

Air quality and environmental noise assessments - the impact of air and noise pollution

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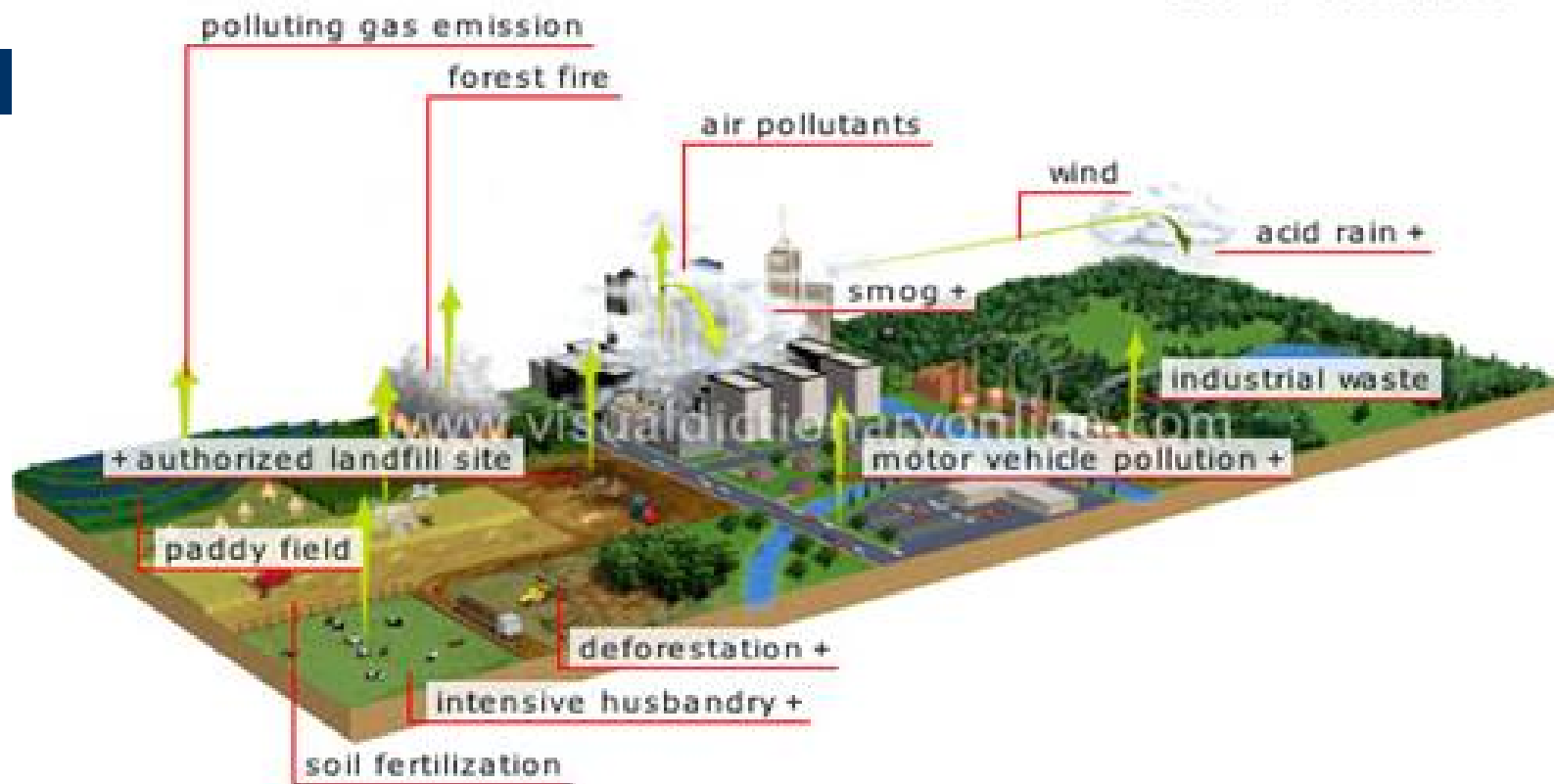
Environmental Compliance Ltd



Air Pollution

- Air is the mixture of gases that we breathe. Good air quality is essential for our health, quality of life and the environment.
- Air becomes polluted when it contains substances which can have a harmful effect on the health of people, animals and vegetation.
- Many of our everyday activities – for example driving, cooking, using the computer – consume energy and can therefore cause air pollution.

