

# The Environmental Noise Directive at a turning point

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## Summary

The burden of disease from environmental noise in Europe was recently estimated at 1.6 million healthy life years lost every year in urban areas in Western Europe. Traffic noise has been ranked second among the selected environmental stressors evaluated in terms of their public health impact. Further, the trend is that noise exposure is increasing in Europe compared to other stressors (e.g. exposure to second hand smoke, dioxins and benzene), which are declining. Noise pollution affects human health and well-being with increasing expenditures due to medical treatment and reduced productivity at work. This is translated into a societal cost which was recently estimated to 40 billion €/year in the EU (0.4% EU GDP).

In its recently adopted Environment Action Programme to 2020, the EU has envisaged to significantly decrease noise pollution within its borders, moving closer to levels recommended by the World Health Organisation, by 2020. One of the main legislative tools in achieving this aim is the Environmental Noise Directive (2002/49/EC) (END), an overarching directive aimed at achieving a common approach towards environmental noise in the EU. The European Commission is currently undertaking an evaluation of the END, and trying to assess its effectiveness and efficiency, including benefits, costs and hurdles to the implementation of an effective EU noise policy. This paper gives an overview of recent developments with regards to the END and sets the scene for a discussion on the potential developments in the years to come.

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## 1. Introduction

The health impact of environmental noise is of increasing concern amongst the European citizens, however recent evidence shows that its reduction is still by far below the levels envisioned by European Union (EU) policy makers and legislators. In its recently adopted Environment Action Programme to 2020, 'Living well, within the limits of our planet' (7<sup>th</sup> EAP), the EU has committed itself to significantly decrease noise pollution within its borders, moving closer to levels recommended by the World Health Organisation (WHO), by 2020. One of the main legislative tools in achieving this aim is the Environmental Noise Directive (2002/49/EC) (END), an overarching directive aimed at achieving a common approach towards environmental noise in the EU. The Directive, which was adopted more than 10 years ago, has recently been further developed by agreeing common EU methods for noise assessment (revision of Annex II), which is currently followed by work on developing methods to assess the effects of noise on populations by means of dose-effect relations (revision of Annex III). At the same time, the Directive is undergoing a retrospective evaluation under the European Commission's Regulatory Fitness and Performance programme (REFIT). This paper aims to give an overview of these recent developments with regards to the END as well as set the scene for a discussion on the potential developments in the years to come.

## 2. The environmental noise problem in the EU

The European Environment Agency's recently published report 'Noise in Europe 2014' demonstrates that noise pollution constitutes a major environmental health problem in Europe. The report shows that road traffic is the most dominant source of environmental noise, with an estimated 125 million people affected by noise levels greater than 55 decibels (dB) Lden (day-evening-night level), and confirming its status as the second most dangerous environmental hazard to people's health, immediately after air pollution.

At the same time, epidemiological evidence indicates that those chronically exposed to high levels of environmental noise have an increased

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risk of cardiovascular diseases such as myocardial infarction. Noise pollution affects human health and well-being. The health effects caused by exposure to excessive noise also impact the European economies. They put an entirely avoidable burden on health care systems which have limited resources, while at the same time generating the loss of productivity of workers whose sleep is disturbed or health affected. The burden of disease from environmental noise in Europe based on partial data was estimated by WHO-JRC and accounts for at least 1.6 million healthy life years lost every year in urban areas in Western Europe. In addition, it is estimated that environmental noise causes 30 to 50 thousand cases of premature death in Europe each year. This is translated into a societal cost which has been estimated to 40 billion euro per year in the EU (0.4% of the EU GDP).

Moreover, a full assessment is hindered by the fact that estimates on exposure to noise reported by countries are not complete, with as little as 44% of the expected amount of data being delivered in the latest reporting round of the END. Therefore the figures quoted above can be considered generally underestimated and will need to be revised as more complete data becomes available.

## 3. EU environmental noise policy and regulatory framework

In its 7<sup>th</sup> EAP, the European Union committed to significantly decrease noise pollution in the Union, moving closer to levels recommended by the WHO, by 2020. The document noted that this would require, in particular, implementing an updated Union noise policy aligned with the latest scientific knowledge, and measures to reduce noise at source, and including improvements in city design. In this context, the European Commission, the Member States' public authorities and all the different stakeholders have a role to play.

The primary EU legislative tool for the assessment and management of environmental noise is the END. This Directive, introduced more than 10 years ago, aims to achieve a common European approach to avoid, prevent or reduce the effects of exposure to environmental noise harmful for health, which includes annoyance. It achieves this by requiring EU Member States to conduct a process of noise mapping and preparing action plans for noise management for all major roads,

railways, airports and large agglomerations in 5-year cycles. The Directive does not set any limit values, nor does it prescribe measures to be included in the action plans. Its primary strategy for effecting improvement in noise pollution is therefore to require public authorities in Member States to collect information on noise, share that information with the public, and engage in a discussion with the public on whether and how to act on that information. The principle strategies that the Environmental Noise Directive uses are raising awareness and ensuring citizens are involved in decision-making.

