

**POLICY PROPOSAL - 2021 No.1/1**

# **HOW TO GET FRESH AIR? I.**

The Equilibrium Institute's proposals  
for improving air quality in Hungary –  
Heating and building sector



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# Future for Hungary ▶▶

— Equilibrium Institute

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# EXECUTIVE SUMMARY

## 01

An estimated 12,000-13,000 people die each year as a result of air pollution. Our goal is to save these lives and to improve the quality of life for Hungarians, to increase the number of years they get to enjoy in good health. It is also important to point out that air pollution is to a large extent an issue of poverty: We need to ensure that the poor do not become the victims in the struggle for clean air.

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## 02

The most important air pollutants are particulate matters and nitrogen-oxides. Since a large portion of these are generated by residential heating, this should also be one of our main areas of focus in the effort to combat air pollution.

## 03

The production and use in heating of lignite needs to be banned. To support the poor who use solid fuels for heating, we need to provide wood that is produced in sustainable forestry. In the case of households that have access to gas heating but opt instead for heating with solid fuels for financial reasons, the state should temporarily offer some form of support to help them return to gas heating.

## 04

By itself, banning polluting fuels is not enough. The poorest in society need assistance in accessing the right fuels and in funding energy efficient investments, for instance in the form of grants to support the purchase of new boilers.

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## 05

Each year, 3% of the buildings need to undergo deep renovation, which means that the modernisation of the given building needs to result in energy savings of at least 60%.

## 06

Every instrument available should be used to support energy efficiency upgrades, but only if they result in the appropriate levels of energy savings. In addition to increasing the funding for these purposes, we also need innovative forms of funding, above all invoice-based funding and pre-financing for energy-saving investments.

# 1. WHAT IS THE PROBLEM?

Hungary has the fifth-lowest life expectancy at birth in the European Union. The average lifespan of a Hungarian citizen is almost five years shorter than that of the average European citizen. We are also nearly three years behind the average in terms of the expected health years that Hungarians get to enjoy after the age of 65.

**Our bad health indicators** are not the result of some unchangeable Hungarian quality. **The reasons are readily apparent** – they stem from our lifestyle, living patterns, the way our communities are organised and the health hazards in our lives.

**Air pollution** is one of the main causes of public health harms in Hungary. **Hungarians lose roughly two health years** because of air pollution – this is the third worst statistic in the European Union. **At least 12,000-13,000 people die in Hungary every year because of air pollution, while further tens of thousands of people suffer serious health damage.**

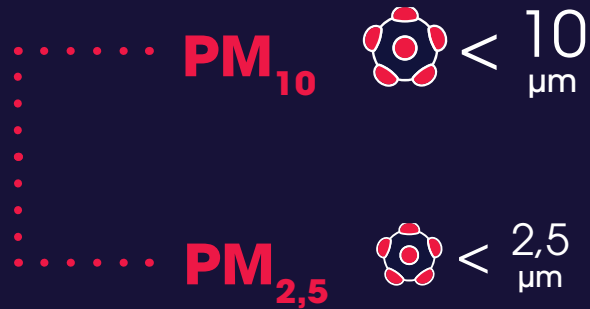
**We could save these people by reducing air pollution,** and as a result citizens' average quality of life, their health condition and life satisfaction would increase massively, not to mention the significant improvements we can expect from the reduced pressure on the healthcare system.

In the following, we will start by identifying the primary sources of air pollution in Hungary, and then we will put forward recommendations on **how we could save over 10,000 Hungarians each year.**

**At least 12,000-13,000 people die in Hungary every year because of air pollution, while further tens of thousands of people suffer serious health damage.**

## 2. THE MAIN SOURCES AND CAUSES OF AIR POLLUTION

### particulate matters



In addition to nitrogen oxides, which mainly stem from transportation, the main sources of air pollution in Hungary are particulate matters, the totality of various solid matters, which are generally categorised as such based on the size of the particles (PM<sub>2,5</sub>, PM<sub>10</sub>).

