

Environmental Noise Policy: ways out of the crisis

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Summary

For almost 50 years, prevention has been the key element of national and local noise policy. Reduction of noise exposure has been very much linked to spatial developments such as urban developments and road extensions. The financial and economic crisis has almost put an end to these developments. This implies that the conventional noise policy has lost its effectiveness. Moreover, the voluntary mitigation of excessive noise as requested by the END is not effective either, now that local and national authorities have little room for investments and many other priorities than noise. This calls for an intensified focus on noise reduction at source. The possible labeling of cars offers an opportunity to national and local authorities to introduce incentives for the use of quiet cars. Such incentives could be part of the END Refit, possibly at the cost of less frequent noise mapping.

1. Development of noise control policies

1.1 From curative to preventive action

National policies protecting citizens from potentially harmful noise exposure have been developed in many civilized countries. In the early days of noise policy the trigger for protective action often was a resident complaining, calling upon the (local) authorities to interfere in a curative manner. The complaints would typically refer to existing situations such as industrial activities or loud neighbors. The governmental action would be to assess the real exposure, compare this to limits or objectives and – if considered to be required – to call upon the party causing the noise for reduction. In later versions of noise policy, prevention became the key objective. Legal limits were set, applicable to new or changing situations that could potentially give rise to increasing exposures. In many cases, stand still became the standard objective. In first instance, this type of policy was applied to controllable changes, such as new or significantly changed road or rail infrastructure, airports, or urban development near such sources. This policy linked noise prevention to spatial initiatives. The usual noise mitigation measures would be barriers and soundproof windows. In the nineties, cost benefit analyses of various noise control scenarios were

made², clearly showing that these usual options were by far less economically efficient than noise reduction at source. The latter was often acknowledged to be the more economically feasible option, but was hardly ever brought to practice. The latest policy revisions refer to increasing exposure due to traffic growth, which some countries have adopted in the form of noise production ceilings. Again, prevention and stand still are the predominating objective and the predominating effect.

1.2 The Environmental Noise Directive

The European Environmental Noise Directive has added to this situation of prevention oriented policy, to the effect that it strives to assess the exposure and to identify the main sources. The END comes back to a curative approach in that it focuses on existing exposure and suggests member states taking mitigating actions (on a voluntary basis) in the case of excessive noise exposure. It involves the public in decisions about desirable actions.

1.3 Effectiveness

Even when the information produced under the END is incomplete and sometimes erroneous, it tends to show that the noise policy has not been very effective in its objective to reduce the exposure to harmful noise. The overall exposure seems to be fairly constant, even in long term

² For instance in the STAIRRS project

perspective, with only modest reductions in specific areas. At the best one could say that the growth in population density, urbanization and mobility has more or less been compensated by reduction and mitigation. Adding to that we can now observe the effects of the financial and economic crisis, which are discussed in the next section.

2. Effects of the crisis

2.1 Demography and spatial planning

In The Netherlands, the economic crisis following the financial crisis of 2008 and further has caused significant effects in the field of spatial developments. These are demographic developments that show an increased urbanization of the western central region and reduction of population in more remote northern and southern regions. Adding to that, the planning of new urban areas has almost stopped, due to lack of investment capital. By the end of 2013, some 35 million square meters of residential buildings, 8 million square meters of office space and 12 million square meters of commercial space was reported empty and unused. The challenge here is to focus on the transition of these unused buildings into dwellings for that part of the market where there is a demand, i.e. apartments in the lower cost class. That makes it economically difficult to achieve the desired transition, unless the quality demands are substantially reduced. Good noise insulation, both from external noise sources and between dwellings, is one of the quality fields where there is constant pressure to loosen quality requirements.

2.2 Mobility and transport

The crisis has caused a reduced economic activity, and the mobility and transport growth is a good indicator for that. Within the EU 27 the annual growth of freight transport was reduced from 1.3% in 1995-2011 to 0.9% in 2000-2011. Passenger transport decreased from 1.4% to 0.8% over the same periods (Figure 1)

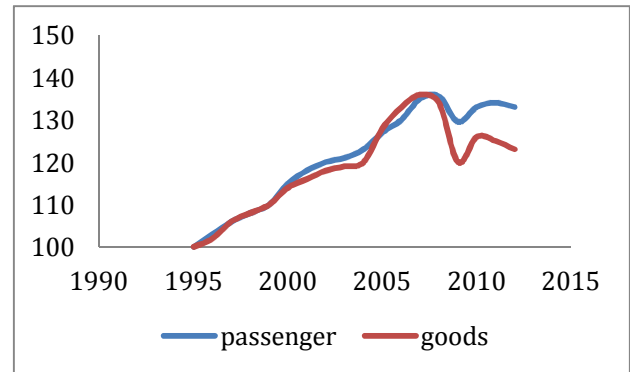


Figure 1. Transport development for the EU [1]. 1995=100%

In terms of noise production, these figures are irrelevant. But in terms of traffic growth as a driver for new investments in road extension, the result of the crisis is a strong decline in activity. As it was made clear in section 1, prevention and reduction of traffic noise usually takes place in relation to new road developments. In that respect, the crisis puts an end to both of these.