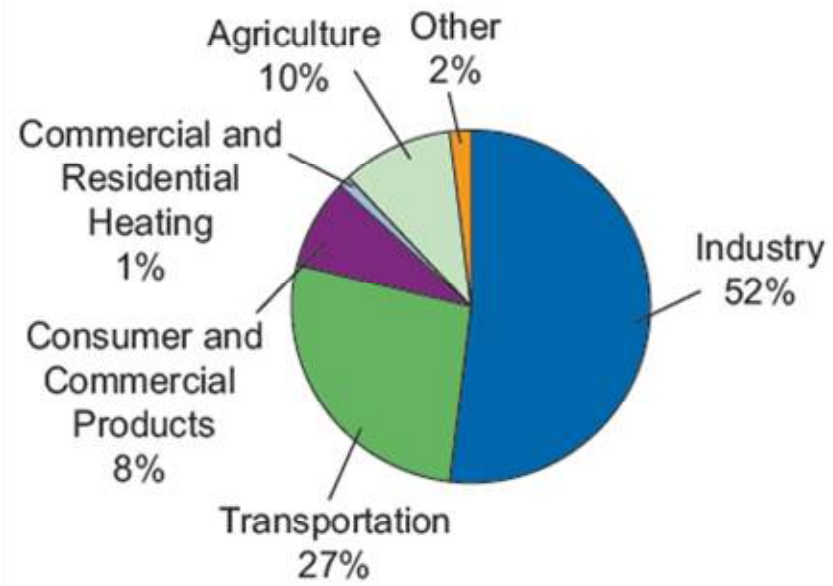
Air Pollution



Health effects of air pollutants

- **SO₂** - coughing, tightening of chest, irritation of lungs
- **NO₂** - irritation and inflammation of lungs
- **PM₁₀** - inflammation of lungs, worsening of symptoms of people with heart and lung conditions, linkage of long term exposure to coronary heart disease and lung cancer
- **CO** - prevention of normal transport of oxygen by blood, resulting in the reduction of oxygen supply to the heart
- **ozone** - pain on deep breathing, coughing, irritation and inflammation of lungs
- **benzene** - cause of cancer
- **1,3-butadiene** - cause of cancer
- **polycyclic aromatic hydrocarbons (PAHs)** - toxicity and cause of cancer
- **lead** - linkage of exposure to impaired mental function and neurological damage in children

Sources of Emissions of Air Pollutants



Industrial Air Pollution (1)

- Industrial processes are now regulated for Integrated Pollution Prevention and Control (IPPC), introduced by the Pollution Prevention and Control Act 1999. These regulations were phased in sector-by-sector up to October 2007, taking over from mechanisms established in the Environmental Protection Act 1990.
- Environmental Permitting Regulations 2010 – Covers Part A, A2 and Part B Processes

Smoke

- It is an offence for factories and trade premises to emit dark smoke from their chimneys under the Clean Air Act 1993 (or Clean Air (Northern Ireland) Order 1981), except when it is unavoidable (e.g. on lighting up). Current technology should allow efficient combustion, free of dark smoke at all times. Dark smoke emissions from open burning (bonfires) on industrial or trade premises (including demolition sites) or agricultural land is also prohibited, except in very limited circumstances. 'Dark' smoke is a shade of grey defined by law.