The finer the particles, the deeper they make it into the human body and the greater the **health damage** they cause (pulmonary, cardiovascular disease, allergy, asthma, lung cancer and developmental disorders). There has been a significant decline in the quantity of PM<sub>2,5</sub> and PM<sub>10</sub> in Hungary in recent years. **Still, both values continue to be far above the relevant limit values for health. In Hungary, the proportion of particulate matter above the limit values for health is among the highest among the EU member states – the situation is worse only in Poland and Bulgaria.**

An overwhelming proportion of particulate matter emissions stem from **residential heating: they are generated by the use of wood and coal for heating.** Industrial emissions, by contrast, play a less prominent role in air pollution than is widely believed. This owes to the air quality management measures taken in the past decade. Agriculture continues to be a major source of emissions. However, when it comes to limiting emissions from agriculture, it would be sufficient to consistently implement the Action Plan outlined in the National Air Pollution Reduction Program.

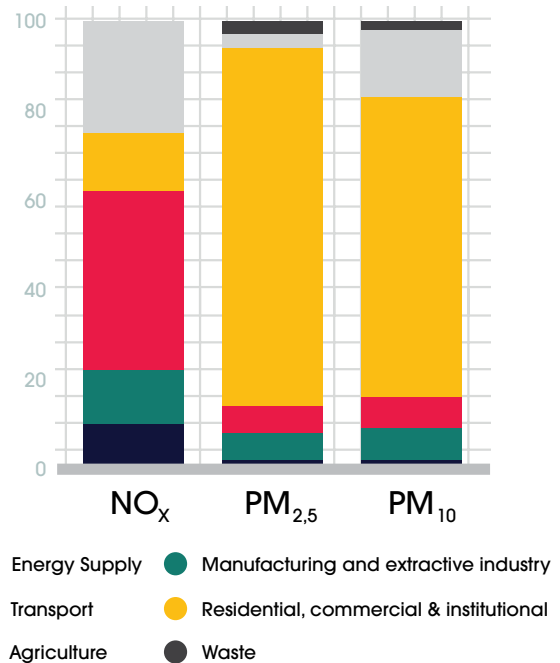


Chart 1: Sources of some air pollutants by sector in Hungary (2018, %).<sup>1</sup>

That's why the most important areas in the fight against air pollution today, apart from transport (which we will address in a separate policy proposal), are heating regulation and modernising our buildings - our proposals are limited to these two areas.

<sup>1</sup> Source: Air pollutant emissions data viewer, Gothenburg Protocol, LRTAP Convention, European Environment Agency, 2020.

## I 2.1. WHAT IS THE PROBLEM WITH THE HEATING SECTOR?

**Close to 40% of homes in Hungary use only firewood or mostly firewood for their heating.** The fuels these households use are often not properly dried and not obtained from legal sources. The problem is further exacerbated by the extremely harmful practices of waste-burning and garden bonfires (based on a statute adopted in the summer of 2020, the latter has been banned since January 2021; but a decree dated December 2020 has delayed the entry into effect of the national ban until the pandemic-related state of emergency remains effective).

**In 3% of households, the residents use coal for heating, predominantly the extraordinarily polluting lignite, which is also very ineffective as a heating fuel.** Due to the surge in the price of firewood, **lignite use has quadrupled in the past decade.** Moreover, users often tend to opt for lignite even in situations when the less polluting but more expensive gas has been introduced into their homes as an alternative heating source.

**As part of the social policy-based heating fuel subsidy, municipalities with fewer than 5,000 residents can apply for funding from the central budget** to assist those residents who heat their homes with solid fuels. As part of

this policy, subsidies are also extended for the purchase of the extremely pollutive lignite. Moreover, **solid fuels are used for heating not only in smaller municipalities but also by households in larger rural towns as well as in the capital** – these households, too, need assistance.

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The two main reasons behind the low quality of fuels are **energy poverty** and **lack of information** about proper heating fuel usage and the harmful health impact of inadequate heating fuels. At the same time, however, the impact of the use of such fuels affects everyone.



## 2.2. WHAT IS THE PROBLEM WITH THE BUILDING SECTOR?

From the perspective of energy efficiency, a significant portion of the Hungarian building stock is outdated (e.g., it is not properly insulated, the heating used is not modern, etc.). In 2018, 12% of nitrogen-oxide emissions, 85% of PM<sub>2,5</sub> emissions and 67% of PM<sub>10</sub> emissions came from this sector. That is why this area offers the best opportunities for reducing the emission of pollutants. The reduction of heating-related emissions can be best attained by increasing the energy efficiency of buildings.

