

AIR POLLUTION AND GROWING INEQUALITIES

*From an Eastern perspective: the
case of Lithuania*

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EPHA is a change agent – Europe's leading NGO advocating for better health. We are a dynamic member-led organisation, made up of public health NGOs, patient groups, health professionals, and disease groups working together to improve health and strengthen the voice of public health in Europe. EPHA is a member of, among others, the Social Platform, the Health and Environment Alliance (HEAL) and the Better Regulation Watchdog.

Further reading

EPHA Clean Air 4 Health >> <https://epha.org/clean-air/>

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AIR POLLUTION AND GROWING INEQUALITIES FROM AN EASTERN PERSPECTIVE

The case of Lithuania

Air pollution can seriously damage an individual's health. Those living in urban areas are particularly vulnerable, especially children and elderly people. While Lithuania does not have relatively high levels of air pollution and is slowly improving its air quality, there are still serious challenges to be faced.

The health burden of air pollution on Lithuanian society

Premature death is the most serious outcome of poor air quality. According to European Environment Agency data, the annual average level of PM_{2.5} emissions exceeds the EU average, thus causing 3,350 premature deaths each year. The EU acknowledges the problem and has imposed norms and regulations regarding air quality, but political will is required to reduce the level of emissions to reach these norms.

Air pollution does not respect borders. While national politicians can take action on some of the main causes of pollution in Lithuania – to reduce emissions from industry, transport, or from households, the levels of air quality in countries neighbouring Lithuania also have an impact. For example, Poland, Lithuania's biggest neighbour, has 33 out of 50 of the most polluted cities in Europe, according to the World Health Organization's Global Urban Ambient Air Pollution Database 2016. Poland has regularly

Country	Population (x1000)	Annual mean (PM _{2.5})	Premature deaths (PM _{2.5})	Annual mean (NO ₂)	Premature deaths (NO ₂)	Somo35 (O ₃)	Premature deaths (O ₃)
Lithuania	2 943	15,5	3 350	12,5		2 457	
EU-28	502 351	14	399 000	18,7		3 507	
Total	534 471	14,1	428 000	18,6		3 501	

Effects of pollution in Lithuania.

Source: EEA, Air pollution country profile, 2017



exceeded PM levels for years, leading to the launch of an infringement process (C-336/16 2018). Increasing levels of air quality in Poland will consequently lead to reduced air pollution in Lithuania as fewer WHO suggests that long-time exposure to particulate matter contributes to the risk of developing cardiovascular and respiratory diseases, as well as lung cancer, affecting all age groups, and particularly those with existing heart and respiratory conditions (WHO 2013).

According to the WHO, ischaemic heart deceases, strokes, as well as trachea, bronchitis and lung cancers, are the top causes of death in Lithuania. How much is this due to the fact that only slight improvements in air quality were achieved over the last decade, particularly regarding levels of PM_{2.5} emissions? In 2016, more than 60% of the passenger fleet was diesel-powered, according to Eurostat data on cars by type of engine fuel. According to a study conducted by J. E. Jonson et al., 12 deaths per year, attributable to excess diesel emissions could be avoided if the appropriate measures were taken (J.E. Jonson et al 2017).

The level of Benzo(a)pyrene (BaP) emissions in Lithuania (caused by domestic heating and home fires) are also particularly concerning. According to data from the European Environment Agency, Lithuania is still significantly exceeding the EU's limits on BaP emissions, revealing a lack of commitment to the introduction of renewable resources of energy. This can also have an impact on public health - for example, in 2002, BaP emissions

from domestic fires in Vilnius led to a twenty-fold increase in the number of incidents of respiratory diseases and worsened the health condition of sufferers of bronchial asthma (Ovadnevaite et al 2006).

Air pollution affecting the most deprived, deepening inequalities

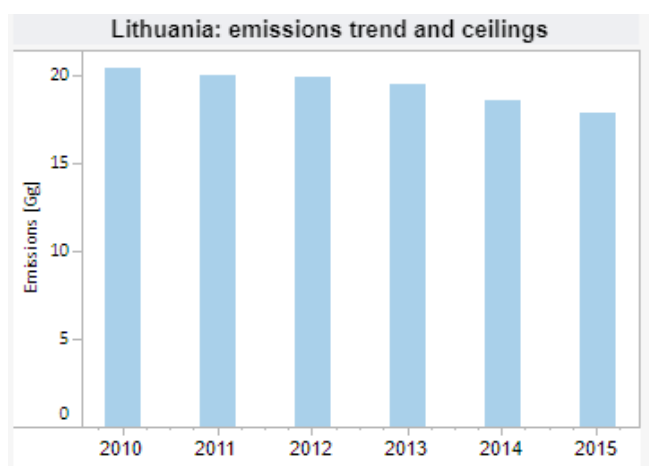
Air pollution has the greatest effects on the most vulnerable: the increased susceptibility of the elderly and the young are well-evidenced (EEA 2017). For example, children exposed to air pollution have been shown to experience impaired cognitive development as well as poor respiratory and cardiovascular health and allergies (EEA 2017) while it can aggravate existing conditions suffered by the elderly. According to 2017 Eurostat statistics, 19,3% of Lithuanians are aged 65 or over, with 14,8% below 15 years of age. 34,1% of Lithuanians are therefore vulnerable to the effects of poor air quality, a figure which will only rise as the Lithuanian population continues to age.