Grit and Dust

- The amount of grit and dust emitted from the chimney of non-domestic boilers and some furnaces is also controlled by the Clean Air Act 1993 (NI – 1981 Order). This legislation ensures that newly installed industrial plants have adequate arrestment equipment and that where emissions from a plant appear excessive a local authority can require measurements to be made of emissions to the atmosphere

Industrial Air Pollution (2)

Industrial Air Pollution

- **Environmental Permitting Regulations (2010) covers a wide range of industries, including fuel production and power generation, metal production and processing, mineral industries, chemical industries, waste disposal and recycling, food and drink processing and intensive livestock installations. All industries covered by EPR (2010) must obtain a permit to operate from the appropriate regulator. This covers all aspects of an installation's activities, including noise and vibration, heat, energy efficiency and accident prevention policy. For new installations an environmental impact assessment must also be available.**
- **Permit conditions are based on the use of Best Available Techniques (BAT), which balances the cost to the operators against benefits to the environment. Where a breach of legally binding EU air quality limit values is caused by a particular industrial installation or sector more stringent permit limits than BAT can be imposed.**
- **In England and Wales certain installations are regulated for emissions to air, water and land by the Environment Agency, with a lesser number of smaller, or less complex, installations regulated by local authorities. All such installations in Scotland and Northern Ireland are regulated by either the Scottish Environment Protection Agency or the Northern Ireland Environment Agency (as appropriate).**

Industrial Air Pollution (3)

- **A number of smaller installations are regulated for their emissions to air only. These installations include many solvent using processes, timber activities and crematoria, and are regulated by local authorities in England, Wales and Northern Ireland, and by SEPA in Scotland.**
- **Copies of applications and other documentation for all permits, subject to certain exemptions, are put in the Public Register maintained by the regulator. Most permit applications must be advertised in a local newspaper, stating where a copy of the application can be seen and the date by which any comments must be received. Various other statutory bodies will also be consulted (representing, for example, health interests, sites of special scientific or other local interests etc) . A copy of all comments is put in the Register, although members of the public may request that their comments are not recorded on the register.**

Road Transport (1)

Road transport

- **Exhaust Emissions**

The Road Vehicles (Construction and Use) Regulations govern the standards to which new motor vehicles must be manufactured, including standards for exhaust emissions. Vehicle exhaust testing has been included in the annual MOT since 1991. The Vehicle & Operator Services Agency (VOSA) carries out roadside tests on heavy goods vehicles and can ban further use of a smoking vehicle until it has been adjusted or repaired. However, only the police have the powers to stop a vehicle on the road if it is producing so much smoke as to be a hazard to other drivers.

- **Fixed Penalty Notices**

Where an AQMA has been declared, local authorities in England and Wales can apply for powers to carry out roadside emissions testing under the Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002 and the Road Traffic (Vehicle Emissions) (Fixed Penalty) (Wales) Regulations 2003. In Scotland all local authorities have these powers available to them, under the Road Traffic (Vehicle Emissions) (Fixed Penalty) (Scotland) Regulations 2003.

Road Transport (2)

- **Stationary Idling**

Fixed penalty notices of £20 can also be issued by an authorised local authority officer in England, Wales and Scotland to motorists who leave their engines running unnecessarily (e.g. waiting outside school/station), having asked them to switch them off. This rises to £40 if it is not paid within the given timeframe.

- **Leaded Fuel**

All new petrol vehicles now run on unleaded fuel and the sale of leaded petrol was banned in January 2000. For the small amount of older vehicles that will not run on unleaded fuel, special lead replacement petrol is available from some filling stations. Petrol producers and importers wishing to make leaded petrol available for use in classic and historic vehicles must apply for a permit from the Department for Transport.

The image features a green background on the left side. A white rounded rectangle is cut out from the green area, containing the text 'Noise Pollution'. A dark blue horizontal bar with rounded ends extends from the bottom of the white rectangle across the white background.