**Replacing boilers, heat insulations, doors and windows, as well as installing solar panels** could substantially improve air quality in Hungary. **This is an expensive process, however, and the costs scare many people away from implementing such upgrades.** Moreover, the subsidy

system for the modernisation of buildings is too fragmented and inefficient.

**The governmental policy of cutting utility costs** has helped many families avoid energy poverty, **which is a positive achievement worth preserving. In its current, indiscriminate form, however** (it applies to both poor and rich), **it is wasteful and harmful.** It is also unfair and ties up too many financial resources that could be put to better use elsewhere. Ultimately, therefore, it jeopardises the safety of the energy supply and stands in the way of modernisation investments that save energy; in fact, it incentivises higher energy consumption.

New buildings already need to comply with the strictest energy efficiency standards (they need to be so-called nearly zero-energy buildings), but the **renovations and expansions of existing buildings are not subject to such rigorous regulations.**

# 3. THE EQUILIBRIUM INSTITUTE'S RECOMMENDATIONS

## I 3.1. HEATING SECTOR

### ▶ LIGNITE MUST BE BANNED!

**Lignite**, which is both highly pollutive and offers low heating values, **must be banned immediately**. Its extraction must be stopped and any targeted welfare subsidies aimed at supporting the purchase of lignite must be ended – the poorest need to be assisted in other ways instead.

### ▶ PUBLIC SUBSIDIES FOR THE PURCHASE OF FIREWOOD SHOULD BE AVAILABLE IN MUNICIPALITIES WITH OVER 5,000 RESIDENTS AS WELL!

The **social assistance for firewood purchases** is a good instrument for reducing heating poverty, but **its limitation to municipalities with 5,000 residents or less must end** – in other words the assistance should not be conditional on the size of the municipality. As a result of the proposed policy change, persons in need who reside in larger municipalities would also have access to this particular form of assistance. Those who use solid fuels should be given access to **properly dried wood from sustainable forestry**.

Simply barring the poor from using fuels that are the worst pollutants is not the right solution – **more resources should be made available for funding energy efficient investments that do not require the beneficiaries to come up with a co-payment**, such as for example non-refundable grants to support replacing old doors and windows or outdated boilers.

### ▶ SOLID FUELS SHOULD NOT BE USED FOR HEATING IN HOMES IN WHICH GAS HAS BEEN INTRODUCED!

In places where heating gas is available **but users nevertheless opt for solid fuels to save money, the return to**

**gas heating should be supported – strictly with temporary measures only**. However, gas too, is a heating method that contributes strongly to pollution, so in the long run it must also be phased out; but it still less polluting than lignite, for example, so it is a lesser evil by some measure.

State institutions must act **systematically (though stricter sanctions and inspections regimes) against the generation of heating energy through burning waste as well as the use of lignite for heating (once the latter has been banned)**.

### ▶ SOCIALLY SENSITIVE AND TARGETED UTILITY COST REDUCTION!

From a social policy perspective, the **utility price cut policy was justified** in that it provides an effective tool against energy poverty – **but only if it is used in a targeted manner, with a consistent application of the principle of need-based assistance**.

### ▶ THE BAN ON GARDEN BONFIRES MUST BE IMPLEMENTED AND APPLIED IMMEDIATELY!

The **ban on the extremely pollutive garden bonfires** must be upheld and needs to be put into effect immediately; any violations must be harshly sanctioned. Citizens need to be informed of alternative and less harmful ways to dispose of green waste. A part of the associated awareness-raising could be the introduction of small incentives, such as **providing residents with free bags for collecting green waste as well as composting bins**.

## I 3.2. BUILDING SECTOR

Air pollution concerns us all, which is why supporting energy modernisation investments is an issue of public interest. We need to reduce co-payments when it comes to energy-saving investments to make their financing easier.

### ▶ THREE PERCENT OF THE HUNGARIAN BUILDING STOCK MUST UNDERGO DEEP RENOVATION EACH YEAR!

In order to ensure that the entire Hungarian building stock becomes carbon neutral by 2050, **every year 3%** (as opposed to the current 0.1%) **of the buildings require deep renovations, that reduce the energy need by at least 60%**. To achieve this, sufficient funds must be channelled into the building sector to ensure that there is enough money available for the **deep renovation of some 100,000-120,000 buildings each year** (depending on the future changes in the building stock).

