proprietary interest in the land, prior to the final hearing. The child claimants were relying on rights under Art. 8 of Human Rights Act 1998 and the court stated that they had an arguable case that the restrictions of the common law should be extended following HRA 1998. The case settled before the trial, so no decision made by the court.

In what circumstances might Powerlines be a nuisance ?

a) Fouling by birds roosting on powerlines. Fouling by birds roosting on a railway bridge was found to be a public nuisance, *Wandsworth London Borough Council v Railtrack PLC* (2000). It is possible, therefore, that a similar problem caused birds roosting on a powerline might be a public nuisance⁸³, a statutory nuisance⁸⁴ and/or a (private) nuisance.

b) Ice chunks falling from powerlines. In very cold weather, ice can build up on powerlines and then fall off in chunks.

c) Noise. Powerlines are noisy in damp weather and could be considered a nuisance.

⁸³ A common law criminal offence

⁸⁴ S79 Environmental Protection Act 1990 (criminal offence not to comply with an abatement notice).

d) The use of land of can be restricted by the presence of nearby pylons and/or powerlines. National Grid have issued critical safety advice for anyone who owns, occupies or uses land affected by their electricity equipment: *"Agricultural operations near overhead power lines"*, *"Leisure activities near overhead Electricity power lines"* and *"Trees and vegetation near electricity lines"*.⁸⁵ The Health and Safety Executive have issued an Information Sheet on *"Working safely near overhead power lines"*⁸⁶ which outlines steps which can reduce the risk of working near overhead power lines and points out that the Electricity At Work Regulations 1989 apply to work activities carried out near power lines. HSE have also issued a booklet *"Shock Horror: Safe working near overhead power lines in agriculture"* gives practical guidance on how to avoid danger when working near overhead power lines. It states that although aimed at those working in agriculture, many of the principles described are applicable to other work activities. Topics covered include *"safe working distances from overhead lines, assessing and reducing the risks from overhead lines, use of barriers and goalposts, operating vehicles near overhead lines, ladders, and the safe stacking of materials"*. Although HSE is concerned with work related activities, the same risks also apply to other non work activities of a similar nature (leisure or domestic activities) carried out on private land or homes.

Can action for nuisance from powerline succeed if permanent easement /wayleave in place?

If there is a permanent easement or wayleave, then there is some expectation that the powerline may place restrictions on the use of the land. In some cases, land owners believe the payment they have been offered for a compulsory wayleave does not adequately compensate for the loss of amenity of the land, which is a separate issue⁸⁷. Electricity companies pay compensation for loss of the value of the land and injurious affection. It is unsure in such circumstances, how difficult it would be for the owner/occupier then to succeed in an action for nuisance. The court would no doubt look at whether the particular restriction on the use of the land had been taken fully into account when compensation was paid for the permanent easement/ wayleave.

What if there is no permanent easement or wayleave on the land?

Some owners /occupiers have a powerline in close proximity but not actually under, on or over their land, but it may still cause a nuisance or restrict their use of the land. Restrictions placed on owners /occupiers include being unable to build or plant trees within a certain distance of the powerline⁸⁸. One example is that of a home owner⁸⁹ who is currently in dispute with the electricity transmission company, National Grid, over his boundary. National Grid maintain that the HVOL is not on his land, so it has not entered into an agreement for a permanent easement or wayleave agreement. The home owner has stated that the HVOL places restrictions on his land and he has not had any compensation. He has been given a booklet on electricity safety and when planning activities near to the powerline, has to undertake a risk assessment which he then has to submit to National Grid for scrutiny.

⁸⁵ See National Grid website: www.nationalgrid.com

⁸⁶ HSE Agriculture Information Sheet No 8 (revised). HSE website www.hse.gov.uk

⁸⁷ If owner/occupiers are not able to agree a payment, they may apply to the Lands Tribunal.

⁸⁸ Variations in distances according to type of line.

⁸⁹ Mr. Dermot Finnigan from Sale, Greater Manchester. He is currently in a boundary dispute with National Grid. See also reference to Mr. Finnigan under 4.8.11 Easements, Wayleaves and Prescription: "Boundary Disputes". He gave evidence to the Parliamentary Commission on Childhood Leukaemia and Electric and Magnetic fields on 14th June 2006. His home was featured on ITV's Tonight programme "Britain's unluckiest homes", 31st March 2007.

If this home owner is unsuccessful in his dispute over the boundary, then he will be in the same situation as other owner/occupiers with powerlines near their land. As these owners/occupiers do not have a wayleave or a permanent easement attached to the land, they could take an action in nuisance for unlawful interference of use of their land. However, the electricity company might have a defence of "*statutory authority*". The owner/occupier might also be able to claim that their human rights had been breached under Article 8 "*Right to respect for private and family life*" and Article 1 of the First Protocol Protection of property "*Every natural or legal person is entitled to the peaceful enjoyment of his possessions.....*".

Can EMFs be a nuisance?

In *Anglian Water Services Ltd v Crabshaw Robbins & Co. Ltd* (2001), the High Court implied that energy, could be considered a nuisance. The court held that "*the negligent interruption of a supply of gas by a third party is not actionable as a private nuisance. It does not involve an invasion of any substance or form of energy on to the claimant's land.*" As EMFs are considered a form of energy, it could be implied that EMFs can be capable of a nuisance.

In the Court of Appeal case of *Davis and another v Balfour Kirkpatrick* (2002), EMFs were mentioned obiter dicta (said "*by the way*", but would be persuasive precedent in future cases). The judge stated he could well understand how the principles emerging from *S v France* (1990) and *Marcic* (2002) might apply to a resident in the immediate vicinity of a transmission mast if such a resident could prove that personal injury or damage to property had been caused by electromagnetic radiation, then Article 8 may require that he has a remedy against any relevant public authority. The common law requirements of unreasonable user (in the case of nuisance) and lack of reasonable care (in the case of negligence) may have to yield in the face of European human rights law.

S v France referred to in the *Davis* case was European Court of Human Rights(ECHR) case. It did not involve EMFs but the principles about a nuisance reducing the value of property might equally apply.

At the time of the *Davis* case (2002), The claimant in the *Marcic* (2002) had succeeded in the Court of Appeal. *Marcic* sued the Water Authority in respect of the repeated flooding of his garden due to overloaded sewers. The House of Lords later reversed the decision in 2003, deciding that sewerage authorities were not liable to actions for damages in private nuisance. *Marcic* also raised issues relating to whether a private company carrying out public duties under statute came under Human Rights Legislation, See 4.9.3.

In *Network Rail Infrastructure Ltd v Morris (t/a Soundstar Studio)*(2004), although the claimant was unsuccessful, it was established that the electromagnetic interference from a rail signalling system which affected the sound of electric guitars in a recording studio could be (private) nuisance. The Court of Appeal stated that the test to establish liability in private nuisance was foreseeability that specific damage would be caused to a specific claimant.

However, if a defendant became aware of a specific type of damage caused by his actions or activities, and still continued to carry out those activities, then the court might not accept that there was lack of foreseeability of the behalf of the defendant.

Defences for nuisance include prescription (the acquisition of an easement over land by long term use) and Statutory Authority. In this instance, the electricity companies have "*statutory authority*" to distribute, supply or participate in the transmission of electricity". However, even though they have "*statutory authority*", it is not an automatic defence. In a case relating to local

residents complaint, about noise, smell and litter from a landfill site, the court held that the defence of “*statutory authority*” may fail as it is not inevitable that the nuisance would result from authorised duties, *Blackburn v ARC Ltd* (1998).

Given the previous cases, it would seem that in certain circumstances a claim in nuisance in respect of EMFs/ Corona Ions could succeed, either with damages for loss of amenity/ personal discomfort and/or an injunction.

If following the Human Rights Act 1998, the courts decide it is no longer be necessary to have a legal interest in the land to take action in nuisance, more cases relating to EMFs may be taken on behalf of child claimants. Child claimants are often more likely to qualify for public legal funding on financial grounds, compared to adult claimants.

4.8.8 Tort of Public Nuisance

As well as being a common law criminal offence, public nuisance is a Tort. For a private individual to seek damages in public nuisance, he has to have suffered over and above that suffered by the general public affected by the nuisance.

4.8.9 Tort of Negligence

Negligence is fault based tort and the remedy is damages for the losses suffered, including personal injury. Negligence does not require the claimant to have a legal interest in the land.

For an action in negligence to succeed:

- It has to be shown that the defendant owed the claimant a duty of care and
- That the duty of care was breached.
- the claimant has to prove he has the suffered harm as a direct result of breach of the defendant’s duty of care,
- the harm was foreseeable and damages claimed are not too remote and
- that the defendant does not have a valid defence.

It has been established that License holders (electricity distribution or supply) owe a common-law duty to take reasonable care to avoid acts or omissions which can be reasonably foreseen and are likely to injure persons closely and directly affected by those acts (i.e. the effects of electricity and EMFs).

Proof of chain of causation in negligence

Negligence requires foreseeability and a claimant will not succeed in action in negligence if it was not known that the time of the exposure that such harm could be done. See *Cambridge Water Co Case* (1994), which involved a claim in nuisance and negligence with regard to the pollution of a water borehole. It may be possible for future claims to succeed in relation to a particular type of harm suffered after scientific knowledge has advanced. The advancement of scientific knowledge will not apply to retrospective cases, where the person suffered harm, or had the exposure that caused the subsequent harm, prior to that time. Negligence is easier to prove in cases of one off incidents. It may be difficult to prove the causation of harm suffered, if the claimant was exposed to a number of contaminants and/or there is a delay between exposure and the harm being

suffered. One reason it may be easier to prove the cause of ill health in children is because they are likely to have been exposed to far less contaminants than adults.

Case law seems to suggest that previously claims in negligence against a License holder in respect of safety issues arising from EMFs would not succeed due of lack of evidence of the chain of causation. The test case of *Studholme v Norweb* was discontinued by the claimants in 1997, due to lack of conclusive evidence at that time as to chain of causation between exposure to EMFs by electricity (from the power line, sub station and electricity meter) and the child's fatal illness. Another similar case, *Loxton v National Grid*, was also discontinued by the claimants in 1997.

In future claims, the claimant would have 2 hurdles to overcome:

- a) Need to be able to demonstrate the chain of causation between EMFs and subsequent adverse health effects,
- b) Demonstrate to the court that the state of scientific knowledge about any potential adverse health effects and EMFs was known about at the time of the person's exposure and it was foreseeable that the person was at risk of suffering harm.

Effect of Precautionary Approach on liability in negligence

There is the question of how the court would view the adoption a precautionary approach, whether it would increase or reduce the defendant's legal liability. Given that the EU and the Government advocate a precautionary approach in the face of scientific uncertainty, it would seem logical that this would reduce liability. Conversely, a failure to adopt a precautionary approach in similar circumstances when a precautionary approach should be adopted could increase liability.

4.8.10 Tort of Trespass

An action can be taken in trespass even if no harm is caused, it is not necessary to prove the defendant was negligent. Trespass to the person or to land is a direct interference of a person's personal or proprietary rights. Remedies for trespass are damages and injunction.

