AIR AND NOISE POLLUTION

Air pollution harms our health and our environment. It mainly stems from industry, transport, energy production and agriculture. The EU air quality strategy pursues full compliance with existing air quality legislation by 2020 and sets long-term objectives for 2030. The Environmental Noise Directive helps to identify noise levels within the EU and to take the necessary measures to bring them down to acceptable levels. Separate legislation regulates noise emission from specific sources.

LEGAL BASIS

Articles 191 to 193 of the Treaty on the Functioning of the European Union (TFEU).

GENERAL BACKGROUND

Air pollution can cause cardiovascular and respiratory diseases as well as cancer, and is the leading environmental cause of premature death in the EU. Certain substances, such as arsenic, cadmium, nickel and polycyclic aromatic hydrocarbons, are human genotoxic carcinogens, and there is no identifiable threshold below which they do not pose a risk. Air pollution also negatively impacts on the quality of water and soil and damages ecosystems through eutrophication (excess nitrogen pollution) and acid rain. Agriculture and forests are therefore affected, as well as material and buildings. Air pollution has many sources, but mainly stems from industry, transport, energy production and agriculture. While air pollution in Europe has generally decreased in recent decades, the Union’s long-term objective, namely ‘to achieve levels of air quality that do not have significant negative impacts on human health and the environment’, is still at risk. In urban areas (‘hotspots’), especially, where the majority of Europeans live, air quality standards are often contravened. The most problematic pollutants today are fine particles, nitrogen oxides and ground-level ozone.

Environmental noise levels are rising in urban areas, mainly as a result of increasing traffic volumes and intensifying industrial and recreational activities. It is estimated that around 20% of the population of the EU are subjected to noise levels that are considered unacceptable. This can affect the quality of life and lead to significant levels of stress, sleep disturbance and adverse health effects such as cardiovascular problems. Noise also has an impact on wildlife.

ACHIEVEMENTS IN COMBATING AIR POLLUTION

Air quality in Europe has much improved since the EU first started to tackle this issue in the 1970s. Substances such as sulphur dioxide ($SO_2$), carbon monoxide (CO), benzene ($C_6H_6$) and lead (Pb) have been significantly reduced since then. The EU has three different legal mechanisms to manage air pollution: defining general air quality standards for ambient concentrations of air pollutants; setting national limits on total pollutant emissions; and designing source-specific legislation, e.g. to control industrial emissions or set standards for...
vehicle emissions, energy efficiency or fuel quality. This legislation is complemented by strategies and measures to promote environmental protection and its integration into other sectors.

A. Ambient air quality

On the basis of the objectives of the 2005 Thematic Strategy on Air Pollution (to reduce fine particles by 75% and ground-level ozone by 60%, and to reduce the threat to the natural environment from both acidification and eutrophication by 55% — all by 2020 as from 2000 levels), a revised Directive on ambient air quality was adopted in June 2008, merging most of the existing legislation in this field. Only the fourth ‘daughter directive’ of the earlier Air Quality Framework Directive is currently still in place, setting target values (less strict than limit values) for arsenic, cadmium, nickel and polycyclic aromatic hydrocarbons.

Directive 2008/50/EC on ambient air quality aims at reducing air pollution to levels that minimise harmful effects on human health or the environment. To that end, it lays down measures to define and establish ambient air quality objectives (i.e. limits not to be exceeded anywhere in the EU) in relation to the main air pollutants (sulphur dioxide, nitrogen dioxide, oxides of nitrogen, (fine) particulate matter, lead, benzene, carbon monoxide and ozone). Member States are required to define zones and agglomerations in order to assess and manage ambient air quality, to monitor long-term trends and to make the information available to the public. Where the air quality is good it must be maintained; where limit values are exceeded, action has to be taken.

At the end of 2013, the European Commission launched the Clean Air Programme for Europe with two key objectives, namely compliance with existing legislation until 2020 and new air quality objectives for the period up to 2030. The main legislative instrument to achieve these objectives is the revised National Emission Ceilings Directive, which sets stricter national emission ceilings for the five key pollutants — sulphur dioxide, nitrogen oxides, non-methane volatile organic compounds, ammonia and fine particulate matter — in order to reduce their harmful effects on the environment and cut their health impacts by half compared with 2005. It requires Member States to draw up national air pollution control programmes. The Directive also transposes the reduction commitments for 2020 taken by the EU and its Member States under the revised Gothenburg Protocol to the United Nations Economic Commission for Europe (UNECE) Convention on long-range transboundary air pollution to abate acidification, eutrophication and ground-level ozone. A new directive to cut air pollution from medium combustion plants, such as applications used for electricity generation or domestic heating, was also adopted as part of the programme.

B. Road transport

Several directives have been adopted to limit pollution from road transport by setting emission performance standards for different categories of vehicles, such as cars, light commercial vehicles, lorries, buses and motorcycles, and by regulating the quality of fuel. As of September 2014 the emission standard Euro 6 for cars and light vans applies to all new car models (type approval) and as of a year later to their registration and sale. It sets emission limits for a number of air pollutants, in particular nitrogen oxides and particulate matter. Member States are required to refuse the type approval, registration, sale and introduction of vehicles (and their replacement pollution control devices) that do not comply with these limits. The standard also includes a review clause on the driving cycle and the test procedure, to ensure that the testing takes place in real-world driving conditions. Regulation (EC) No 715/2007 furthermore lays down rules for in-service conformity, durability of pollution control devices, on-board diagnostic (OBD) systems and measurement of fuel consumption, and regulates access
to vehicle repair and maintenance information for independent operators. The same applies to Regulation (EC) No 595/2009, which fixes emission limit values for heavy-duty vehicles (buses and trucks, Euro VI as of January 2013). Both regulations are currently undergoing revision and will be amended by a new regulation on approval and market surveillance of motor vehicles.

