"Noise Control Association of the Acoustical Society of Germany" (ALD)
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Comments on the END implementation, evaluation and cost-benefit analysis working papers

Remarks on the implementation of the END

Added value of the END to the European noise control policy

The implementation of the END in the Member States (MS) has for the first time enforced noise mapping on a European wide scale. Noise impairments are beginning to be more comparable. The harmonized impact data are an important data basis for the development of a consistent European noise control policy (noise reception targets, sound emission limits, internalisation of external noise costs etc.).

Added value of the END to traditional national noise control policy

The added value is especially high for Member States (MS) which did not have a corresponding national policy. But even for states with a developed national noise control policy there considerable improvements due to the implementation of the END

Example Germany[1]

Germany has long had a noise control policy for example via the Federal Immission (Impact) Control Act of 1974

The main elements of this policy are

- Specifications of noise reception limits in the planning of industrial and other installations and of transport infrastructure (except for air transport).
- Noise thresholds and the provision of financial means for the noise abatement for existing roads and railways of the Federal Republic and some Laender.

The biggest deficit in Germany had been for the existing road and tram/subway lines of the municipalities. Despite of such requirements in the German Federal Immission Control Act noise action plans have been developed only in a few municipalities.

The **information** to the public (END, Art. 9) considerably contributed to the increase of noise awareness. Noise nowadays gets a lot more attention in the media. The citizens participate in great number in the discussion on noise action plans (NAP):

- In Berlin nearly 3000 proposals from citizens contribute to the preparation of the Noise Action Plan 2013;
- The draft NAP of Sept. 2012 for the Frankfurt Airport: received 11 000 statements from the public .

Thanks to the broad public debate it is now well known in Germany that noise impairs the quality of life, disturbs concentration and communication, increases the stress

[1] The statement of no inconsistencies between existing legal noise control policy and END in Germany (Working Paper 2, chapter 4.2.4) can be doubted: different impact calculation models, different targets, no harmonization between national noise mitigations programmes and the END implementation.

and disrupts sleep. For a long time this awareness was very poorly developed. Noise reduction measures were originally not considered as an environmental priority in contrast to the reduction of air pollution in the EU.

With the EU Environmental Noise Directive and the mandatory public participation the problem of traffic noise is clearly moved into consciousness and is increasingly on the political agenda. Thus for example in 2010 the lowering of threshold levels for noise abatement at federal highways by 3 dB (A) could be achieved. Even with a lower volume of traffic than before the residents will in future be protected by barriers or embankments. Overall, that means by 2020 additional investments of around 1.5 billion €.
The Federal Ministry of Transport presented in August 2009 a second National Traffic Noise Abatement Package that combines new and ongoing measures to better protect the public against traffic noise. Here are ambitious goals formulated such as a reduction in noise pollution by 20 percent in air traffic, by 30 percent on the road and in the inland waterways and by 50 percent in rail transport.

With the Economic Stimulus Package of the Federal Government in 2009/2010 for the first time measures for noise protection at the loudest municipal roads could be funded. Government grants and subsidies were tied in various provinces to the existence of a noise action plan. (In the Free State of Saxony more than 15 million € have been invested for measures for noise abatement at municipal roads where the harmful values of 65 dB (A) during the day or 55 dB (A) at night are exceeded). In addition to the replacement louder pavements by quieter road surfaces and constructing noise barriers and the replacement of the existing pavement by open-cell (low-noise) Asphalt was funded in pilot projects in Chemnitz and Dresden.)
In some cases the implementation of action plans has led to new approaches, i. e. the introduction of a speed limit of 30 km/h ("Tempo 30") on main roads during the night, for example in Berlin.

Deficits

Though there is much progress a lot of deficits undermine the effectiveness of the Directive. The deficits are due to insufficient stringency of the END and inadequate implementation in the MS.