There are 3 issues here:

- a) Trespass by EMFs/ corona ions emitted from a power line.
- b) Trespass by powerlines running under, on or over land where there is no permanent easement or wayleave agreement or other legal right (When a wayleave lapses, the owner/occupier can give notice to have the line removed, during the notice period electricity company has to remove the line or apply for a necessary wayleave).
- c) Trespass by powerlines where the lines the wind causes the lines to overswing/oversail.

It would be easier for a claimant to succeed in a claim for trespass where a power line is overhanging/ swinging onto the claimant's land, than a claim in respect of trespass by EMFs. A claim from airborne pollution is unlikely to succeed in trespass, unless direct interference can be shown. In circumstances where direct interference can not be proved, then a claim in nuisance could be considered instead. Defences to trespass include necessity and licence to use the land.

4.8.11 Easements, Wayleaves and Prescription

Licence holders (the electricity companies) need permission to route electric lines and their associated equipment (including transformers⁹⁰, pylons, poles, staywires) either under, on or over private land, known as a wayleave. Licence holders may try to negotiate permission with the owner/occupier, through a permanent easement or a wayleave agreement. If unable to obtain a voluntary agreement, the electricity company may apply to the Secretary of State for Trade and Industry for a compulsory purchase order or a necessary (compulsory) wayleave. Wayleaves are usually granted for a period of 15 years.

For detailed information on wayleaves, see guidance issued by the Department of Trade and Industry⁹¹.

The following situations may exist:

- a) A voluntary wayleave
- b) A compulsory (necessary) wayleave / compulsory purchase order
- c) Powerlines in place with no legal agreement (may be "implied" wayleave)
- d) Permanent easement - to allow an electricity line to be installed
- e) Permanent easement - to prevent residential development where line installed
- f) Boundary Dispute (rightful owner has to prove line under, on or over his land)
- g) Electricity line situated over the boundary from an individual's land

a) A voluntary wayleave

A wayleave is a temporary right over the land which has been negotiated by the electricity company (the licence holder) and the land owner for a financial settlement. This does not necessarily have to be in writing, it could be through custom. i.e. the electricity company sends a regular payment, which the land owner accepts (also see below, "implied" wayleave). The wayleave can be re-negotiated. A voluntary wayleave agreement is with an owner/occupier and the agreement lapses with change of owner/occupier.

If the wayleave has an expiration date, the owner/occupier can give notice to the electricity company for the line to be removed, up to 3 months before and at any time after the wayleave has expired, under p8(1)(a) and p8(2)(a) of Schedule 4 of the Electricity Act 1989. The Electricity Company has to remove the line or apply for a necessary wayleave within 3 months. Wayleave payment rates are agreed between the electricity companies and the Country Land and Business Association, the National Farmers' Union and the Farmer' Union of Wales.⁹²

It is not possible for a compulsory wayleave to be granted for a new powerline on or over a dwelling. However, if there has been a wayleave agreement in force already, then the electricity

⁹⁰ Transformers can be found in a substation or hung on poles.

⁹¹ Guidance issued by Licensing and Consents Unit, Dept. of Trade and Industry, Sept. 2002, "Application to the Secretary of State for Trade and Industry for the grant of a necessary electricity wayleave in England and Wales. Guidance for applicants and landowners and/or occupiers". www.dti.gov.uk/files/files/23024.pdf (accessed 18th June 2007).

For Northern Ireland, see "applications by Northern Ireland Electricity PLC(NIE) for the Grant of Necessary Wayleaves for the installation of new electric lines and the retention of existing lines. Guidance for NIE and Landowners and/or Occupiers" issued by the NI Dept. of Enterprise, Trade and Investment., April 2003.

⁹² For current wayleave rates see National Grid website.

company can apply for necessary (compulsory) wayleave. An owner/occupier therefore, needs to carefully consider whether they wish to grant a voluntary wayleave for a powerline on or over their dwelling, as this then opens the way for the electric company to apply for a necessary wayleave at a later date. A new owner/occupier can give notice to the electricity company under Schedule 4, paragraphs 8(1)(c) and 8(2)(c) of the Electricity Act 1989 to remove the existing line. The electricity company then has 3 months to remove the line or apply for a necessary (compulsory) wayleave. The wayleave grantor (owner/occupier) may be charged for the removal of a line.

b) A compulsory (necessary) wayleave/compulsory purchase order

The electricity company has powers to apply for a compulsory purchase order under Schedule 3 of Electricity Act 1989. For further information see the booklet on "*Compulsory Purchase and Compensation: Compulsory Purchase Procedure*"⁹³ issued in 2004 by the Office of the Deputy Prime Minister⁹⁴.

A land owner does not have to agree to the wayleave on the terms offered by the electricity company. However, under para 6(1)(a) of Sched. 4 of Electricity Act 1989, if the electricity company can demonstrate the line is necessary or expedient, it can apply for a necessary wayleave. The process in 2 fold:

(i) Under para. 6(1)(b) of Schedule 4 Electricity Act 1989, the electricity company has to give the landowner and (where the landowner is not also the occupier) the occupier a minimum period of 21 days' written notice that it requires the grant of a necessary wayleave.

(ii) If, after the specified period, the owner and/or occupier has failed to give the necessary wayleave, or has given the wayleave subject to terms and conditions to which the electricity company objects, then under para. 6(1)(3), the electricity company may apply to the Secretary of State for Trade and Industry for the grant of a necessary wayleave. Although a necessary wayleave can not be granted in respect of a new line on or over a dwelling⁹⁵.

The procedure for Wayleave hearings is laid down by the Electricity (Compulsory Wayleaves) (Hearings Procedure) Rules 1967 (the 1967 Rules). A Necessary Wayleave hearing is heard before an inspector from the DTI who will hear evidence from the electricity company and the owner/occupier. The Inspector then writes a report for the Secretary of State to enable him to make a decision whether to grant or refuse the wayleave. It is not a public enquiry, so other residents living near the proposed or existing powerline are not able to make representations to the hearing.

No public funds for owners/occupiers fees for necessary wayleave hearing

There is no provision for re-imburement of costs for the parties to a necessary wayleave hearing from central funds or for the Secretary of State to make a direction as to the award of costs against

⁹³ Booklet available online, see Dept. for Communities and Local Government website, www.communities.gov.uk

⁹⁴ ODPM is now part of the Department for Communities and Local Government.

⁹⁵ Paragraph 6(4) of Schedule 4 Electricity Act 1989 prohibits a compulsory wayleave being granted over land "covered by a dwelling" or with planning permission for it. A dwelling means a building last occupied or intended to be occupied as a private dwelling and includes any garden, yard, outhouses and appurtenances belonging to it.

one party in favour of another under the Electricity Act 1989, see *R. v Secretary of State for Trade and Industry ex parte Healaugh Farms* (QBD) 1995⁹⁶. An unsuccessful judicial review was brought by the applicant after the Secretary of State refused his request for costs of the hearing against National Grid in relation to a compulsory wayleave. The Judge explained that the installation of a new overhead line might involve the Secretary of State in two procedures under the Electricity Act 1989

- (i) application for consent under section 37, which was governed by Schedule 8,
- (ii) If owner did not agree to a voluntary wayleave, application for grant of necessary wayleave under Schedule 4, paragraph 6.

There was a clear distinction between procedures involving:

- (i) A public inquiry under Schedule 8, where costs can be awarded,
- (ii) Schedule 4 para. 6, conferring an opportunity to be heard, where costs can not be awarded.

The Judge reluctantly held that there was no power to award costs to the applicant. He stated that there was no reason why an objector to compulsory wayleave should be any worse off in relation to costs than for instance an objector to a revocation order under the Town and Planning Act 1990. Nor was there any reason why there should be power to award costs in relation to a public inquiry under Schedule 8 but not the procedure under Schedule 4. If anything, an award of costs under Schedule 4 was more pertinent as it was directly concerned with interference with private rights in the public interest.

Act prohibits necessary wayleave for new line on or over dwelling but not existing line

Although the Electricity Act 1989 prohibits a compulsory wayleave being granted on or over land "covered by a dwelling" or with planning permission for it, it does not apply to an electricity cable buried underground or where there is an existing electricity line. In *R. v Secretary of State for Trade and Industry Ex parte Wolf* (QBD) 1997, the applicant sought a judicial review of a decision by the Secretary of State to grant a compulsory (necessary) wayleave over a garden of a dwelling. When the applicant acquired the land where there had been a voluntary wayleave agreement between the electricity company, Northern electric, and the previous owner. The applicant converted the land into a garden and applied for removal of the line, at which point Northern Electric applied for and acquired a compulsory (necessary) wayleave. At the judicial review, the court held of that under Schedule 4 para. 6(4), the phrase "*to be installed over land*" clearly refers to a future event rather than a case where a grant of wayleave was sought where electricity lines already existed and the parties had come to the land with their eyes open. The court also suggested that where the electricity company needed to acquire rights for a new line over a dwelling, then it could apply for a compulsory purchase order instead.

"Land" can include "tunnel" for purposes of Wayleave rights

In *British Waterways Board v London Power Networks Plc* (Ch D) (2002), BWB refused to grant a wayleave to allow the electricity company to install and maintain electricity cables in tunnel it owned. The applicants argued that a "tunnel" was not "land" under the meaning of Schedule 4

⁹⁶ The Times Law Reports, 27th December 1995.

para. 6 of the Electricity Act 1989 and asked the Court to make a declaration as to the meaning of "land". The Court's declaration found in favour of the electricity company:

For the purposes of Schedule 4 para. 6, "land" encompassed buildings and structures,

Within the meaning of Schedule 4 para. 6(1)(a), an electric line through a tunnel had to be "on, under or over any land"

Schedule 4 para. 6(3) gave the Secretary of State discretion to grant the wayleave "subject to such terms and conditions as he thought fit". Thus he had the power to control the route of a wayleave.

Entitlement to Compensation for a Necessary Wayleave

Where a necessary wayleave is granted under Sched.4 para. 6, Electricity Act 1989, para. 7 provides for compensation:

"(1) where a wayleave is granted to a licence holder under paragraph 6 above –

(a) the occupier of the land; and

(b) where the occupier is not also the owner of the land, the owner

may recover from the licence holder compensation in respect of the grant.

(2) Where in the exercise of any right conferred by such a wayleave any damage is caused to land or to moveables, any person interested in the land or moveables may recover from the licence holder compensation in respect of that damage; and where in consequence of the exercise of such a right a person is disturbed in his enjoyment of any land or moveables he may recover from the licence holder compensation in respect of that disturbance."

Application for a Blight Notice reference

Under s150 of the Town and Country Planning Act 1990, an owner who is not satisfied with the terms of a necessary (compulsory) wayleave, can under certain specified conditions, refer the matter to the Lands Tribunal. The Tribunal determines whether the objection is well founded and makes a declaration as to the validity of the blight notice. Appeals from the Lands Tribunal are heard in the Court of Appeal.

