

21 October 2020

Health Costs of Air and Transport Pollution in European Cities

Event Report

Launch of New Study and Online Discussion



About the European Public Health Alliance

The European Public Health Alliance (EPHA) is a change agent – Europe's leading NGO alliance advocating for better health. We are a dynamic member-led organisation, made up of public health civil society, patient groups, health professionals, and disease groups working together to improve health and strengthen the voice of public health in Europe.



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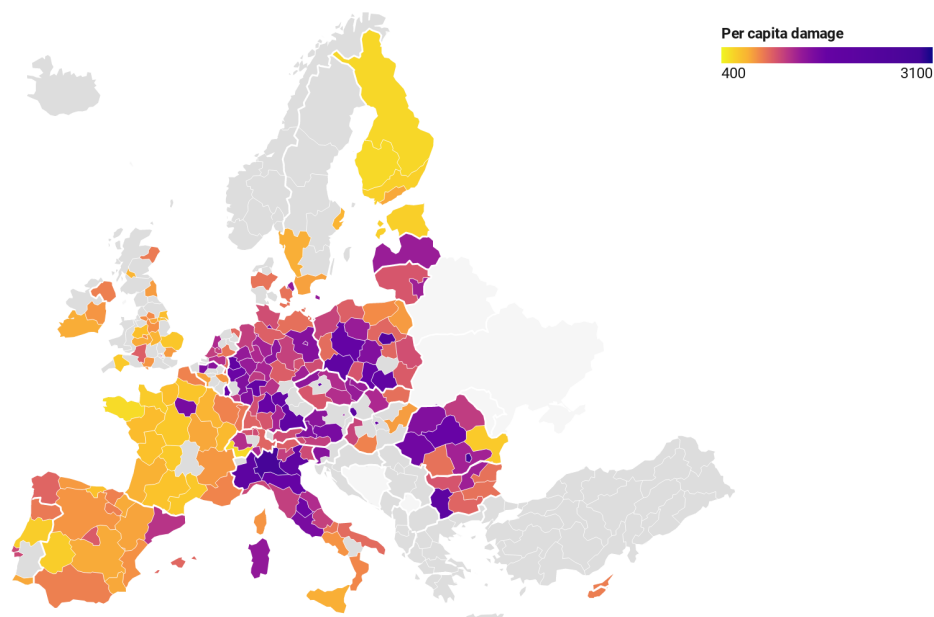
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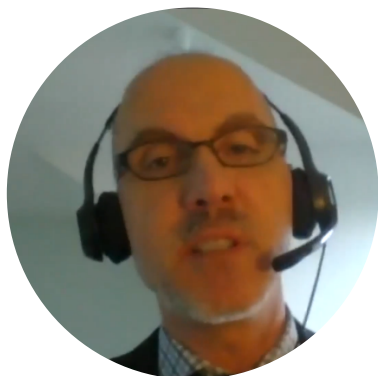
Introduction

On Wednesday 21st October 2020, the European Public Health Alliance (EPHA) hosted an online event presenting its new report entitled **“The Health costs of air pollution in European cities and the linkage with transport.”**

Transport pollution puts a particular burden on cities, damaging the health of all urban dwellers. Five years after Dieselgate, this new research aims to estimate the social costs of air pollution in 432 cities across Europe.



Opening the discussion, Sascha Marschang, EPHA Secretary General said



"Let me be clear on this: we need a renewed commitment to a complete phase out of the polluting combustion engine, as the correct conclusion of the Dieselpgate scandal!"

"Anything else might be too little too late, and ultimately it could compromise Europe's long-term healthy recovery and Green Deal objectives."

Our study reveals the magnitude of the damage toxic air is causing to people's health and the huge health inequalities that

exist between and within countries in Europe. To a large extent, the situation can be influenced by transport policies and cities can reduce costs by switching to zero-emission urban mobility. Governments and the European Union should bear these costs in mind for transport policy in order to support, not to hinder, a healthy recovery from the Covid-19 pandemic."

About the report

"Air pollution is a place where economics and health sciences can meet."

Sander de Bruyn, Environmental Economics

Coordinator at CE Delft, and editor of the report said in his opening remarks that "Air pollution is a place where economics and health sciences can meet."

In fact, according to scientific studies led by the World Health Organization (WHO) in 2018, air pollution is the 4th major cause of death among all health risks, exceeded only by high blood pressure, diet and smoking

Air pollution in economics is a traditional external effect: individuals cannot choose their level of pollution.



The solution is to internalise the external effect by making the polluter pay for the damage. The social costs are the costs of tangible (medical costs, loss of working days) and intangible (reduced life expectancy) costs.