Implementation problems due to insufficient stringency of the END

- The END does not set European **noise reception limits**, **targets** or **trigger** values or **deadlines** for the implementation of the action plans whereas corresponding directives such as the one for ambient air quality (Directive 2008/50/EC) defines limits resp. targets and deadlines for their implementation.
- The **traffic volume criterion** for major railways may lead to the exclusion of lines with very high impacts (i. e. rail freight at night)
- There is no harmonized **traffic volume criterion in agglomerations** leading to Strategic Noise Maps which are not comparable.

- Agglomerations use different **road traffic models**. This also undermines comparability.
- The END does not present a methodology for exposures due to **combined sources.**
- The END is not integrated into a harmonized European noise control strategy.
- A clear definition of "**Quiet areas** " is missing.
- There is no approach for the impacts of **combined noise sources.**

Inadequate implementation of the END in the MS.

Many deficits result from the inadequate **implementation** of the END in the MS The example of Germany shows:

- Germany did not introduce **national** noise reception limits or targets[2]. This was left to the German regions or local authorities.
- The German decentralized definition of the **"competent authorities**" resulted quite often in administrative entities without competence, i. e. rural communities adjacent to a major road or railway line without any possibilities to implement source-related measures (a recent revision of the corresponding law now obliges the German Railway Agency to design the NAP for major railway lines).
- The German allocation of responsibilities for the implementation of the END was not accompanied by a corresponding **regular** federal contribution of **financial means**. This results in a limited implementation of noise mitigation measures - especially for main roads in agglomerations - where the majority of persons exposed to high noise levels lives.
- There was **considerable delay** in the design of action plans:
  - Example Munich: the NAP of the first round was 5 years late.
  - Example NAP for the railways in the Bundesland Hessen: entry into force was in May 2012, a delay of nearly 4 years.
- Many action plans are just a **collection of possible measures** without any specific application or obligation for implementation, without sound financing and not complying with Annex V of the END (i. e. Hamburg NAP 2008).
- There is a lack of **penalties** for delays in noise mapping and action plans.

[2] Chapter 3.3 Noise limits and targets in Working Paper1 should explain in more detail the type of limits: for planning and/or for existing infrastructures or installations, mandatory or guiding values, outdoor or indoor levels, for single sources or combined effects. The height of the limits is important: high levels might not trigger measures at all. Reference of the limits must be the research results on noise impact.

Remarks on the evaluation of the END

Added value

The END is an important step towards the introduction of uniform European target values for the protection of health in accordance with the solidified state of the noise impact research (WHO values of 65/55 dB (A) day/night)
The Directive is the appropriate framework to establish a Europe-wide consensus on dose-response relations for evaluating the adverse health effects and to promote the discussion on cost-benefit analysis.

Despite its deficits the END has already contributed to an improved noise control policy even in Member States with an established policy (see above: Germany)

Effectiveness

The effectiveness of the European noise control policy of which the END is only one element should be measured by the reduction of impairments due to noise.
Significant reductions have not taken place yet. This is mainly due

- to the insufficient **implementation** of the END,
- the general **slow progress**[3] in noise abatement (due to the need of a combination of measures which for itself have limited effects and the time-lag of certain measures such as sound emission limits for new products/vehicles - with full effectiveness only with the compete renewal of fleets - 40 years for freight wagons)
- and the **lack of financial means** for noise control

The study "**Towards a Comprehensive Noise Strategy**" of 2012, made for the Committee on Environment, Public Health and Food Safety of the European Parliament states that "the END has led to little progress in reaching the objective of reducing the proportion of the EU's population suffering from noise pollution" (p. 9).
The study concludes: "For a comprehensive noise strategy a holistic approach has to be taken that brings together measures at the source and at the receiver" (p. 72).

In addition to the above mentioned implementation deficits the effectiveness of the overall noise control policy is undermined by a generally not sufficiently coherent policy:

- The END is of **limited significance for the EU noise policy:**
  For example, the latest noise emission limit setting (i. e. for road and rail vehicles) was not related to the END:
  - Above all the limit setting follows internal market imperatives;
  - Example rail noise: main target of limit setting is to establish interoperability (therefore the noise regulations are enforced via Technical Specifications for Interoperability TSI)

[3] The time between new noise maps and new action plans should be increased to two years.