Cases heard by Lands Tribunal and Court of Appeal

The Lands Tribunal cases include decisions on what losses can be included in the compensation claim for a wayleave as well as other points of law. Appeals from the Lands Tribunal are heard by the Court of Appeal. Few cases go no to the Court of Appeal, although one such case was heard in 2007: *Welford v EDF Energy Networks Ltd*, (Court of Appeal) 2007 (see below).

There has to be a wayleave application for Lands Tribunal to consider compensation

In *Bolton v Southern Electric Plc (Lands Tribunal) 1998*, the claimant had granted a voluntary wayleave for a powerline. Subsequently, the electricity company entered the agriculture land without permission and, installed a generator, erected a pole and overhead line for a temporary period. A permanent overhead line was also erected without any wayleave. The claimant applied for compensation for the installations under para 7(1) of Schedule 4 to the Electricity Act

1989. The Lands Tribunal held that their power to determine compensation under para 7(1) of Schedule 4 to the Electricity Act 1989 only arose where a necessary wayleave was granted by the Secretary of State. As no application had been made for a wayleave, no compensation was payable under para 7(1).

The electricity company argued that the current voluntary wayleave allowed the additional works complained of, to be carried out without the requirement of further compensation. The claimant strongly disputed this submission and the tribunal stated that "*He may well be right, but if so the proper forum for pursuing the matter is by way of litigation and not a reference to this tribunal.*" The claimant was ordered to pay the costs of the electricity company.

Lands Tribunal found visual intrusion, fears, noise and interference with quiet enjoyment could all be considered

Turris Investments Ltd v Central Electricity Generating Board (Lands Tribunal) 1981⁹⁷ involved a case where the CEGB had acquired rights for an electric line and a pylon over residential building land which was in the process of being developed. There were losses associated with the value of the land and loss of a building plot. The claimant put forward other depreciation factors:

"(a) Visual intrusion of the pylon and the cables, which were ugly and quite inappropriate in a residential area.

(b) The fears and apprehension expressed by potential purchasers, who were worried about interference with radio and television and fears of the cables coming down.

(c) The noise of the corona discharge from the cables in certain climatic conditions.

(d) The right of entry without notice to the whole of the land."

The tribunal found that "*It is therefore proper in determining the amount of compensation to take into account not only the value of the interest acquired but also the effect of the cables and the pylon on the value of the whole of the subject land and also the effect of the interference with quiet enjoyment which is posed by the possibility of access without notice by the board on to the land*"

"Turning to the question of injurious affection, it is necessary to consider the extent of the injury. First of all, and, I think, most serious, is the visual impact of the pylon and the cables. Then there is the apprehension felt by prospective purchasers of the houses on the land about television reception, and the risk of the breaking of the cables; fears that are largely unwarranted, but nonetheless real. As to noiseI would agree with the remarks made by Mr Johnson that the noise from the corona discharge could well be a nuisanceHowever it must be recognised that this noise exists and must have an affect upon the local amenities, just as the existence of the present line has an effect upon the visual amenity, and I note that the Board is offering to pay compensation in this matter.

.....Finally, there is the interference likely to arise from access by representatives of the board to the site of the pylon, and more generally on to the estate."

The tribunal allowed compensation for the whole development, not just the land under the cables: "*In my opinion, the land most seriously affected extends to a rather larger area than that immediately under the cables and I prefer to adopt 3 acres at £50,000 an acre, depreciated by 12 1/2 per cent*

97 Estates Gazette June 27 1981(1981) 258 EG 1303

to give an amount of £18,750 for injurious affection on this part of the land. The remaining land amounts to 6.60 acres to which Mr Wrigley applies a reduction of 2 1/2 per cent. Here I think he has underestimated the visual effect of the cables on the land further away from the line and I adopt 3 per cent, which comes to £9,900."

This case was in 1981, prior to the Electricity Act 1989⁹⁸ and the tribunal ordered CEGB to pay the claimant's costs. The tribunal found the most serious injurious affection "*the visual impact of the pylons and the cables*"; one can only wonder how it would have dealt with the current day fears over potential health risk from powerlines.

Cases involving claim for additional compensation for loss of business/profits

In *Macleod v National Grid Co Plc* (Lands Tribunal) 1998, a land owner failed in his attempt to gain further compensation in respect a compulsory wayleave over his land which had previously been used as agricultural research centre. The tribunal held that the value of the land had not increased owing to there being no demand for the permitted use of the land.

The Court of Appeal dismissed an appeal by the electricity company from the Lands Tribunal in *Welford, Phillips and IOD Skip Hire Ltd v EDF Energy Networks (LPN) Ltd* (Court of Appeal) 2007. The lands tribunal had found that the special losses of the two owners and an occupier (a company) were not too remote and therefore allowable. The case involved two owners who had bought the land at auction and in the process for preparing the land for a waste business discovered electricity cables which they had been unaware. Prior to finding the cables, the owners had formed a separate waste transfer business, which became the occupier of the site. After the owners gave notice for the cables to be removed, the electricity company (London Electricity plc, the predecessors of EDF) obtained a necessary wayleave. At the Lands Tribunal the owners and the business (as occupier) obtained compensation for the loss of value of their land as well additional lost profits.

The Court of Appeal found that as a general principle, compensation for the value of land at its market value would reflect a number of factors including the development potential of the land. Any future profits that the owner would have made out of the development of the land would usually be reflected in the market value of the land and he would not be entitled to seek further compensation. However in some circumstances the owner of land would be entitled to further compensation if the personal loss he suffered was not reflected in the value of the land. Where a business was in existence and an investment in that land on which the business was to be carried out and work had been commenced in connection with the business, then the business had a sufficient relationship to the land for the land to have a special value to the owner. Accordingly the tribunal had been right to conclude that a claim for loss of profits from the waste transfer business could be made.

c) Powerlines in place with no legal agreement (may be "implied" wayleave)

In some cases, the lines have been in place for a number of years and there is no legal agreement. There may have been a voluntary wayleave agreement which lapsed with changed in ownership/occupier. The current owner/occupier can ask for the line to be removed under p8(1)(c) and p8(2)(c) of Schedule 4 of Electricity Act 1989. The electricity company then has 3 months to remove the electric line or apply for a necessary wayleave. Since the Electricity Act

⁹⁸ Electricity Act 1989 does not allow for costs to be awarded to the claimant, see *R. v Secretary of State for Trade and Industry ex parte Wolf* (QBD) 1997

1989, a necessary wayleave can not be granted for a new overhead line over a dwelling⁹⁹ but can be granted for an underground cable or for an existing line¹⁰⁰.

If the line has been in place for a number of years, this also raises the question of whether the electricity company could acquire rights of an “*implied wayleave*” by implied contract¹⁰¹ or prescription.¹⁰² Dept. of Trade and Industry guidelines also refer to situations where they may be an “*implied wayleave*” and implications for giving notice for the line to be removed. In 2004 the House of Lords stated that if a right can not be lawfully granted by deed, then it cannot be acquired by prescription¹⁰³. It may be that an electricity company would not need to pursue an action to acquire rights through prescription, as it can apply for a compulsory wayleave/compulsory purchase order in such situations.

d) Permanent easement – to allow an electricity line to be installed

A permanent easement involves a one off payment in return for the right to route the power line (or pylon, or substation) in perpetuity (indefinitely). National Grid’s policy is “*to enter into easements where possible for overhead lines, and always where underground cables are installed*”¹⁰⁴. National Grid recommend owners/occupiers of land (known as the grantors) to employ suitably qualified professional land agents and valuers to negotiate claims on their behalf in relation to permanent easements.

Public concern over health risk from EMFs a more recent issue

A electricity company would not be able obtain permission from a “*necessary wayleave*” hearing for a compulsory wayleave for a new overhead electric line in respect of a dwelling¹⁰⁵. However, in many cases, people living in dwellings have a power line routed on or over their dwelling because there is a permanent easement, possibly negotiated by the developer or a previous owner.

Many permanent easements were negotiated before there was any scientific concern about EMFs from power lines and the privatisation of the electricity companies. In Trentham, Staffordshire¹⁰⁶ some powerlines, with the benefit of permanent easements and going directly over privately owned dwellings, were installed in 1942. One couple with a pylon in their garden have lived there for over 35 years, some residents may have lived there longer. At the time the owners/occupiers moved in, they obviously knew the powerlines were there and of course did spoil the view, but were unaware of any potential health hazard. They have no legal redress and yet the

99 *Ibid.*

100 See *R v Secretary Of State for Trade and Industry ex parte Wolf* (1997)

101 Through an oral agreement or by conduct

102 Prescription is the acquisition of a “right” through long term use or enjoyment of at least 20 years. There are 3 methods of acquiring an easement by prescription: a common law, by lost modern grant or under the Prescription Act 1832. For more information see the Land Registry Practice guide 52, published October 2006. www.landregistry.gov.uk.

103 *Management Ltd v Brandwood* [2004]HL

104 National Grid website <http://www.nationalgrid.com/uk/LandandDevelopment/LO/ElectricityAgreements/> accessed 13th June 2007

105 *Ibid.*

106 Vicinity of Trentham Environmental Action Group, Staffordshire.

electricity company would not be able to obtain a compulsory wayleave for a new line as this is prohibited by the Electricity Act 1989¹⁰⁷.

Can a permanent Easement be removed?

At the time the easements were placed on the land, the potential health risk from EMFs was not necessarily a perceived problem. It is unclear whether there is any way permanent easement can be removed without the consent of the electricity company.

Possible action:

(i) Apply to Electricity Company and ask for line to be removed. Owner/occupiers are unable to force the electricity company to agree to remove the burden of the power line. The electricity company is entitled to negotiate a payment for the removal of the benefit of the easement.

(ii) Judicial review: Owner/occupiers who have permanent easements for an electricity line in respect of a dwelling could ask for the Government to change the law to allow them to apply for removal of the lines. Owner/occupiers could challenge any failure to act under a judicial review on the grounds that there has been a breach of their human rights under Article 13, the Human Rights Act 1998.

(iii) Lands Tribunal¹⁰⁸ It is unclear whether permanent easements would come under the jurisdiction of the Lands Tribunal. The only possible avenue would be:

- o An application for Blight notice references under s150 of Town and Country Planning Act 1990 and
- o A application for modification or discharge of restrictive covenant under s84 of Law of Property Act 1925.

e) Permanent easement - to prevent residential development where line installed

Permanent easements are normally to grant permission for an electricity line under, on, or over a line. However, in some unusual cases, the electricity company has paid for a permanent easement to prevent an overhead line. This has happened where the electricity company has made a payment to the developer for the land to prevent homes being built, but did not want to actually own or maintain the land itself. The easement then prevents the owner/occupier from ever negotiating a financial settlement for any other overhead power line with another electricity network (either a transmission or distribution co.)

f) Boundary Dispute (rightful owner has to prove powerline under, on or over his land)

In other circumstances, no legal agreement is in place due to boundary dispute. An owner/occupier may have more difficulty establishing the boundary, where the actual boundary does not tally up exactly with land registry documents. This may be more likely to be a complication in a rural location and/or the land is on a sizable plot. There have been occasions where there the

¹⁰⁷ Paragraph 6(4) of Schedule 4 Electricity Act 1989

¹⁰⁸ Lands Tribunal, www.landtribunal.gov.uk

power line has been sited on one person's land, only for a neighbouring land owner to claim that he actually has title to the relevant strip of land. In this situation the aggrieved land owner has to first re-establish title to the land, before being able to challenge the siting of the power line or pylon. If the boundary dispute can not be effectively resolved, then in effect, the aggrieved landowner has no redress. The landowner has a number of ways of trying to agree the boundary with a neighbour. These include Alternative Dispute Resolution and applying to the Adjudicator to HM Land Registry who has been given powers, under the Land Registration Act 2002¹⁰⁹, to determine disputes that have arisen out of an application to Land Registry, where it is not possible for the parties to reach agreement.