2.3 Industry

In the first half of 2009, almost 3.500 Dutch enterprises went broke, an all time high since early 1980. For EU 27, the unemployment rate went up from 7% in 2007 to 9.7 in 2011. These developments clearly affect the activity and the transport rates and may lead to more buildings left empty.

2.4 Financial scope

The shortage of investment capital, introduced by the capital suppliers, also affects the availability of public funds. In the 2013 action plans in the frame of the European Noise Directive, there is generally less ambition and less action than in previous round. Both national and local policy is more focused on maintaining acceptable levels of social care, employment and – at the same time – reducing budgets than on quality of the environment.

2.5 Policy effects

For environmental noise, the cities in The Netherlands have gained almost full autonomy, even in applying legal limits, and environmental quality is not their top priority. At the same time, the ministerial expertise for environmental noise, once a key priority, has almost vanished (in 2 years time the ministerial noise department was reduced from almost 15 to currently 3 technical experts). Even if this is an effect of the political

orientation of the current Dutch government, the financial and economical crisis has rather enhanced this than prevented it.

The European Commission plays an important role in setting a comprehensive noise policy and even though the Netherlands are a major critic of anything invented in Brussels, the European Noise Policy may in the end replace the national policy level. After all, the EC has recently increased its noise expert staff by 300%. But so far the introduction of the common assessment method and the refit of the END appear to be very lengthy processes and the noise source policy, pre-eminently the playing field of the EC, is even slower.

2.6 Effectiveness of noise policy

From the above sections, it is clear that a noise policy, mainly oriented towards prevention (in combination with spatial developments) and voluntary mitigation (under the END) only stands a small chance of success. After all, spatial developments, both in urban development and infrastructures, have significantly decreased and so has the motivation for local mitigation.

3. A more effective noise policy

3.1 Source oriented European policy

When considering a more effective noise policy, this is the time for a shift towards a more source oriented policy. Under the influence of the car industry, initiatives for more stringent type approval limits and for optimized tyres have been delayed and weakened. The 80 billion Euro budget of the Horizon 2020 research program should enable European car industries to take the lead in a global change towards clean, zero-emission and quiet cars with optimized tyres. In the situation where Europe is trying to overcome the effects of the crisis, such measures can be considered a support to the European industry rather than a burden.

3.2 Source oriented national policy

Once the noise labeling of road vehicles has been achieved, cities as well as national road authorities may be capable to set incentives for quiet cars. Quiet car types might be granted advantages in the form of parking space or parking fee reduction, road tax and road toll reduction, and even purchase price

reduction, similar to what has happened with hybrid and electric cars. The effect of such measures could extend to an entire city or an entire road network, as opposed to local measures such as optimized road surfaces or noise barriers. Moreover, such measures would come at reasonably moderate cost, depending on the type of incentive under concern. Mostly, such regulations would take the form of a bonus/malus with basically zero end-effect for the tax payer.

The expected END refit would be an appropriate framework for the introduction of such incentives. These would probably be more effective than the current measures, which are mainly focusing on peak shaving (only the hot spots, i.e. the locations with high noise exposure), whereas the use of quiet vehicles would be to the benefit of the whole network.

An additional effect for cities would be the expected increase in noise awareness, both under residents, car owners and local politicians. A city with 50% of quiet cars would be a huge success both for politicians and residents, worth to be mentioned in the media, as opposed to a quiet road surface that would hardly be noticed.

3.3. Recommendations for the END Refit

In addition to the above, there are other issues that could be addressed more intensively by cities and could be emphasized more in a future version of the Environmental Noise Directive. A key objective would be to make resident more aware of their noise situation, which could be achieved by emphasizing the positive aspects rather than the negative ones. An example is the designation and management of calm areas in cities. This can be done at reasonably little cost, but with large positive media attention. Although it has not been proven yet by extensive field research, a more positive attitude of residents and therefore less annoyance and better health are likely to be expected.

Such positive effects would have to be stimulated if a revision of the Environmental Noise Directive, possibly traded off with potential saving options such as delaying the mapping to once every 10 years instead of every 5 years.

Conclusion

The effects of the financial and economic crisis cause conventional noise policy elements such as prevention and voluntary mitigation to become less effective. There are options to deal with the crisis and turn noise policy into a more effective action. The Refit of the END offers an opportunity to investigate such options and to turn them into practice.

References

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