    - There is no common and harmonized philosophy for limit setting. The legal implementation is based on different approaches (Rail: TSI, road: Regulation/Directive)
    - The Impact Assessment for new noise emission regulations is based on external cost assumptions which are not part of the END (compare Annex III, Assessment Methods For Harmful Effects)
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- Finally, the END is of limited significance for other EU policies. The EU rail transport policy is an example for that:
  The Regulation (EU) No 913/2010 concerning a European rail network for competitive freight [8] aims at "the establishment of international rail corridors for a European rail network for competitive freight" (p. 22). One of these corridors is the Corridor Zeebrugge-Antwerp/Rotterdam-Duisburg-[Basel]-Milan- Genoa which runs through the Rhine valley with already very high exposures (nighttime average levels up to 80 dB(A) with maximum levels over 100 dB(A)). An increase of traffic volumes or speeds would lead to even higher exposures. A sole German NAP for this corridor would be insufficient due to the international character of this corridor. The corridor noise abatement would optimally be tackled by an interstate or European NAP. In fact Regulation No 913/2010 states that “projects aimed at reducing noise from freight trains should be encouraged” (p. 23) but such a consistent noise action plan at European level does not yet exist. The END is of limited significance for other EU policies. The EU rail transport policy is an example for that:
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Cost-benefit analysis CBA

CBA Methodology

In the Working Paper the benefits are calculated via the **Daly approach**. This method is not very transparent, for example in the determination of the disability weights.
It is not very clear in the Working Paper which indicators are chosen for the three monetized noise effects (high annoyance, high sleep disturbance, ischaemic heart diseases). The L_{den} as a weighted level for the whole day contains the effects of a changed L_{night} , resulting in the reduction of the L_{den} even without any change in the L_{day} or $L_{evening}$. Then if the high annoyance or the ischaemic heart disease are determined as a function of the L_{den} there might be a double count of effects though the relevant daytime levels are not changed.

Frankfurt Airport

The Frankfurt Airport is not a good example for determining the benefits of the END as the noise mitigation programmes are based on the national **Air Transport Noise Act** which is implemented independently from the END.
In the Working Paper the **costs** are determined for sound insulation windows (with no effect on the outdoor noise levels) whereas the **benefits** are calculated via the reduction of the exposed persons in terms of outdoor levels. But this reduction is mainly the result of the introduction of a night time flight ban between the first and second round (as a compensation for the construction of an additional landing runway) with resulting reductions for the L_{night} and consequently for the L_{den}.
It is a difficult question how to evaluate the effects of the reduction of indoor levels via sound insulation measures. The Working Paper (p. 23) assumes that there will be no further sleep disturbances for a good sound insulation whereas there is a controversial discussion in Germany on the real benefits of this measure with many persons being annoyed by being forced to keep the windows closed.

Proposals for the END improvement

- First of all: Repealing of the END would be a **disaster** for the European and the Member State noise control policy with an abruption of a policy the effects of which are just starting to become more and more noticeable.
- The most important improvement of the END would be the introduction of EU **noise reception limits**. Short term limits should be based on the WHO criteria to avoid health risks due to noise. This would underline the importance of noise reduction for health in Europe and would make the noise policy more stringent.
- Thereby an approach for **combined effects** or sources should be introduced.
- The introduction of limits might be politically difficult. But at least **common European target values** should be introduced.
- Currently the noise policy is based on equivalent levels. The introduction of other indicators such as **L_{max} and the number of events** would allow a better abatement of sleep disturbances.