An example of a boundary dispute is that of a home owner¹¹⁰ from the Greater Manchester area who is in dispute with the electricity transmission company, National Grid, regarding a high voltage overhead powerline installed on what he considers is his land and not land belonging to the neighbouring golf course. He is currently awaiting a court hearing for a declaration as to ownership of the disputed land. He first has to try to establish ownership of the disputed land and only if successful, can he challenge the siting of the powerline. Regardless of whether the powerline runs over his property or not, he maintains that their presence restricts the use of his land.¹¹¹

g) Electricity line situated over the boundary from an individual's land

In some cases a dwelling or other land can have an overhead power line or pylon situated immediately outside its boundary. A dwelling can be much nearer an overhead line outside its boundary, than the neighbouring dwelling on whose land the line is situated. In this situation the owner/occupier experiences all the pitfalls (loss of visual amenity, possibility of diminution of property value and exposed to potential health risk from EMFs), but with no immediate form of redress. The presence of a live electricity line on adjacent land can restrict use of an owner/occupier's use of his land, which might be actionable in tort.¹¹² Similarly, overhang/oversail by a line could be actionable in the tort of trespass.

Permanent Easements/Wayleaves may not be found on searches

Under the Electricity Act 1989, wayleaves do not have to be registered as an interest or charge over land. Sched. 4 para. 6 (6) A necessary wayleave granted under this paragraph –

(a) shall not be subject to the provisions of any enactment requiring the registration of interests in, charges over or other obligations affecting land; but

(b) shall bind any person who is at any time the owner or occupier of the land.

It is possible for a purchaser to buy land without being aware of the powerlines. If this was the result of the vendor failing to disclose details of existing wayleave on enquiry, it could be that

¹⁰⁹ See Land registry website, www.landregistry.gov.uk

¹¹⁰ Mr. Dermot Finnigan from Sale, Greater Manchester. He gave evidence to the Parliamentary Commission on Childhood Leukaemia and Electric and Magnetic fields on 14th June 2006. His home was featured on ITV's Tonight programme "Britain's unluckiest homes", 31st March 2007. See further reference under 4.7.7 Torts of (private) Nuisance and Rylands and Fletcher: "can powerlines be a nuisance?"

¹¹¹ Ibid.

¹¹² See 4.7.7 Torts of (private) Nuisance and Rylands and Fletcher: "can powerlines be a nuisance?"

the purchaser has a valid claim against the vendor. Alternatively, if the purchaser's solicitor failed to make adequate enquiries, then there might be a claim against him for negligence.

Further research into this aspect of wayleaves to be undertaken at a later date.

Are permanent easements/necessary wayleaves compliant with Human Rights Act?

The issues which seem the most likely to be raised by those with permanent easement/wayleave under, on or over their land/dwelling:

- There are existing lines on or over a dwelling which the owner/occupier is unable to have removed. Yet Sched.4, para 6. of the Electricity Act 1989 prohibits the grant of a necessary wayleave for a new electric line on or over a dwelling or land that has planning permission for a dwelling.
- Whilst those who have bought land with overhead powerlines have been aware of their presence and loss of visual amenity, they may not have been aware of the growing public concern about the potential health risk at the time they moved there. Some lines may be there by authority of a permanent easement of a necessary (compulsory) wayleave. In other cases where there is an existing line on or over a dwelling, the electricity company can be granted a necessary wayleave. Also necessary wayleaves can be granted in respect of a dwelling where the line is to be routed underground.
- A permanent easement or necessary (compulsory) wayleave, may give authority for a powerline on or over a owner/ occupier's land, but it can be in very close proximity to that owner/occupier's dwelling.
- Some residents have powerlines very near to their dwelling but on a neighbour's land. They do not have any power to challenge the siting of powerline due to a permanent easement or voluntary wayleave. Nor are they able to make representations at compulsory wayleave hearing.
- The Electricity Act 1989 does not provide for public funds to pay the costs of being represented at a compulsory wayleave hearing.

With the increasing concerns about the potential health risk from EMFs, it would seem that residents ought to be able to challenge the siting of an existing or proposed powerline in close proximity to their dwelling on health grounds. Also, it seems to be an anomaly that no public funding or award of costs to the owner/occupier is available for a necessary wayleave hearing. The failure of the Government or the electricity company (as a public authority) to address these situations begs the question as to whether the residents' human rights have been breached under the European Convention. Which rights? Possibly **Article 2, Article 6, Article 8, Article 13, the First Protocol, Article 1.** ¹¹³

¹¹³ Art. 2 Right to life, Art. 6 Right to a fair trial, Art. 8 Right to respect for private and family life, Art. 13 Everyone whose rights under the Convention are violated shall have an effective remedy before a national authority, The First Protocol, Art. 1 Protection of property.

4.9 Citizens' redress and remedies

4.9.1 Introduction to citizens' redress

Individuals or local campaign groups may resort to court action to prevent existing or potential pollution or harm, including adverse health effects. They can do this in several ways:

- a) by judicial review to challenge the decisions/actions of a public body.
- b) taking a private criminal prosecution against a polluter if the regulator fails to act.
- c) taking legal action under civil liability (e.g. nuisance, negligence, trespass- see above).

4.9.2 Access to Environmental Information

For successful legal action can be taken, it may be necessary for the claimant to access environmental information from a public body and this will be made easier by two new pieces of legislation which came into force in 2005. The Environmental Information Regulations 2004 and Freedom of Information Act 2000 both give certain rights to access information held by public authorities. Public registers are held, by the Environment Agency and local authorities, for various pollution control regimes including: the (outgoing) Integrated Pollution Control (IPC) Register, the (incoming) Pollution Prevention and Control Register, various registers relating to waste management licences, carriers and brokers of controlled waste and contaminated land.

4.9.3 Judicial review

This is a matter of public law rather than private law. An individual can challenge the actions or a decision made by a court, tribunal, Govt. or public body. A judicial review is held in the High Court. A Judge decides whether the body has acted appropriately in exercising its public duty rather than reviewing the decision itself.

The applicant first has to prove that he has "standing" (also known as "locus standi") before being allowed a full hearing. The rules on "standing" were established in *Inland Revenue v FSES Ltd* (1982) and the known merits of the case have to be taken into account when deciding whether the applicant has "sufficient interest" to proceed to a full hearing. The application is thus a 2 stage process:

1. Judge decides whether the applicant has "standing". "Standing" is where the individual (or organisation) demonstrates he has "sufficient interest" in the case to be allowed to make a challenge.
2. If the applicant is able to prove "standing", the case proceeds to a full hearing where the merits of the case are considered.

In the past there has been a restrictive approach to "standing"; with campaign groups being able to show public interest but not necessarily sufficient personal interest. This approach seems to have been relaxed in more recent cases, particularly when challenges have been made by established environmental groups. There is a short time limit for making an application and delay may now be more of a crucial factor than "standing". Judicial reviews normally have to be heard in 3 months. Continued failure to introduce protective measures might be considered within the time limit.

A judicial review can be made on the grounds that:

- A public body has acted beyond its powers
- Irrationality (decision makers have made an irrational decision based on the facts).
- Procedural impropriety - failure to comply with legislative procedures. This can include failing to take into account all the material facts.
- Rules of natural justice (No person to be condemned without a hearing, No person to be a judge in his own cause, legitimate expectation to be heard).

Judicial reviews can be taken on the grounds that the decision maker did not include the possible risk of environmental harm or potential health effects of EMFs or failed to adopt a precautionary or prudent approach where there is scientific uncertainty as to the risk of harm. A number of such judicial reviews involving EMFs from mobile phone masts have gone before the courts, but with limited success. One that succeeded in having the grant of planning permission quashed was *R. (Harman) v Winchester CC* (2002). The court held that health is a material consideration that must be taken into account when making decision on telecommunication installations. The *Duddridge* case (1995) involved an unsuccessful challenge by local residents regarding the Secretary of State's failure to adopt precautionary approach to potential health effects from EMFs emitted from powerlines. In the *Duddridge* case, the Secretary of State did actually reconsider his decision, but decided there was insufficient evidence to warrant adopting a precautionary approach.

If the Judge finds in favour of the applicant, there are a number of remedies depending on the situation:

- **Certiorari** - quashing the decision by the government or public body
- **Prohibition** - forbidding a proposed course of action by the body
- **Mandamus** - ordering something to be done
- **Declaration** - court decides and declares what the law is.
- **Injunction** - person is required to act or refrain from an act
- **Discovery** - party has to disclose documents in their possession.
- **Damages** - compensation for loss suffered.

A successful challenge by a judicial review may have the effect of delaying rather than permanently quashing a decision by a public body. E.g. The court quashes a decision on the grounds that the decision makers did not take all material consideration into account. The decision then comes before the decision makers again, who on taking the relevant material considerations into account this time, may come to the same decision as before.

4.9.4 Human Rights Act 1998 (HRA 1998)

The UK signed up to the European Court of Human Rights in 1951. The Convention was incorporated into UK law through the Human Rights Act 1998 and Acts setting up the Scottish Parliament, the Welsh and Northern Ireland Assemblies. The HRA 1998 came into force on in 2000 and incorporates into UK law, certain rights and freedoms contained in the European Convention on Human Rights. Previously, cases had to be taken before the European Court of Human Rights. The Act applies to public authorities, who must ensure their actions do not breach an individual's human rights. Public Authorities are bodies undertaking functions of a public

nature. In the case of proceedings against a public authority there is a limitation period of a year from the date of the act complained about.

The Article most likely to impact on issues relating to EMFs/powerlines in respect to planning, pollution control and environmental law are:

- Article 2 -Right to life. Art.2(1) Everyone's right to life shall be protected by law,
- Article 6 -Right to fair and public hearing by an independent and impartial tribunal,
- Article 8 -right to respect for private and family life,
- Article 13 Everyone whose rights under the Convention are violated shall have an effective remedy before a national authority.
- Article 1 of 1st protocol- Protection of property - Every natural or legal person is entitled to the peaceful enjoyment of his possessions.

In *R (Vetterlein) v Hampshire CC*(2001), a local resident who was concerned about fumes from a proposed waste incinerator, failed in his claim that the grant of planning permission for an incinerator would breach his human rights under Article 6 and Article 8 of HRA 1998.