To further reduce pollution from car emissions, the EU has introduced a ban on the marketing of leaded petrol and the obligation to make sulphur-free fuels available within the Union.

C. Other transport emissions

To reduce air pollution from ships — said to be responsible for 50 000 premature deaths annually — Directive 2012/33/EU limits the sulphur content of marine bunker fuels in European seas. The general sulphur limit will fall from 3.5% to 0.5% by 2020 in line with limits agreed by the International Maritime Organisation. In certain designated ‘Sulphur Emission Control Areas’ (SECAs), such as the Baltic Sea, the English Channel and the North Sea, an even stricter standard of 0.1% applies as of 2015. Further emission performance standards have been set for non-road mobile machinery, such as excavators, bulldozers and chainsaws, as well as for agricultural and forestry tractors and recreational craft.

D. Emissions from industry

The Industrial Emissions Directive covers highly polluting industrial activities that account for a significant share of pollution in Europe. It consolidates and merges all relevant directives (on waste incineration, volatile organic compounds, large combustion plants, integrated pollution prevention and control, etc.) into one coherent legislative instrument, with the aim of facilitating its implementation and minimising pollution from various industrial sources. It lays down the obligations to be met by all industrial installations, contains a list of measures for the prevention of water, air and soil pollution, and provides a basis for drawing up operating licences or permits for industrial installations. Using an integrated approach, it takes into account the total environmental performance of a plant, including the use of raw materials or energy efficiency. The concept of ‘best available techniques’ (BATs) plays a central role, as do flexibility, environmental inspections and public participation.

ACHIEVEMENTS REGARDING NOISE POLLUTION

Environmental noise: The Framework Directive on environmental noise aims to reduce exposure to environmental noise by harmonising noise indicators and assessment methods, gathering noise exposure information in the form of ‘noise maps’, and making this information available to the public. On this basis the Member States are required to draw up action plans to address noise problems. Noise maps and action plans need to be reviewed at least every five years.

Road traffic: The regulation on the sound level of motor vehicles introduces a new test method for measuring noise emissions, lowers the valid noise limit values and includes additional sound emission provisions in the type-approval procedure. Other regulations set noise limits for mopeds and motorcycles. Complementary to this, the testing and limiting of tyre rolling noise levels and their gradual reduction are regulated.

Air traffic: EU aviation noise rules in line with the ICAO’s ‘balanced approach’ have applied since June 2016 for airports with more than 50 000 civil aircraft movements per year. This approach consists of four principal elements designed to identify the most cost-efficient way of tackling aircraft noise at each individual airport: reducing noise levels at source through deployment of modern aircraft, managing the land around airports in a sustainable way, adapting
operational procedures to reduce the noise impact on the ground, and, if required, introducing operating restrictions such as bans on night flights.

Rail traffic: In the context of the railway interoperability directive, a technical specification for interoperability (TSI) on noise sets maximum levels of noise produced by new (conventional) railway vehicles. The noise charging regulation incentivises the retrofitting of freight wagons with low-noise composite brake blocks.

Other noise sources: Large industrial and agricultural installations covered by the Industrial Emissions Directive are able to receive permits following the use of best available techniques (BATs) as references. Noise emitted by construction plants (e.g. noise from excavators, loaders, earth-moving machines and tower cranes), as well as from recreational craft or equipment for outdoor use, is also regulated.

ROLE OF THE EUROPEAN PARLIAMENT

Parliament has played a decisive role in the formulation of a progressive environmental policy to combat air and noise pollution. For instance, MEPs voted to drastically lower the harmful sulphur content of marine fuels from 3.5% to 0.5% by 2020. MEPs successfully fought attempts to postpone this deadline by five years. At the instigation of Parliament, the Commission has been forced to consider extending the stricter SECA limits to all EU territorial waters. As regards the revision of the NEC Directive, Parliament called for more ambitious national ceilings to be met by 2030 and argued for binding targets for 2025 to ensure that Member States were on track to meet their 2030 targets. On a more general basis, MEPs urged the EU to identify and respond to source control legislation that is failing to work, as in the case of the discrepancy shown between real world emissions and NO\textsubscript{x} test emissions from Euro 6 diesel cars. In the wake of the discovery in the US that the Volkswagen group used test-cheating software to drive down NO\textsubscript{x} emissions, Parliament set up a temporary committee of inquiry (EMIS) to investigate the matter.

Concerning noise pollution, Parliament has repeatedly stressed the need for further cuts in limit values and for improved measurement procedures with regard to environmental noise. It has called for the establishment of EU values for noise around airports and also for the extension of noise reduction measures to cover military subsonic jet aircraft. Parliament has succeeded in protecting the power of local authorities to decide on noise-related measures at airports, including possible bans on night flying. It has furthermore approved the phasing-in of new noise limits for cars with the aim of reducing the limit to 68 decibels (db) from the original 74 db. MEPs have also successfully campaigned for the introduction of labels to inform consumers about noise levels, on lines similar to those of the existing schemes for fuel efficiency, tyre noise and CO\textsubscript{2} emissions.

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11/2017