The latest study is the second of a trilogy of reports for EPHA: a study estimating the social costs of diesel emissions at country level (2018), a study to estimate at the city level the social costs of air pollution and investigate the role of transport in these emissions (2020), and a future study that will investigate effective transport policies at the city level to reduce the social costs of air pollution (expected in 2021). The methodology of the studies follows three steps:

1. determine the concentration levels of pollutants for the 432 cities in 2018, thanks to the Eurostat Urban Audit data combined with the European Environment Agency's data from PM2.5, PM10, NO2, and O3 monitoring stations;
2. quantify the impacts on mortality and morbidity, using WHO data and guidelines, and city specific age cohorts and country/EU incidence rates;
3. value these impacts, using the peer-reviewed DG MOVE method.

The final table on the total damage costs in 2018 is composed mainly of capitals, the first one is London (€ 11,381 million), followed by Bucharest (€6,345 mln) and Berlin (€5,237 mln). Four factors influencing the ranking are in each city: air quality, the most important, the population size, the income level and the age structure. Bucharest (€3,004) is first in the damage costs per capita in 2018 ranking, followed by Milan (€2,843) and Padova (€2,455).

The main conclusions of the study are:

1: the pollutant the most costly is PM (PM2.5, and PM10), with an average of 83% on all the costs in all 432 cities;

2: the impacts of modes of transport, by relating the ambient air quality to indicators of transport in the Urban Audit (data available only for 79 cities). Transport related variables plus household heating influence around 30% of the city's air quality each. These data are confirmed by the literature and by experts.

The model points out that car possession is an important explanatory variable: **“if car possession in a city could be halved, a city's air quality tends to improve by 24-25%.”**

Moreover, **“halving the journey time to work could improve air quality by 15-27%.”**

Sander de Bruyn concluded by underlining the importance of air quality as a determinant of public health in European cities.

Following the presentation of the new report, Sander de Bruyn answered some questions. On the non-inclusion of the neurological and neurosurgical diseases in the study, he said that CE Delft based its analysis on the conservative WHO guidelines on air pollution and human health,

published in 2013. No update of these WHO guidelines are expected until 2022.

Nevertheless, even very small doses of air pollution cause harm. On the surprising results in Berlin, he explained that air monitoring stations are well-placed and accurately monitor the real emissions, whereas in many other European cities, air pollution is underestimated. This issue is based more on a city-level analysis, to check where the monitoring stations are placed.

“We quantify that every citizen in Europe loses annually €1,276 in welfare due to poor air quality.” The figure differs considerably from over €3,000 per capita per year in Bucharest to less than €584 in Tallinn.

Our regression analysis suggests that transport policies matter for air quality in cities and may be key in reducing the social costs of air pollution.”

Where are costs highest?

City	Country	Total annual cost	Per capita cost
Bucuresti	Romania	€ 6,345,139,087	€ 3,004
Milano	Italy	€ 3,498,940,399	€ 2,843
Padova	Italy	€ 508,127,301	€ 2,455
Warszawa	Poland	€ 4,222,682,712	€ 2,433
Bratislava	Slovakia	€ 891,503,030	€ 2,168
Venezia	Italy	€ 552,318,931	€ 2,106
Brescia	Italy	€ 399,212,549	€ 2,106
Sofia	Bulgaria	€ 2,575,337,596	€ 2,084
Torino	Italy	€ 1,815,447,357	€ 2,076
München	Germany	€ 2,877,847,412	€ 1,984

A full list of cities is available [here](#). Interactive map [here](#).

Highlights from the discussion

"An urgency to act on air pollution emerges clearly from this study."



"Veronica Manfredi, Director for Quality of Life (Air, Water & Industrial Emissions), DG Environment, European Commission, said during her [video message](#) that the European Commission welcomes this study and it resonates with its new EU Action Plan Towards a Zero Pollution Ambition for air, water and soil. "An urgency to act on air pollution emerges clearly from this study".

Air pollution is the largest environmental health burden in Europe: according to the European Environment Agency (EEA), 1 in 8 deaths is linked to pollution. The CE Delft report underlines the social and spatial inequalities affecting Europeans: increasing epidemiological evidence, and also the CE Delft study, shows that pollution often affects vulnerable people, for instance, the elderly, those with lower incomes, those with pre-existing medical conditions." The monetization of the health cost of pollution is key to explain the importance to act on this topic to decision-makers and citizens: "Economical calculation of environmental impact, as challenging as it might be, is indispensable to tackle further environmental health issues such as air pollution."

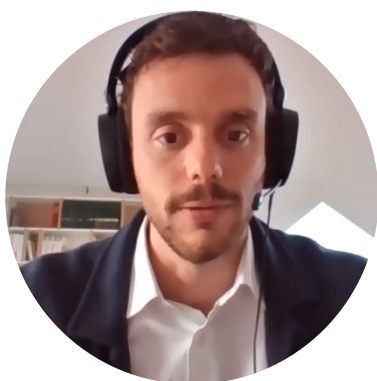
Europe has not been sufficiently ambitious, in its standards nor in its implementation. The European Union needs to discuss not just clean technology but also alternatives to cars in cities: "how can we stimulate the alternatives?"