Electricity distribution company is a public body

A privatised electricity distribution company is considered a public body for the purposes of the HRA 1998. In *James v London Electric PLC* (2004), the High Court dismissed an appeal under the HRA 1998, on the grounds that the suppliers of electricity did not perform a public function within s. 6(3)(b) of the Act and were not a public authority. Consequently, the Act did not apply to electricity suppliers. The court stated there was no statutory duty on the supplier to supply to a customer, unlike the specific statutory duty on holders of licences in respect of distribution, as in *Marcic v Thames Water*(2002), where the water co. was deemed to be a public body. In *Marcic*, the Court of Appeal decided the householder was entitled to damages on the grounds that his human rights had been breached under Article 8 and Article 1 of 1st protocol of the HRA 1998, but that any right to damages under that Act was, however, displaced by his common law right to damages under his claim of nuisance. However in *Marcic v Thames Water* (2003), the House of Lords allowed the appeal by the Water Co. thus overturning the decision of the Court of Appeal and denying damages under (private) nuisance or under the HRA 1998.

Claims under human rights legislation has met with limited success in environmental /planning cases. However, the court has ruled that electricity distributors are considered public bodies for the purpose of the HRA 1998. It is possible that future claims against an electricity distributor under civil law in respect of EMFs/powerlines may also include a claim under the Human Rights Act 1998.

4.9.5 Private criminal prosecution

Some legislation specifically provides for an individual to take criminal proceedings. e.g. s82 Environmental Protection Act 1990 allows an "aggrieved person" to take action in Statutory Nuisance if the local authority fails to act.

An individual can also take a private criminal prosecution under any criminal offence unless the specific statute restricts who can prosecute e.g. In *Coghill v Morgan* (1998) a scientist took an

unsuccessful private criminal prosecution under the Consumer Protection Act 1987 in respect of the dangers from mobile phones.

An example of where an individual is prevented from taking a private criminal prosecution is S29 (4) Electricity Act 1989, where

“No proceedings shall be instituted in England and Wales in respect of an offence under this section except by or on behalf of the Secretary of State or the Director of Public Prosecutions”.

It is possible in the future that an individual may take a private criminal prosecution for an offence which applies to EMFs/powerlines.

4.10 Conclusion and Future changes

4.10.1 Gaps in existing law

Broadly, there appear to be a number of gaps in existing law in the relation to EMFs and powerlines.

Lack of Legal Framework for EMFs

1. No general framework of legislation for EMFs.

Lack of precautionary approach in legislation

2. EMF Standards adopted by UK do not allow for precautionary approach or take other pollution factors into account.

Gaps in Health and Safety/ Electricity Legislation

3. Health and Safety Legislation and other legislation provides to protect the public from dangers from electricity but do not specifically consider potential health risk from EMFs/Corona ions.

Gaps in Planning/EIA legislation

4. In many cases, powerlines do not require planning permission.
5. LPAs do not have authority to consider a precautionary approach to EMFs/corona ions from powerlines in planning applications or preparing local development frameworks.
6. Decisions makers for planning applications do not consider the cocktail effect of EMFs/corona ions combining with other polluting emissions from industry and other activities which generate airborne pollutants (e.g. chemical/pesticide spraying).
7. Environmental Impact Assessments not required consider the cocktail effect of EMFs/corona ions combining with other polluting emissions from industry and other activities which generate airborne pollutants.

Gaps in Pollution Control legislation

8. EMFs do not come under any pollution control regime.
9. Pollution control regime permits do not consider the cocktail effect of polluting emissions combining with EMFs/ corona ions from powerlines.
10. EMFs not included in Statutory Nuisance legislation.

Gaps in Citizen's rights to obtain redress and civil remedies

11. Lack of information on EMF levels from powerlines available to the public.
12. Limited redress for residents living near existing powerlines, including those with permanent easements and wayleave agreements.
13. Limited redress for residents living near proposed powerlines.
14. No provision for costs for necessary wayleave hearing to be awarded to owner/occupier.
15. A need to extend remedies in civil law.

4.10.2 Need for framework of legislation for EMFs

Regardless of whether EMF limits are to be reduced for a precautionary approach to be adopted, there does appear to be gaps in the law relating to EMFs and powerlines. If legislation specifically provided for potential pollution from EMFs/corona ions, then the framework would be in place ready to adopt a precautionary approach. Further adjustments could then be made to reduce/increase protection according to current scientific knowledge.

4.10.3 Need for legal framework to provide for precautionary approach

1. Current deficiencies in the law

There are EMF limits to which all electricity generation, transmission and distribution licence holders in the UK have to conform. However, these limits are set at such a high level as to not allow for any precautionary approach to the general public to any potential risk from extremely low frequency electromagnetic fields.

The UK has adopted the current international standards, established by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) which do not take into account a precautionary element or any other factors. The standards do not allow for variations according to other polluting emissions in the area combining to create a toxic cocktail effect. The Government needs to decide whether to review standards to allow for this factor.

The Government has authority under various EU laws and international treaties to adopt a precautionary approach where there is scientific uncertainty as to the risk of irreversible environmental harm, including harm to human beings, see 4.3 *"The Precautionary Principle enshrined UK law and the issues relating to a precautionary approach to powerlines/EMFs"*.

2. Need to establish what precautionary measures needed

The time for a precautionary approach to be adopted is while there is still scientific uncertainty. Once conclusive proof is reached as to whether an activity can cause harm, the time for the precautionary approach has already passed. Having taken advice from independent scientific experts, the Government has to decide whether time has come for a precautionary approach to prevent potential harm to human health from electricity powerlines/EMFs/corona ions. Regardless of any decision to invoke a precautionary approach or not, the Government will have to review the science on a regular basis. EMF limits may need to be reduced further or even relaxed in the light of advancing science. E.g. Recently, in June 2007, the American National Library of Medicine and National Institutes of Health has published, ahead of print, an extract from Australian research which indicates that prolonged residence within 300 metres to high-voltage power lines, especially early in life, may increase the risk of the development of lymphoproliferative disorders (LPD) or myeloproliferative disorders (MPD) later in life.¹¹⁴

114 Lowenthal R.M., Tuck D.M., Bray I.C., Residential exposure to electric power transmission lines and risk of lymphoproliferative and myeloproliferative disorders: a case-control study. School of Medicine, University of Tasmania, Hobart, Australia. Journal of Internal Medicine 2007 Jun 2; www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=ShowDetailView&TermToSearch=17543004&ordinalpos=1&tool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum

If scientific knowledge does not provide enough evidence to support or dispel the need for a precautionary approach, the Government could consider a moratorium, on development under powerlines / new powerlines near existing development, until further scientific knowledge develops.

For international scientific knowledge to advance in this matter, it is necessary for further scientific research to be undertaken on all the relevant issues e.g. research into whether there is a correlation between EMFs (either electric or magnetic fields, or both) and some health conditions which have previously been largely overlooked e.g. headaches, miscarriage, depression, suicide and neurological illnesses/medical conditions.

3. If precautionary approach to be adopted, what scenarios need to be addressed:

- a) Existing powerlines near developed land, including residential.
- b) Future installation of powerlines near to developed and undeveloped land.
- c) Restrict development / new build near existing powerlines.
- d) Other measures that can be taken to mitigate potential overall exposure to EMFs, E.g. adopting new house wiring standards and examining ways to reduce exposure from other EMF emitting facilities, e.g. railways: overhead electricity cables, tracks and train motors, and mains electricity distribution cables feeding properties. These are not being considered in this contributing paper.

4. What options can Government take for a precautionary approach?

A precautionary approach can be adopted mainly through:

- Issuing guidelines for regulators to apply existing legislation.
- Amendments to be made to existing legislation AND/OR
- Introduction of new legislation

The areas involved will include:

- Health and Safety/Electricity legislation
- Development control (the planning system)/EIA and
- Integration of EMFs into Pollution control regimes/ Statutory Nuisance.
- Civil laws for citizen's redress and civil remedies.

4.10.4 Need for Health and Safety/ Electricity laws to protect the public from potential health risk from EMFs

Health and Safety legislation already provides for the protection of the public from the dangers of electricity, but does not specify the potential health risk from EMFs/corona ions. E.g. Electricity Safety, Quality and Continuity Regulations 2002 (as amended).

Similarly the Electricity Act 1989 imposes duties on the Secretary of State for Trade and Industry and GEMA to protect the public from the dangers of electricity but does not specify potential health risk from EMFs/Corona ions.

The Government could consider amending legislation to allow for any potential health risk for EMFs. For in-depth analysis of legislation see 4.2 "*EMF limits, Health and Safety Legislation and other legislation to protect the public from dangers from electricity*".

4.10.5 Need for Planning /Environmental Impact Assessments (EIAs) to protect public from potential health risk from EMFs.

1. Current deficiencies in the planning system

Planning laws and environmental impact assessments have the potential to prevent or reduce any potential health hazard of a proposed development. This can be done by a refusal of planning permission if the development is unacceptable, or by imposing conditions to reduce the potential harm. At the moment not all powerlines require planning permission. Even when they do, there is currently no specific provision to allow for decision makers a precautionary approach in relation to any potential health hazard from EMFs/Corona ions from powerlines. Planning applications and Environmental Impact Assessments do not consider the potential toxic cocktail effect of EMFs/Corona ions from powerlines combining with other toxic emissions.

Any new Government guidelines for planning would be given in the form of a Planning Policy Statement (PPS).

2. Options for precaution with planning laws/ EIA:

- a) Establish what precautionary measures required. Identify the extent of any planning restriction zones, where existing development will receive protection and to limit future build.
- b) Need to establish what precautionary measures required. Identify the extent of any planning restriction zones, where existing development will receive protection and to limit future build.
- c) additional measures of precaution may be required for :
 - i) Certain type of development: e.g. hospitals, medical clinics, childcare nurseries, schools, colleges, residential properties.
 - ii) Where there are other polluting factors which may increase potential health risk, e.g. need to avoid powerlines within certain distance of polluting installations (industrial operations that require Part A or Part B PPC Permits under PPC Regulations 2000. See 4.6.2.2) and other activities which generate airborne pollutants.
- d) If development is to be restricted near to existing powerlines (and vice versa) where there is greater risk, the Government may not want to allow the grant of full planning permission for land just outside the restricted zones. In which case there may be scope to allow temporary grants of planning permission, until scientific knowledge has advanced further.
- e) Remove "*permitted development rights*" for powerlines and require all future powerlines to obtain planning permission before being installed. Consider a rolling programme whereby retrospective planning permission is required for existing powerlines.
- f) Require LPAs to consider a precautionary approach to EMFs/corona ions from powerlines in planning applications or where preparing a local development framework.

- g) Require decisions makers for planning applications to consider the cocktail effect of EMFs/corona ions combining with other polluting emissions from industry and/or airborne pollutants from other activities, such as chemical/pesticide spraying.
- h) Require environmental statements for EIAs to consider the cocktail effect of EMFs/corona ions combining with other polluting emissions from industry and/or airborne pollutants from other activities, such as chemical/pesticide spraying.