Noise Pollution

Noise Pollution

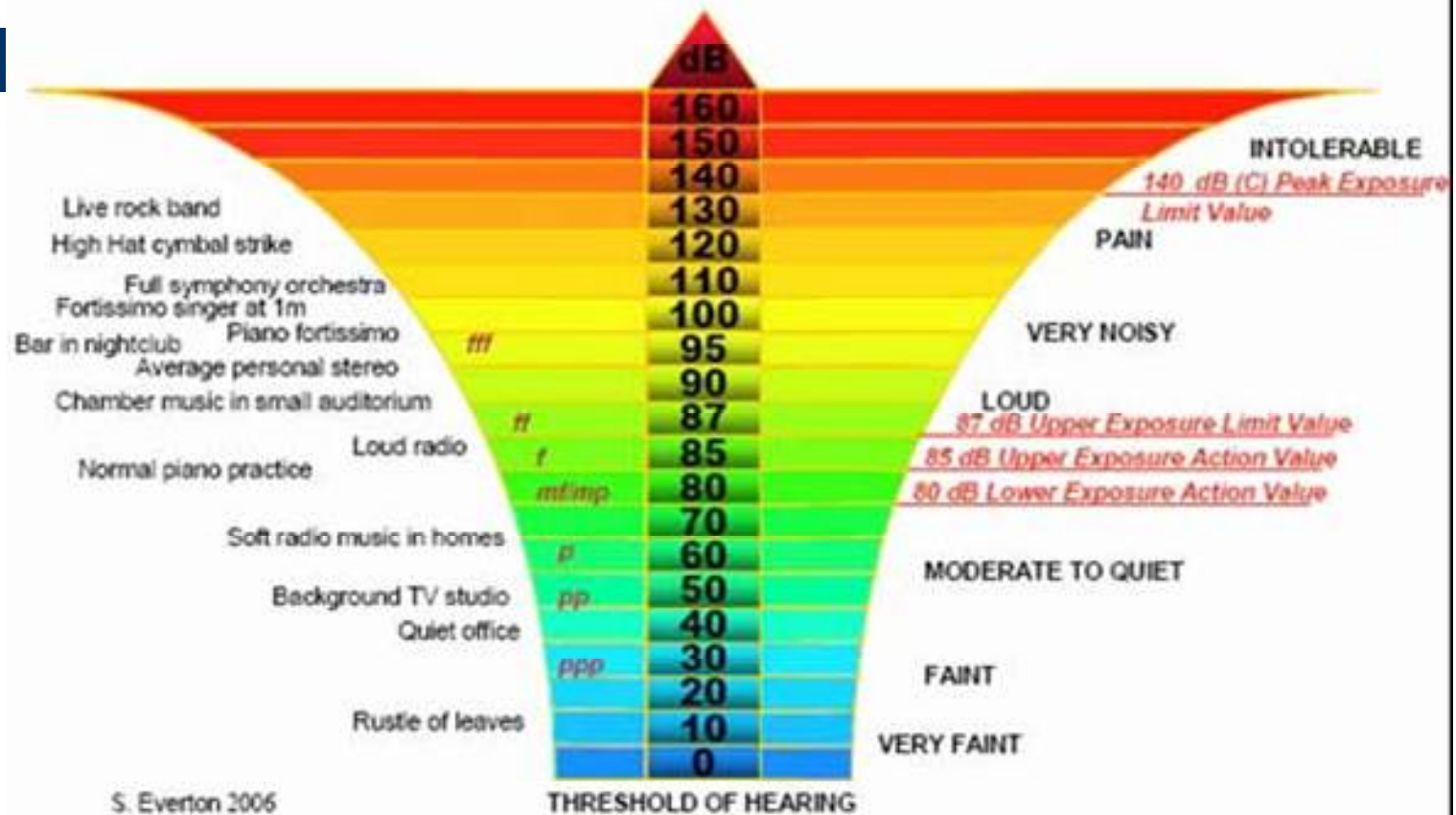
- Our experience of sound is different for all of us, what constitutes noise pollution will be, by its nature, subjective. However in general, it is deemed to be regular and prolonged or sudden exposure to any unpleasant, damaging, or irritating noise above a certain level which will harm us, wildlife, or the environment in some way
- Noise pollution may either originate from indoors (for instance the noise of machinery in a factory) or outdoors (for instance from traffic). It may either be regulated by the Environment Agency, such as in the case of industrial noise or by the Local Authority as with the case of most instances of domestic noise offences.
- The Environmental Protection Act, 1990 includes noise as a possible statutory nuisance and enables Environmental Health officers to investigate any complaints from citizens who are being bothered by excessive noise.
- To constitute a nuisance, noise levels must exceed reasonable expectation of what would be acceptable and also be deemed to demonstrably affect the quality of life of the complainant.