MEP Bas Eickhout, Vice-Chair, Committee for Environment, Public Health & Food Safety (The Greens/EFA, NL) said in his response to the study's results that he already knows how costly air pollution is. Yet, he thought that "the difference between European cities should be stressed, air pollution is contributing to the inequalities within Europe."



"It also raises the question about inequalities within cities. He was also surprised by "how big is the impact of local transport policies on the air pollution within a city: 25%! Policy matters" and cities can learn from each other. "The possession of cars stimulates the use of cars! Change is difficult but I think COVID shows that change is possible and in the end change can get a lot of support."

"Sustainable transport solutions should always be available, attractive and affordable to all."



"Dmitri Vergne, Team Leader on Sustainability in BEUC, reminded the audience that "the poorest are hit the hardest by the air pollution crisis. It happens not only in big cities, in the list of the ten most affected cities, you also have some middle-size cities such as Padova. These are rather conservative estimates, for instance without the brain and neurological dimensions." The report only focuses on the health costs, but many other costs can be added: for instance,

"spending on fuel, the huge amount of time wasted in congestion or the huge waste of public space which is dedicated to individual cars"

These should also be taken into account for the cost related to transport pollution in cities. Never forget "the high cost of inaction! When finding solutions, we must not put more costs on consumers who are often trying to do their best. Sustainable transport solutions should always be available, attractive and affordable to all. Unfortunately, this tryptic is often not met: "it is more a luxury to move more sustainably: for instance the train costs more than the plane to go to a holiday destination". The polluter-pays principle must be balanced by affordable alternatives and not constrain the poorest consumers.

The price signal must be both negative and positive, e.g. purchase premium for electrical vehicles for the poorer consumers without public transport alternatives, or single ticketing system. A big project involves overseeing a lot of moving parts, often-times from different people. To have a successful rollout, project managers rely on a well-crafted project plan to ensure objectives are met on time and on budget. A project plan is a formal approved document which is used to define project goals, outline the project scope, monitor deliverables, and mitigate risks.

Benedek Jávör, Representative of Budapest

municipality, highlighted the dramatic costs of air pollution in Central and Eastern Europe, especially in Budapest. "The health cost of air pollution is shockingly high, it is more than the double of the municipal budget of Budapest." Benedek Jávör, Representative of Budapest municipality, highlighted the dramatic costs of air pollution in Central and Eastern Europe, especially in Budapest.



"The Recovery and Resilience Facility (RRF) should target a green transition and a green recovery. The cities must be an important partner, an ally of the European Commission because in those Member States, the national governments are very very often quite critical towards the increasing European climate and air quality targets."

"The health cost of air pollution is shockingly high, it is more than the double of the municipal budget of Budapest. We have to find solutions, not only to transport emissions but also to heating emissions."

The second-hand car market means that polluting diesel vehicles, banned from western cities, are now massively introduced in the region. "The improvement of local and European legislation have unintended consequences in Hungary and in its surroundings." One solution is to capitalize on the public transport support from users, e.g. Tallinn, its free public transport since 2013 and its good air quality. "It is important to remember that public transport in Eastern European cities are sometimes a major source of air pollution: the average age of the bus fleet in Budapest is over 20 years, with old Euro 3 buses still serving." The modernisation of the bus fleet should be a European priority, he concluded.



"The EU should legislate more to reduce emissions at the source for agriculture, shipping and transport. EU air ambient quality legislation and infringement procedures are crucial to ensure actions. Their implementation at the local level is important."

Louise Duprez, Sustainable Mobility Project Manager, Bruxelles Environnement,

highlighted the hidden costs of air pollution, especially the neurologic costs of air pollution. She underlined the importance of sustainable solutions without cars, and the need to better quantify the public health benefits of active mobility such as walking and cycling. "It is also important to take traffic-calming measures: as of next year, the rule in Brussels is going to be a 30 km/h speed limit."

The motor-shift means "to accelerate the renewal of the fleet: Brussels has been a low-emission zone since 2018", with deterrent CCTV control with 350€ per infringement. By 2030, Diesel cars will be banned, and petrol cars by 2035 at the latest. Yet, actions in other sectors are also paramount.

Concluding remarks

Anne Stauffer, Deputy Director, Health and Environment Alliance (HEAL) gave the concluding remarks.

Now air pollution is firmly a priority on the political agenda, but also for people; they want clean air and they are increasingly voicing for that and urging the decision-makers to act."



There are many opportunities coming as part of the Recovery Plan from the COVID-19 pandemic. "Active mobility, with walking and cycling, there are huge opportunities and it is a triple win: it is good for the health, it is good for the air and it is good for the climate."

The European Commission should present a strong proposal of a Zero-pollution plan, with conditionality funds for clean air and measures in favour of climate emergency. It should update clean air standards in line with the recommendations of the World Health Organization (WHO) and the latest scientific evidence.

"We should all encourage our politicians to act to ensure sustainable and affordable public transport"

Find out more

Download the report

["Health costs of air pollution in European cities and the linkage with transport"](#)

Watch the discussion

["Health Costs of Air and Transport Pollution in European Cities"](#)

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