3. Need to help protect those living in existing developments near existing powerlines

This is the most area difficult to tackle. The situation of those living near existing lines could be helped by:

- a) The Government introducing legislation to require existing powerlines, which are currently exempt from planning permission, to come under the planning system and existing lines requires retrospective planning permission.
- b) In cases of excessive risk, the overhead power line to be removed and replaced by underground cables. This could be in the form of a rolling programme, taken over a number of years, but with the most "at risk" properties identified and given higher priority. This approach would also help occupiers and/or owners where there is a permanent easement on their dwelling or compulsory wayleave on their land.

Electricity companies already have a rolling programme to take down and replace wires, as over a number of years the wires become corroded due to the weather. It may be that the lines could be undergrounded at a time when they are due for renewal, that way saving some of the normal maintenance costs. The programme could be similar in approach to a current scheme run by OFGEM to allocate specific sums of money to electricity companies to allow undergrounding of cables in Areas of Outstanding Natural Beauty (AONB) and National Parks on visual impact and amenity grounds. AONB units¹¹⁵ and National Parks priorities list of lines that should be put forward to the electricity company to consider for undergrounding in environmentally sensitive areas.

- c) If the licence holder was able to give a time frame when a specific overhead line was to be replaced, it would help home owners sell their property. This might take the form of a legally binding undertaking, such as a s106 agreement under Town and Country Planning Act 1990. Then a property could be advertised for sale, the vendor would be able to state that there was a HVOL within x metres, but the licence holder had given an undertaking that the line would be replaced by a certain year.
- d) For those most risk, i.e. those residents living under HVOL, they could be offered immediate help to reduce the overall EMF exposure in their home. This could take the form of rewiring of badly wired households and provision of EMF screening materials to block out the electricity fields, although not the magnetic fields. Whilst residents would no doubt still want

¹¹⁵ Each Area of Outstanding Natural Beauty (AONB) has an organisation responsible for co-ordinating efforts to conserve and enhance it. The AONB units are made up of statutory agencies, local authorities and voluntary/community organisations which have an interest in the area.

the overhead line removed, it would offer interim protective measures while a rolling programme of power line replacement took place.

4. Need to help protect the public from potential health risk from future Power line installations near to developed land

- a) To require all new powerlines to apply for planning permission. Restrictions on installation of new powerlines near existing developments
- b) To require local planning authority to consider implications of potential pollution and potential health risk from proposed powerlines as a material condition.
- c) To require local planning authority to consider the implications of the potential pollution from proposed powerlines combined with other nearby polluting emissions to increase the potential health risk.
- d) To require the environmental statement for any EIA to consider implications of potential pollution from proposed powerlines.
- e) To require EIAs to consider the implications of the potential pollution from proposed powerlines combined with other nearby polluting emissions from existing development.

5. Need to help protect the public living in future residential developments near to existing power lines from the potential health risk

- a) Place restrictions on development near to existing powerlines.
- b) To require the local planning authority to consider implications of potential pollution from powerlines as a material condition planning applications for any new build.
- c) To require the local planning authority to consider the implications of the potential pollution from existing powerlines combined with polluting emissions from proposed development or change of use of the land.
- d) To require Environmental Impact Assessments to consider implications of potential pollution from powerlines.
- e) To require EIAs to consider the implications of the potential pollution and potential health risk from existing powerlines combined with polluting emissions from proposed development.

6. Need to consider proposed powerlines on currently undeveloped land

A decision will need to be made as to what the situation will be if planning permission is to be proposed and granted for undeveloped land. If this then means that there will be restrictions on the future development of the land, will the land owner get paid compensation? This may depend on whether there is already planning permission for the site or it has already been allocated for development in the local development framework (replacing local plans). Compensation will probably need to be taken on an individual basis, taking into account all factors, including the price paid for the land.

7. Need to decide if compensation to be made to land owners?

As well as considering the position of land owners of proposed powerlines on undeveloped land (see above), other situations need to be considered as well. The Government will need to consider whether to allow compensation to land owners (of undeveloped land) where there are existing powerlines and home owners (near to existing properties) who find the value of their land is devalued due to new precautionary measures. Although some of the devaluation on residential properties has already occurred, as buyers pay less for a property near a power line¹¹⁶.

With undeveloped land, any compensation would have to be based on whether the owner had planning permission for the land or whether the land was earmarked for development in the local planning framework (replacing outgoing local plans). In the case of home owners, compensation could be given to allow for additional precautionary measures. E.g. new household wiring.

4.10.6 Need for Pollution control legislation to protect public from potential health risks from EMFs.

Amending pollution control legislation could have a significant impact on providing a legal framework for a precautionary approach to EMFs/corona ions.

Options for Pollution Control legislation

1. Amend Pollution control regime permits to consider the cocktail effect of polluting emissions combining with EMFs from powerlines.

Require regulators granting pollution control permits for industrial installations to consider the potentially toxic cocktail effect of polluting emissions combining with EMFs/Corona ions from powerlines and other EMF emitting facilities. Conditions may be attached to the permit to operate.

2. Provision could be made for EMFs to come under a pollution control regime.

Although the Health and Safety Executive has responsibility for regulating EMFs/corona ions (from powerlines or other EMF emitting facilities), EMFs/corona ions do not currently come under a pollution control regime. There is no local regulatory body that the public can approach for help and advice. The Government should consider whether emissions from powerlines, and other EMF emitting facilities ought to come under a pollution Control regime.

See 4.6 for an indepth analysis of existing pollution control regimes (IPPC, contaminated land, waste, statutory nuisance and water laws) and whether they might apply to electricity, energy, EMFs/corona ions and/or powerlines.

In most case the local authority regulates pollution control regimes, apart from the most hazardous pollution which is dealt with by the Environment Agency. Local authorities carry out some duties on behalf of the Health and Safety Commission and it could be appropriate for HSE, which is responsible for electricity legislation, to consider assigning such duties for regulating EMFs to local authority environmental health officers (EHOs).

¹¹⁶ Sims, S., Dent, P., 2005. High-voltage overhead power lines and property values: A residential study in the UK. Urban Studies Vol 42, Issue 4, April 2005, pp665-694.

3. EMFs could be declared a Statutory Nuisance

In addition to any measures to bring EMFs/corona ions under a pollution control regime, they could also be a form of statutory nuisance. The Government could declare energy/ EMFs/Corona Ions a statutory nuisance under s79(1)(h) Environmental Protection Act 1990. This would allow the local authority to take action when a local resident experiences nuisance or health problems from an EMF emitting facility. Statutory nuisance is not restricted to those who have a legal interest in the land (eg. Owners, tenants) and is not restricted to an individual's home, so a complaint could relate to a workplace.

S79 Environmental Protection Act 1990 lists a number of matters which can be a statutory nuisance if a nuisance or prejudicial to health. Although untested in law, it is possible that EMFs might be considered to be an "accumulation" or a "deposit". Alternatively, EMFs could be considered to cause "premises to be in such a state" as to create a statutory nuisance.

- (i) **EMFs could create a nuisance** if they interfered with person's use of his home or workplace. E.g. If EMFs interfered with equipment or electricity surges caused equipment to malfunction.
- (ii) **EMF levels being prejudicial to health.** An individual might have reason to believe he is experiencing high EMF levels, perhaps at home or in the workplace and worried about the effects exposure is having on his health, either current or long term. This would include those who have become electro-sensitive and suffer headaches or other symptoms when exposure to EMFs from powerlines and radio frequency.

If EMFs were declared a statutory nuisance, it would give aggrieved individuals a remedy in national law.

The individual would be able to ask the local authority to investigate and taken action if the emission levels were considered a nuisance or prejudicial to health. Once the LA has found evidence of a statutory nuisance, it will require the appropriate person responsible to abate the nuisance and if necessary can issue an abatement notice. If the local authority fails to act, s82 of the EPA 1990 allows the aggrieved individual can take action themselves by making an application to the magistrates court.

Electro-sensitive sufferers take various measures to protect themselves from electric fields, include rewiring the property, screening the home with special materials and painting walls with black carbon shielding paint. It is possible to exclude electric field but not the magnetic fields. If EMFs were declared a statutory nuisance, then if particular resident suffered adverse health from the powerlines' electric fields, the local authority might require the electricity company to provide these screening measures to help abate the nuisance.

If EMFs were declared a statutory nuisance, then of course the local authority would be able to investigate and measure the levels with specialist instrumentation. It could be that a property has raised levels due to an accumulation of a number of factors: more than one nearby high voltage powerline and/or substation and/or fault household wiring. If faulty household wiring was causing high EMF levels, then it would be up to the owner to have the wiring upgraded or replaced. In cases where the occupier is only the tenant, the landlord owner could be issued with an abatement notice, requiring the wiring to be improved.

4. Consider limiting activities generating airborne pollution near powerlines

There are currently some activities which do not come under a pollution control regime, even though they generate airborne pollutants. E.g. activities which involve the use of chemicals or pesticides. The Government may wish to consider stricter guidelines for such activities undertaken near overhead powerlines.

4.10.7 Need to provide legislation to give citizens' redress and civil remedies

At the moment the public have limited knowledge about the EMF levels from powerlines and the potential health risk. Residents have limited redress if they are living near existing or proposed powerlines.

1. Need for monitoring of EMF levels from powerlines

Many of those living or working near powerlines would like to be informed of EMF levels they are being exposed to and the appropriate health risk involved.

If residents do find out they are exposed to high levels of EMFs, their options are limited. Many of those living near powerlines, particularly high voltage overhead lines, would welcome EMF emissions being monitored by a local proactive regulatory body.

It may be that constant monitoring of EMF levels should be recorded. One off readings do not give the overall picture¹¹⁷, therefore it would be more beneficial for powerlines to be constantly monitored with records kept of the readings. That way, it could be seen whether the public are exposed to any exceptional high levels. If a person developed health problems which were believed to be have been caused by earlier exposure to high EMF levels from powerlines, examination of the archived records could confirm or dispel whether high EMF levels could be involved.

If EMFs came under a pollution control regime, then there would be provision for constant monitoring over every power line and then early warning could be flagged up if the public were being exposed to excessive levels.

It might not be too difficult for electricity companies to provide some preliminary data which would be an indication of EMF levels on all powerlines. Electricity companies already have information about the power being carried on a powerline at any one time. If this information could then be transposed into graph, and available in a public register, then it would be easy for the public to have a picture of the corresponding peaks and lows of the EMF levels. This could serve as an early warning of potentially excessive EMF levels and if necessary EMF measuring instrumentation could be set up locally to record actual levels.

2. Need to improve redress for residents living near existing powerlines, including those with permanent easements and wayleave agreements.

Those living near existing powerlines have limited options to alleviate their potential health risk, other than move away. If there is a compulsory wayleave, it will have been imposed against wishes of the land owner/occupier. A wayleave can not be imposed on or over a dwelling for a

¹¹⁷ See 3.5 of this paper

new powerline. Those with an existing powerline nearby but not under, on, or over their property, do not have the same rights to challenge the siting of the line. In any case, wayleave hearings do not take into account a precautionary approach to the potential health risk. There is no provision for the payment of costs for the landowner/occupier at a necessary wayleave hearing, either from the electricity company or public funds.

There are a number of situations where the Government could introduce legislation to enable an individual to be able to obtain redress:

a) All overhead powerlines.