Noise Pollution and Health

- It has long been recognised that exposure to levels of noise exceeding safe limits can be detrimental to hearing, but this year the World Health Organisation published new findings linking exposure to excess noise (anything over 50 decibels), to high blood pressure, strokes and even heart attack.
- This new avenue of research has shown that even whilst sleeping, the body will react to loud noises, releasing stress hormones and triggering the 'fight or flight' response thus keeping the body in a perpetual level of tension.
- Other side-effects of noise pollution include feeling irritated and angry, not being able to concentrate, interrupted sleep, and hearing related conditions such as tinnitus.

1 Representative Noise Levels in dB

Some approximate examples of noise levels.



Noise and the law (1)

- The Land Compensation Act 1973 and the Noise Insulation Regulations 1975 and 1996- allows for grants for the cost of sound insulation in premises subjected to noise from new or upgraded roads or railways which result in excessive noise levels beyond stated thresholds.
- The Environment Protection Act 1990 (EPA). Part III treats noise as a statutory nuisance. By virtue of the Noise and Statutory Nuisance Act 1993, Part III extends to noise nuisance from vehicles (e.g. car alarms but not traffic noise), machinery and other equipment such as loudspeakers, in the street
- The Control of Pollution Act 1974 (COPA). Part III provides legislative controls for construction site noise and certain levels of street noise.
- The Noise and Statutory Nuisance Act 1993. Contains amendments to the EPA and COPA and also deals with noise from vehicles, burglar alarms and street equipment.
- The Noise Act 1996- This criminalises certain forms of night time noise and gives local councils power to confiscate certain kinds of noise-making equipment.
- The Housing Act 1996 and the Crime and disorder Act 1998- Both Acts tackle anti-social behaviour including excessive noise.

Noise and the law (2)

- The Pollution Prevention and Control Act 1999- provides local authorities and the Environment Agency with powers to control emissions from industrial processes including noise emissions.
- The Building Regulations 2000- regulates building development by requiring that construction meets certain standards, including sound insulation standards
- The Criminal Justice and Police Act 2001-amends the Licensing Act of 1964 and gives the police summary powers to close a licensed premises that is causing excessive noise.
- Anti Social Behaviour Act 2003- provides powers to close down noisy premises if they cause a public nuisance.
- Firework Act 2003 and Fireworks Regulations 2004-provides controls on the use of fireworks, especially in public places. These include an outright ban on the use of powerful fireworks by unauthorised persons and on-the-spot fines for anyone using fireworks during anti-social hours (11pm to 7am). Under-18s are also banned from possessing or using most fireworks in public places or at anti-social hours.
- The Clean Neighbourhoods and Environment Act 2005 (CNEA) amends the Noise Act 1996 and grants local authorities with powers to investigate complaints from residents about excessive night noise coming from licensed or residential permits

Company Responsibilities (1)

- You have a legal duty to protect the public from noise as well as those working for you (CONAWR 2005).
- Under **environmental** legislation, you could be found guilty of causing a **statutory nuisance** if noise from your business affects a member of the public's:

Health

Enjoyment of their land or property

- If an environmental health officer from your local authority receives a complaint about your business you could be served with an **abatement notice** requiring you to stop or limit the noise.
- You could also face costly **legal action** from the individuals affected if you don't take steps to stop or limit the noise.
- If you have an environmental permit, your permit may have conditions that control noise. You must comply with all of the conditions of your permit.

Company Responsibilities (2)

- To guard against causing a statutory nuisance, **talk** to your business' neighbours and establish the likelihood of their being affected by noise generated by your business.
- Consider practical steps you could take to avoid problems. For example, you could:
- ***minimise noisy activities - such as deliveries –***
- ***move noisy activities away from boundaries with neighbours***
- ***put up noise barriers***
- ***keep doors and windows closed where possible***
- ***give advance warning if noisy activities are to take place***
- ***maintain burglar alarms to prevent them going off unnecessarily***