Moreover, and in line with the recommendation in the 7<sup>th</sup> EAP, the END outputs provide a basis to develop EU measures to reduce noise at source. In terms of noise reduction at source, the most significant and cost-effective, long-term steps can only be taken at EU-level, as the noise sources (e.g. vehicles, airports, railway tracks) are regulated as part of the EU internal market. A number of other European legislative acts therefore address noise at source. Among these, most recently updated are the Regulation on the establishment of rules and procedures with regard to the introduction of noise-related operating restrictions at Union airports within a Balanced Approach (EU/598/2014) and the Regulation on the sound level of motor vehicles and of replacement silencing systems (EU/540/2014), both adopted on 16 April 2014. Legislation on source is complementary to the END as reducing the contribution to noise at source reduces the exposure at the receiving end.

#### **4. Revision of END annexes**

At the time of the adoption of the END, the legislators included in the Directive an obligation for the European Commission to adapt its Annexes I, II and III to technical and scientific progress, notably to establish common noise assessment methods (Annex II) and methods for assessing harmful effects of noise by means of dose-effect relations (Annex III). The work on the former has recently been finalised, while the work on the latter is about to start.

In the period since the adoption of the END, the differing use of approaches to noise mapping has been one of the key implementation challenges recognised. The lack of comparable and common assessment methods has caused significant inconsistencies in exposure estimates, between

different countries, within a single country and across the two main reporting rounds to date. A major step forward in this respect came about with the development of common noise assessment methods in Europe, the methodological framework under the name of CNOSSOS-EU. The CNOSSOS-EU will become part of the EU legislative framework in the form of a revised Annex II of the END. After having received a positive opinion from the Noise Regulatory Committee (consisting of the EU Member States under the presidency of the European Commission) in July 2014, the revised Annex is currently undergoing the scrutiny procedure by the European Parliament and Council, and it is expected that it will be published in the Official Journal of the EU in the coming months. The new methodologies will ensure that noise in each Member State is assessed in a harmonised way, thus providing a consistent and reliable picture of the acoustic situation in the EU. The use of CNOSSOS-EU will be mandatory for all Member States after 31 December 2018, however Member States will have the possibility to transpose and start using the revised Annex II even before this date.

Furthermore, the END obliges the Commission to establish methods for assessing the harmful effects of noise by means of dose-effect relations. This will be done through the revision of Annex III of the Directive. The Annex specifies that dose-effect relations should be used to assess the effect of noise on populations. They should concern, in particular, the relation between annoyance and  $L_{den}$  for road, rail and air traffic noise, and for industrial noise, and the relation between sleep disturbance and  $L_{night}$  for road, rail and air traffic noise, and for industrial noise. Furthermore, if necessary, specific dose-effect relations could be presented for special situations, such as dwellings with special insulation against noise, different climates or vulnerable groups of the population. The Commission has started the preliminary work on the development of a revised Annex III by seeking the views of Member States through the Noise Regulatory Committee, and will proceed with the development of the first draft in the course of 2015. In this process, close attention will be paid to the work being undertaken by the World Health Organisation (WHO) Regional Office for Europe, which is currently in the process of producing revised Environmental Noise Guidelines for the European Region. These are expected to be published in early 2016.

## 5. REFIT of the END

In parallel with the work on fine-tuning the tools of the Environmental Noise Directive, the Directive is undergoing an evaluation in the context of the European Commission's Regulatory Fitness and Performance programme (REFIT). In view of the Commission's long-term commitment to a simple, clear, stable and predictable regulatory framework for businesses, workers and citizens, the REFIT programme aims to cut red tape, remove regulatory burdens, simplify and improve the design and quality of legislation so that the policy objectives are achieved and the benefits of EU legislation are enjoyed at lowest cost and with a minimum of administrative burden. Environmental legislation is at the centre of the exercise, with 12 REFIT initiatives, which includes the END.

The evaluation of the END, which is retrospective, will address questions such as whether the objectives of the END have been met in the most efficient and effective manner, whether the Directive is coherent with other EU legislation, whether it continues to match current needs, and whether it provides additional value as opposed to national measures alone. The evaluation will also look closely at the benefits, costs and burdens of the Directive. The process will include a thorough consultation of stakeholders through questionnaires, interviews and a dedicated workshop. Based on the work of the contractor, the European Commission will draft an evaluation report, which will also include a report on the implementation of the Directive.

The REFIT report will build on the Commission's first report on the implementation of the END from 2011, which also addressed implementation difficulties. Among the main implementation problems identified at that time were: delays in implementation by the Member States, the non-enforcement of noise limit values, the poor quality of strategic noise maps and action plans, an inconsistent use of approaches in noise mapping, divergent approaches to identify quiet areas, missing or unclear provisions of the Directive and a non-appropriate communication and involvement of the public in the noise assessment and mitigation process.

## 6. Future perspectives of the END

As shown in this paper, the EU noise policy and the END itself have come a long way since the adoption of the Directive in 2002. At the moment, the END finds itself at a turning point, with two rounds of noise mapping and action planning behind us, new common methods on noise mapping being adopted, and common approaches to assessment of health affects being discussed. It is therefore timely for it to be thoroughly evaluated under the REFIT exercise. While this exercise is foremost retrospective, it may cover some prospective issues.

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