These measures would help:

- Removal of "*permitted development rights*" for powerlines and consider a rolling programme for existing powerlines to obtain retrospective planning permission.
- Planning applications for powerlines to consider a precautionary approach.
- Pollution Control legislation to consider a precautionary approach to the toxic cocktail effect of EMFs combining with other polluting emissions.
- EMFs be declared a statutory nuisance.
- Constant monitoring of EMF levels from powerlines
- Allow provision of funding (either public funds or from licence holder) for those with rights to challenge permanent easements/ wayleave agreements.

b) Overhead powerline with permanent easement over property/dwelling.

These measures would help:

- All measures suggested in a) above.
- Government to consider quashing permanent easements over dwelling, which might be necessary to comply with human rights legislation, see 4.8.11, "Easements, wayleaves and prescription".
- Government to allow for permanent easements to be reviewed by an independent body and provide funding for residents to be represented.

c) Overhead powerline with voluntary wayleave over property/dwelling

These measures would help:

- All measures suggested in a) above.
- Allow owner/occupier to apply for an existing voluntary wayleave to be removed at a wayleave hearing. Wayleave hearings should be required to take the potential health risk from EMFs into account and toxic cocktail effect of EMFs combining with other polluting emissions in the area.

d) Overhead powerline with necessary wayleave over property/dwelling

These measures would help:

- All measures suggested in a) above.
- An owner/occupier can apply for an existing necessary wayleave to be removed. Necessary wayleave hearings should be required to take potential health risk from EMFs into account and toxic cocktail effect of EMFs combining with other polluting emissions in the area.
- Necessary wayleave hearing to be able to consider objections from 3rd parties who own/occupy land in close proximity to powerline.

e) Proposed power line, near but not over an individual's property or dwelling.

These measures would help:

- All measures suggested in a) above.
- Granting those with dwellings in close proximity to overhead powerlines, rights to challenge siting of existing powerlines .
- Grant those with dwellings in close proximity to a proposed voluntary wayleave, rights to make objections.
- Grant those with dwellings in close proximity to a proposed necessary wayleave, rights to be heard at a necessary wayleave hearing

f) Proposed power line, over an individual's property

All measures suggested in a) and d) above .

g) Other instances apart from overhead powerlines

Apart from overhead lines, which of course include the 400kV HVOL, there will be other circumstances, where a resident is concerned about powerlines, on or under land, which might be giving off high EMF levels. E.g. High EMF levels from underground cables feeding houses in the street.

These measures would help:

- All measures suggested in a) above.

h) Other civil liability

The Government could consider other measures, including amendments to bring EMFs under other civil legislation, such as:

- Part 1 "*Product Liability*" Consumer Protection Act 1987
- EU Environmental Liability Directive 2004
- Occupier's Liability legislation

3. Civil Remedies

Should the Government bring EMFs under a legal framework and adopt a precautionary approach to EMFs/powerlines, it ought to make it easier for a claimant to take civil action. E.g. If EMFs from a powerline can be a statutory nuisance under s79 of Environmental Protection Act 1990, then it should be easier to prove that EMFs are capable of being a (private) nuisance or actionable under another tort . See 4.8 "*Civil liability (including tort)*" for an in-depth analysis of civil action.

The Government may want to consider whether to introduce additional civil remedies for those affected by powerlines.

4.10.8 The Way forward

Even before any decision is made to introduce a precautionary approach, much can be done to prepare the groundwork by integrating EMFs into the planning system, including EIA, and pollution control regimes. Also there could be a review of the civil remedies available to those living near to powerlines in the light of the growing concern about the potential health risk from EMFs and the Human Rights Act 1998. Any review should include the funding of legal fees for owners/occupiers at necessary wayleave hearings and other legal challenges.

5. Extracts from sections 3 and 29 and schedules 3 and 4 to the Electricity Act 1989

S3 Electricity Act 1989 (as amended by s13-15 of Utilities Act 2000)

3A.-- The principal objective and general duties of the Secretary of State and the Authority.

(1) The principal objective of the Secretary of State and the Gas and Electricity Markets Authority (in this Act referred to as "the Authority") in carrying out their respective functions under this Part is to protect the interests of consumers in relation to electricity conveyed by distribution systems, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the generation, transmission, distribution or supply of electricity.

(2) The Secretary of State and the Authority shall carry out those functions in the manner which he or it considers is best calculated to further the principal objective, having regard to-

- a) the need to secure that all reasonable demands for electricity are met; and
- (b) the need to secure that licence holders are able to finance the activities which are the subject of obligations imposed by or under this Part or the Utilities Act 2000.

(3) In performing that duty, the Secretary of State or the Authority shall have regard to the interests of-

- (a) individuals who are disabled or chronically sick;
- (b) individuals of pensionable age;
- (c) individuals with low incomes; and

(d) individuals residing in rural areas;

but that is not to be taken as implying that regard may not be had to the interests of other descriptions of consumer.

(4) The Secretary of State and the Authority may, in carrying out any function under this Part, have regard to-

(a) the interests of consumers in relation to gas conveyed through pipes (within the meaning of the Gas Act 1986); and

(b) any interests of consumers in relation to-

(i) telecommunication services and telecommunication apparatus (within the meaning of the Telecommunications Act 1984); or

(ii) water services or sewerage services (within the meaning of the Water Industry Act 1991), which are affected by the carrying out of that function.

(5) Subject to subsection (2), the Secretary of State and the Authority shall carry out their respective functions under this Part in the manner which he or it considers is best calculated-

(a) to promote efficiency and economy on the part of persons authorised by licences or exemptions to transmit, distribute or supply electricity and the efficient use of electricity conveyed by distribution systems;

(b) to protect the public from dangers arising from the generation, transmission, distribution or supply of electricity; and

(c) to secure a diverse and viable long-term energy supply,

and shall, in carrying out those functions, have regard to the effect on the environment of activities connected with the generation, transmission, distribution or supply of electricity.

(6) In this section "consumers" includes both existing and future consumers.

(7) In this section and sections 3B and 3C, references to functions of the Secretary of State or the Authority under this Part include a reference to functions under the Utilities Act 2000 which relate to electricity conveyed by distribution systems.

(8) In this Part, unless the context otherwise requires-

"exemption" means an exemption granted under section 5;

"licence" means a licence under section 6 and "licence holder" shall be construed accordingly."

3B.-- Guidance on social and environmental matters.

(1) The Secretary of State shall from time to time issue guidance about the making by the Authority of a contribution towards the attainment of any social or environmental policies set out or referred to in the guidance.

(2) The Authority shall, in carrying out its functions under this Part, have regard to any guidance issued under this section.

(3) Before issuing guidance under this section the Secretary of State shall consult-

(a) the Authority;

(b) the Gas and Electricity Consumer Council (in this Act referred to as "the Council");

(c) licence holders; and

(d) such other persons as the Secretary of State considers it appropriate to consult in relation to the guidance.

(4) A draft of any guidance proposed to be issued under this section shall be laid before each House of Parliament.

(5) Guidance shall not be issued under this section until after the period of forty days beginning with-

(a) the day on which the draft is laid before each House of Parliament; or

(b) if the draft is laid before the House of Lords on one day and the House of Commons on another, the later of those two days.

(6) If, before the end of that period, either House resolves that the guidance should not be issued, the Secretary of State must not issue it.

(7) In reckoning any period of forty days for the purposes of subsection (5) or (6), no account shall be taken of any time during which-

(a) Parliament is dissolved or prorogued; or

(b) both Houses are adjourned for more than four days.

(8) The Secretary of State shall arrange for any guidance issued under this section to be published in such manner as he considers appropriate.

3C.-- Health and safety

- (1) The Secretary of State and the Authority shall consult the Health and Safety Commission about all electricity safety issues which may **be relevant to the carrying out of any of their respective functions under this Part.**
- (2) The Secretary of State may require the Authority also to consult him about electricity safety issues of particular descriptions.
- (3) The Secretary of State and the **Authority shall, in carrying out their respective functions under this Part, take into account any advice given by the Health and Safety Commission about any electricity safety issue (whether or not in response to consultation under subsection (1)).**
- (4) **The Authority shall, in carrying out its functions under this Part, take into account any advice given by the Secretary of State about any electricity safety issue (whether or not in response to consultation under subsection (2)).**
- (5) For the purposes of this section an electricity safety issue is anything concerning the generation, transmission, distribution or supply of electricity which may affect the health and safety of-
 - (a) members of the public; or
 - (b) persons employed in connection with any of those activities."

S29 Regulations relating to supply and safety (as amended by Energy Act 2004)

- (1) The Secretary of State may make such regulations as he thinks fit for the purpose of--
 - (a) securing that supplies of electricity are regular and efficient;
 - (b) protecting the public from dangers arising from the generation, transmission, distribution or supply of electricity, from the use of electricity interconnectors, from the use of electricity supplied or from the installation, maintenance or use of any electric line or electrical plant; and**
 - (c) without prejudice to the generality of paragraph (b) above, eliminating or reducing the risks of personal injury, or damage to property or interference with its use, arising as mentioned in that paragraph.**
- (1A) Regulations under this section may include provision for securing the purposes mentioned in subsection (1) in relation to the territorial sea adjacent to Great Britain or any Renewable Energy Zone.
- (2) Without prejudice to the generality of subsection (1) above, regulations under this section may--
 - (a) prohibit the distribution or transmission of electricity except by means of a system approved by the Secretary of State;
 - (b) make provision requiring notice in the prescribed form to be given to the Secretary of State, in such cases as may be specified in the regulations, of accidents and of failures in the distribution or transmission of electricity or in the use of electricity interconnectors;
 - (c) make provision as to the keeping, by persons authorised by a licence or exemption to distribute or participate in the transmission of electricity[or to participate in the operation of an electricity interconnector], of maps, plans and sections and as to their production (on payment, if so required, of a reasonable fee) for inspection or copying;

(d) make provision for relieving electricity distributors from any duty under section 16 or authorising them to disconnect any premises or distribution system in such cases as may be prescribed;

(e) make provision requiring compliance with notices given by the Secretary of State specifying action to be taken in relation to any electric line or electrical plant, or any electrical appliance under the control of a consumer, for the purpose of--

(i) preventing or ending a breach of regulations under this section; or

(ii) eliminating or reducing a risk of personal injury or damage to property or interference with its use;

(f) provide for particular requirements of the regulations to be deemed to be complied with in the case of any electric line or electrical plant complying with specified standards or requirements;

(g) provide for the granting of exemptions from any requirement of the regulations for such periods as may be determined by or under the regulations.

(3) Regulations under this section may provide that any person--

(a) who contravenes any specified provision of the regulations; or

(b) who does so in specified circumstances,

shall be liable on summary conviction to a fine not exceeding level 5 on the standard scale; but nothing in this subsection shall affect any liability of any such person to pay compensation in respect of any damage or injury which may have been caused by the contravention.

(4) No proceedings shall be instituted in England and Wales in respect of an offence under this section except by or on behalf of the Secretary of State or the Director of Public Prosecutions.