  It seems necessary to explain this preference for European limits against the common argument for national targets according to the principle of subsidiarity:
  Objective of the community policy is among others the creation of **equivalent living conditions** in Europe. All people in Europe shall live in a good environment, which is characterized by a high level of protection. This also includes that no European is affected by noise in his quality of life, especially not in his **physical integrity**. The noise impact research has shown, that the health effects of noise **do not depend on nationality**. WHO-Europe has developed **Europe-wide valid objectives** for noise protection. European dose-effect relationships have also been established for annoyance. Therefore, it is logical that the protection against noise is a Community task, focusing not only on the setting of limits for noise emissions from products (car, tires, rolling stock, outdoor machinery, etc). The END is the first important **framework** for a comprehensive noise protection in the Union, which aims at the avoidance of adverse environmental impacts.
  The responsibility of the Union for a common noise policy also stems from the policy fields of the Union that have an impact on noise. In particular, the **European transport policy** has important effects on the noise pollution. The development of trans-European transport networks leads to corridors with very high noise exposure; the critical situation in the Middle Rhine Valley as part of the Rail Corridor Rotterdam - Genoa illuminated this very well.
  The aim of Community policy is also, in accordance with the polluter pays principle to **internalize the external costs of transport**. This is only possible if there are European dose-cost functions as the basis for the application of economic instruments for noise protection.
  Furthermore European limits would be **self-binding** for the EU policy: When developing transport corridors, for example, the impact assessment must include an evaluation of the noise impairments on the basis of European targets or limits.

- For the implementation of action plans **mandatory** European **time frames** should be introduced. Otherwise the current arbitrary noise policy will continue. NAP should only be accepted if they comply with the END (Annex V). Sanctions should be introduced.
- The European Union should participate in the **funding** for noise abatement, especially for sources which need a common European approach such as the renovation of the existing rail bound freight fleet. The funding of the retrofitting of freight wagons with the "Connecting Europe Facility" means is a good example.

- The END should become the **Framework Directive** for the European Noise Policy which integrates all the approaches to mitigate noise: at the sources, in the sound propagation path, at the receiver - by regulations, incentives, internalisation of external costs, operating restrictions and communication:
    - The END should establish a common philosophy, standards and approaches for the **noise emission regulations** (vehicles **and** infrastructure (the latter is - by the way - currently mostly not regulated). The approach for limits should be based on the **"best available techniques"**, as prescribed for industrial plants (see the Integrated Pollution Prevention and Control Directive (IPPC, 2008/1/EC).
    - A common approach to noise-related **operating restrictions** should be established as well: Currently they exist only for air transport; but they are urgently needed for rail, among others as a support for retrofitting of the existing freight wagons (since Dec. 2012 Germany has introduced Noise Differentiated Track Access Charges NDTAC in order to stimulate the retrofitting of the noisy freight wagons with cast iron (CI) block brakes. It is the aim of the German Government to ban the operation of CI-wagons by 2021 to support the acceptance and effectiveness of the NDTAC - but this would have to be compatible with European law). The proposals in the planned communication of the Commission on railway noise from freight trains would be helpful.
    - The Commission White Paper 2011 "Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system" aims at the full **internalisation of external transport costs** by 2020. Therefore common methods for the determination of **external noise costs** as well as harmonized approaches for the **internalisation** of external transport noise costs are needed and should be addressed within the END.
- The END should be embedded in an **updated European Noise Control Strategy**. This could either be done by a revision of the Green Paper Future Noise Policy of 1996 or by drafting a White Paper Noise Control. In any case a broad discussion at the European level on the Future Noise Policy is desirable and should include a better participation of the NGO. Part of an updated European Noise Control Strategy should also be a better coordination among the different Directorates of the European Commission working on noise control.. DG Environment should have the lead management.
- A better integration of the END and **other policy fields** is required: Above all this concerns the EU transport policy. Noise Control should be one of the essential requirements to be observed in the development and implementation of the European transport policy.
  Some noise-related measures (i.e. speed reduction, increased transport efficiency etc.) are also beneficial or relevant for other targets within the concept of sustainable mobility (air quality, safety etc.). A better coordination of the different policy fields could take advantage of these synergy effects.