Poor health of the Lithuanian population, if action is not taken, will also impact the country economically, reducing its productivity through lost working days, and by prematurely reducing the available workforce, thereby impeding economic growth. A joint WHO and OECD report from 2010 (WHO and OECD 2015) revealed that the economic cost of premature death caused by ambient particulate matter pollution to Lithuania is 3,812 million US\$.

Air pollution can increase health inequalities

1. Benzo[a]pyrene is a polycyclic aromatic hydrocarbon. It forms when the combustion of organic matter is not fully completed at temperatures between 300 °C and 600 °C. It could be found in coal tar, tobacco smoke and many foods. More information available at: <https://pubchem.ncbi.nlm.nih.gov/compound/2336#section=Top>.






Source: EEA, Air pollution country profile, 2017

as poor and marginalised people often live near busy roads and industrial sites, where air pollution levels are higher.

The Lithuanian case for fighting the health burden of air pollution

The health impacts of air pollution exacerbate the strains on the Lithuanian health system so it is clearly time for policy action. At the moment, Lithuania is in the process of drafting an action plan on reduction of air pollution that is supposed to be finalised by the end of December this year. In addition, there are ongoing debates about the introduction of car taxation in the Lithuanian government.



THE POTENTIAL OF A CAR-TAXATION SYSTEM IN LITHUANIA TO BRING HEALTH BENEFIT TO SOCIETY

by Kestutis Kupsys, Alliance of Lithuanian Consumer Organisations

As the Lithuanian economy is still performing below the EU average, recent evidence demonstrates that subsidising a model shift from diesel-fuelled cars to an electric/hybrid based car fleet with special safety nets for the poor would bring economic savings: in June 2018, the Alliance of Lithuanian Consumer Organisations (ALCO) , in co-production with the European Consumer Organisation BEUC, supported by the European Climate Foundation (ECF), conducted a study of 'Total Cost of Ownership

		2011	2012	2013	2014	2015
NO2	annual mean	0,0	0,0	0,0	0,0	0,0
O3	percentile 93.15	0,0	0,0	0,0	0,0	0,0
PM10	percentile 90.41	0,0	0,4	3,7	3,3	1,9
PM2.5	annual mean	0,0	0,0	0,0	0,0	0,0
BaP	annual mean	85,5	100,0	100,0	85,5	28,3

The percentage of urban population exposed to concentrations above EU standards

Source: EEA, Air pollution country profile, 2017





“A joint WHO and OECD report from 2010 (WHO and OECD 2015) revealed that the economic cost of premature death caused by ambient particulate matter pollution to Lithuania is 3,812 million US\$”

(TCO)'. With this TCO tool, used for the first time in Lithuania, ALCO looks for clues to decide what can be done to use taxation of cars to reduce air pollution.

In short, the TCO study reveals Lithuanians like diesel cars because it saves them money. If the current status quo is preserved, diesel powered cars will remain TCO-competitive for a decade to come, continuing to produce clouds of smoke and excessive NOx emissions from their internal combustion engines.

The TCO of Battery Electric Vehicle (BEV in short) was recently considered in Slovenia, where some amendments were made in the tax system in order to favour BEVs. If Lithuania were to introduce this approach, it could become very competitive, making BEV's attractive for current LPG and diesel car buyers.

As a specific safety net for those with low incomes who cannot afford new cars, measures to open secondary BEV (and plug-in hybrid vehicles, as intermediate solution) car markets are needed, allowing less affluent Lithuanian families to meet their everyday transportation needs. There is also the need to widen

electric public transportation options in cities, despite the fact that some municipalities are only starting to forgo diesel in favour of compressed natural gas.

Moreover, in light of the causal link between air pollution and costly diseases, supporting policy measures to encourage people to walk, bike and use public transport would bring additional health benefits and save costs.

National efforts to reduce air pollution in Lithuania should be regarded in the EU context noting that air pollution is a European public health challenge which does not recognise borders. Currently, the European Commission is conducting a public consultation ending on 31st July as part of the fitness check of the EU Ambient Air Quality Directives (2008/50/EC, 2004/107/EC). This provides a great opportunity to not only raise concerns about health inequalities in Lithuania caused by air pollution and the strains it will put on the Lithuanian health system, but also to suggest ways in which the government could improve how it complies with the directives.

Although Lithuania is not facing the same infringement procedures as six other EU national governments, it can happen in the future if the appropriate actions to improve the situation are not taken now



Conclusion

To conclude, the main socioeconomic effects of poor air quality in Lithuania are fewer healthy life years via increased levels of disease and premature deaths, and significant economic impacts, which are also affecting the Lithuanian healthcare system. Acting on diesel pollution, an identified risk factor for air pollution related diseases, could be a potential way forward bringing social benefit and allowing considerable savings for the national budget. In the context of an aging Lithuanian society, without action now, the situation will only get worse.





The main socioeconomic effects of poor air quality in Lithuania are fewer healthy life years via increased levels of disease and premature deaths, and significant economic impacts, which are also affecting the Lithuanian healthcare system.

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