Schedule 3 Powers of Acquisition

1. – (1) Subject to paragraph 2 below, the Secretary of State may authorise a licence holder to purchase compulsorily any land required for any purpose connected with the carrying on of the activities which he is authorised by his licence to carry on.

(2) In this paragraph and paragraph 2 below "land" includes any right over land (other than, in Scotland, a right to abstract, divert and use water); and the power of the Secretary of State under this paragraph includes power to authorise the acquisition of rights over land by creating new rights as well as acquiring existing ones.

Where CPO powers are used under Schedule 3 compensation may be payable and the reference is made to section 7 of the Compulsory Purchase Act 1965

In assessing the compensation to be paid by the acquiring authority under this Act regard shall be had not only to the extent (if any) to which the value of the land over which the right is to be acquired is depreciated by the acquisition of the right but also to the damage (if any) to be sustained by the owner of the land by reason of its severance from other land of his or injuriously affecting that other land by the exercise of the powers

Schedule 4

"the necessary wayleave" means consent for the licence holder to keep the electric line installed on, under or over the land and to have access to the land for the purpose of inspecting, maintaining, adjusting, repairing, altering, replacing or removing the electric line.

7. – (1) Where a wayleave is granted to a licence holder under paragraph 6 above –

(a) the occupier of the land; and

(b) where the occupier is not also the owner of the land, the owner, may recover from the licence holder compensation in respect of the grant.

(2) Where in the exercise of any right conferred by such a wayleave any damage is caused to land or to moveables, any person interested in the land or moveables may recover from the licence holder compensation in respect of that damage; and where in consequence of the exercise of such a right a person is disturbed in his enjoyment of any land or moveables he may recover from the licence holder compensation in respect of that disturbance.

(3) Compensation under this paragraph may be recovered as a lump sum or by periodical payments or partly in one way and partly in the other.

6. Pollution Prevention and Control Act 1999

1 General purpose of section 2 and definitions

(1) The purpose of section 2 is to enable provision to be made for or in connection with—

- (a) implementing Council Directive 96/61/EC concerning integrated pollution prevention and control;
- (b) regulating, otherwise than in pursuance of that Directive, activities which are capable of causing any environmental pollution;
- (c) otherwise preventing or controlling emissions capable of causing any such pollution.

S1 (2) *In this Act –*

“activities” means activities of any nature, whether –

- a) industrial or commercial or other activities, or
- b) carried on on particular premises or otherwise,

and includes (with or without other activities) the depositing, keeping or disposal of any substance;

“environmental pollution” means pollution of the air, water or land which may give rise to any harm; and for the purposes of this definition (but without prejudice to its generality) –

- a) “pollution” includes pollution caused by noise, heat or vibrations or any other kind of release of energy, and
- b) “air” includes air within buildings and air within other natural or man-made structures above or below ground.

(3) *In the definition of “environmental pollution” in subsection*

(2) *“harm” means –*

- (a) *harm to the health of human beings or other living organisms;*
- (b) *harm to the quality of the environment, including –*
 - (i) *harm to the quality of the environment taken as a whole,*
 - (ii) *harm to the quality of the air, water or land, and*
 - (iii) *other impairment of, or interference with, the ecological systems of which any living organisms form part;*
- (c) *offence to the senses of human beings;*
- (d) *damage to property; or*
- (e) *impairment of, or interference with, amenities or other legitimate uses of the environment (expressions used in this paragraph having the same meaning as in Council Directive 96/61/EC).*

7. Copy of European Parliament's reply in June 2005 to petition by Trentham Action Group

EUROPEAN PARLIAMENT

2004



2009

Committee on Petitions

22.06.2005

NOTICE TO MEMBERS

Petition 811/2003 by Maureen Asbury (British) on behalf of the Trentham Action Group, on the health effects of overhead power lines.

1. Summary of petition

The petitioner writes that the government of the United Kingdom and of others do not comply with the warnings of independent international scientific bodies concerning the health effects of overhead power line emissions.

2. Admissibility

Declared admissible on 19/02/2004

3. Commission reply, received on 22 June 2005.

On 12 July 1999, the Council adopted a Recommendation (1999/519/EC) on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz).

The recommended maximum limits are based on the guidelines established by the International Commission on Non-Ionising Radiation Protection (ICNIRP) and endorsed by the Scientific Steering Committee of the European Commission and, based on the best scientific advice that is currently available, give a very high protection of health.

It is up to Member States to ensure that adequate health protection measures are taken so as to ensure that the general public is not exposed beyond set safety limits.

In line with the provision contained in the Recommendation the Commission is encouraging and following research activities in this area and has regular discussions on with the World Health Organisation. The Commission will review the exposure limits when that would be justified from new scientific evidence.

Since it is up to Member States to ensure, that set safety limits are complied with, the Petitioner is advised to take up the matter again with the national enforcement authorities so as to assert that in the area of Trentham, set safety limits are being complied with.

CM\572060EN.doc

PE 360.128v01-00

EN**EN**

8. Copy of European Parliament's reply in May 2007 to petition by individual from Poland ¹¹⁸

EUROPEAN PARLIAMENT

2004



2009

Committee on Petitions

7.05.2007

NOTICE TO MEMBERS

Petition 0628/2006 by Krzysztof Kuklinski (Polish) on the public health hazard caused by radiation from a high-tension overhead power line in Kamioniki in western Poland

1. Summary of petition

The petitioner expresses concern at a projected high-tension power line 70 metres above the ground in Kamioniki near Poznan in western Poland, indicating that the local populace will be exposed to radiation likely to cause various forms of cancer, including leukaemia among children. He indicates that the high-tension overhead power line in question will carry voltages of 2 x 440 kV and 2 x 220 kV and that the distances to the nearest homes will be between 30 and 370 metres. The petitioner argues that this infringes the relevant EU legislation and is accordingly seeking action by the European Parliament to ensure that the residents of Kamioniki are not exposed to dangerous and carcinogenic radiation.

2. Admissibility

Declared admissible on 19 December 2006. Information requested from the Commission under Rule 192(4).

3. Commission reply, received on 7 May 2007.

The European Commission (EC) is aware of the public concern concerning the issue of Electromagnetic Fields (EMF). The EC has for long been monitoring the potential health effects of EMF, requesting the review of scientific literature, financing research, disseminating information and contributing to the establishment of a legal framework for the protection of workers and citizens.

118 European Parliament website

[www.europarl.europa.eu/registre/commissions/peti/communication/2007/390329/PETI_CM\(2007\)390329_EN.doc](http://www.europarl.europa.eu/registre/commissions/peti/communication/2007/390329/PETI_CM(2007)390329_EN.doc)

This legal framework includes recommended limits to the exposure to EMF of the general public in the Member States (Council Recommendation 1999/519/EC¹¹⁹), established limits to the exposure of workers to EMF (Directive 2004/40/EC¹²⁰) and established limits concerning EMF originating from products placed or put into service on the EU market (Directive 1999/5/EC¹²¹). Directive 2004/40/EC obliges Member States to comply by 30 April 2008 at the latest. It aims to protect workers from risks arising from electromagnetic fields and has therefore a limited scope of application.

The Council adopted Recommendation 1999/519/EC on 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) based on the guidelines of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) as endorsed by the Scientific Steering Committee advising the European Commission on multi-disciplinary scientific issues. This text recommends that Member States, in order to provide for a high level of public health protection, should adopt a framework of basic restrictions and reference levels¹²². The recommendations on limitation of exposure have been based on established effects on human health.

As regards the application of protective measures in particular circumstances, such as those mentioned for power lines (e.g. in the vicinity of schools, hospitals, residential areas), the implementation of protection measures is a matter for national measures to address, using where appropriate the European Recommendation referred to above as a basis.

When reference levels are exceeded, it is recommended that national authorities carry out an assessment of the exposure situation and take appropriate follow-up actions, such as provision of information to the public exposed, changes in the installation or design of the source of radiation or in the way it is operated.

In this respect, the petitioner may wish to contact the competent Polish authorities to ask them to perform the necessary measurements on site and to compare them with current Polish standards and/or binding limits and also with the reference levels of Recommendation 1999/519/EC.¹²³

As recommendations (such as the above mentioned Recommendation 1999/519/EC) are not binding, the Commission does not have the power to start infringement proceedings in this case. If the petitioner wishes to pursue the matter further, it is suggested that he informs himself about the position of the Polish law and about related measures at national level.

However, the European Court of Justice has held (judgement in the case C-322/88, point 18¹²⁴) that recommendations cannot be regarded as having no legal effect. The national courts are bound to take recommendations into consideration in order to decide disputes submitted to

119 <http://europa.eu.int/eur-lex/lex/LexUriServ/LexUriServ.do?uri=CELEX:31999H0519:EN:HTML> OJ L 199, 30.7.1999

120 [http://europa.eu.int/eur-lex/lex/LexUriServ/LexUriServ.do?uri=CELEX:32004L0040R\(01\):EN:HTML](http://europa.eu.int/eur-lex/lex/LexUriServ/LexUriServ.do?uri=CELEX:32004L0040R(01):EN:HTML) OJ L 184, 24.5.2004

121 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31999L0005:EN:HTML> OJ L 91, 7.4.1999

122 Further to the issue, assessment should be based on emitted field levels and not on definition of general "safe distances". The use of such a surrogate would not be adequate because the fields depend on the voltage, on the electric current flow and on several other parameters such as the design of the masts, the clearance of the live lines, the number of systems, the dimension and number of phase lines, etc. More at <http://www.jrc.cec.eu.int/emf-net>.

123 In reply to a questionnaire from the Commission, the situation of Member States with regard to implementation of the Recommendation was summarised in a report in 2002 see:

http://ec.europa.eu/health/ph_determinants/environment/EMF/implement_rep_en.pdf.

124 <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:61988J0322:EN:HTML>

them, in particular where they cast light on the interpretation of national measures adopted in order to implement a given recommendation or where recommendations are designed to supplement binding Community provisions.

In view of the substantial quantity of new scientific information that has become available since 2001, the Commission has asked its Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR)¹²⁵ to update the opinion of the Scientific Committee on Toxicity, Ecotoxicity and the Environment (CSTEE)¹²⁶ of 30 October 2001¹²⁷ on possible health effects of electromagnetic fields, radio frequency fields and microwave radiation on human health. The recently adopted preliminary opinion¹²⁸ of SCENIHR on possible effects of Electromagnetic Fields (EMF) on human health was under public consultation during the last quarter of 2006. The SCENIHR has considered the comments and information received and has produced a final opinion that will soon be published on the Internet¹²⁹.

125 http://europa.eu.int/comm/health/ph_risk/committees/04_scenihhr/04_scenihhr_en.htm

126 http://europa.eu.int/comm/health/ph_risk/committees/sct/sct_en.htm

127 http://europa.eu.int/comm/health/ph_risk/committees/sct/documents/out128_en.pdf

128 http://ec.europa.eu/health/ph_risk/committees/04_scenihhr/docs/scenihhr_o_006.pdf

129 http://ec.europa.eu/health/ph_risk/committees/04_scenihhr/scenihhr_opinions_en.htm