Whoever is willing to perform such renovations **should be supported in that endeavour – but only if the investment yields a sufficiently high level of efficiency improvements**. In addition to provision of subsidies, **the energy efficiency requirements that apply to the renovation and expansion of existing buildings must become stricter**. Situations in which modernisations are performed either in the wrong order or abandoned midway must be prevented (the so-called “lock-in effect”): To this end, **any subsidies for building upgrades must be conditional on an expert opinion by an engineer** which verifies that the given intervention is sufficiently effective and will be performed in a manner that provides for proper energy efficiency and the right chronological order to realise the energy efficiency targets.

To increase energy efficiency, the **extent of the modernisation subsidies must be adjusted to reflect the attainable energy savings level**. All this **must be funded through the EU’s Emissions Trading System and future operative programs**.

**In addition to increasing the funds available, there is also a need for innovative forms of financing:**

### 01 INVOICE-BASED FUNDING

The public service provider offers to pay upfront either the whole or part of the cost of the residential modernisation, which the beneficiary repays in instalments that are invoiced as part of their monthly utility bill.

**Preferential loans and non-refundable grants must be connected**. A so-called one-stop-shop system must be introduced, the essence of which is that subsidies and credits are administered in one place, which simultaneously reduces administrative overheads and improves efficiency.

Since the problems discussed above are all linked to energy poverty, on the whole it is vital to ensure that the **poor do not become the losers of the efforts to combat air pollution**.

### 02 THIRD-PARTY FINANCING

For the energy efficient modernisation of commercial and public buildings; an energy service company (ESCO) provides pre-financing for the modernisation of commercial and public buildings, and then the consumer repays the price during later years as a fixed proportion of the savings realised thanks to the investment.

**It is vital to ensure that the poor do not become the losers of the efforts to combat air pollution.**

# THE EQUILIBRIUM INSTITUTE'S AIR QUALITY RECOMMENDATIONS

AREA	RECOMMENDATION
<b>HEATING SECTOR</b>	<ul style="list-style-type: none"><li>• <b>Lignite must be banned!</b></li></ul>
	<ul style="list-style-type: none"><li>• <b>Public subsidies for the purchase of firewood should be available in municipalities with over 5,000 residents as well!</b></li></ul>
	<ul style="list-style-type: none"><li>• <b>Solid fuels should not be used for heating in homes in which gas has been introduced!</b></li></ul>
	<ul style="list-style-type: none"><li>• <b>More funding needs to be made available to subsidise non-refundable grants to replace doors, windows and boilers!</b></li></ul>
	<ul style="list-style-type: none"><li>• <b>Stricter sanctions and inspections need to be introduced to combat the use of waste burning for heating purposes and the use of lignite for heating – following the ban of the latter!</b></li></ul>
	<ul style="list-style-type: none"><li>• <b>Socially sensitive and targeted utility cost reduction!</b></li></ul>
	<ul style="list-style-type: none"><li>• <b>The ban on garden bonfires must be implemented and applied immediately!</b></li></ul>

# CONCERNING THE HEATING AND THE BUILDING SECTOR

AREA

RECOMMENDATION

**BUILDING SECTOR**

Three percent of the Hungarian building stock must undergo deep renovation each year!

Innovative pre-financing needs to be used to assist and stimulate the renovation of residential, commercial and public buildings!

The amounts of the subsidies offered by the state for energy-saving investments need to be adjusted to reflect the level of energy savings that can be realised with the given investment!

In addition to the provision of subsidies, the energy requirements that apply to building renovations and expansions must become stricter, too!

The systems for awarding and administering preferential loans and non-refundable grants must be connected with one another!

**HEATING SECTOR AND BUILDING SECTOR**

On the whole, it is important to ensure that the poor do not become the losers of the efforts to combat air pollution!

# ABOUT US

The Equilibrium Institute is Hungary's largest independent, future-oriented policy think tank.

In line with the vision of Hungary's future presented in our publication entitled Hungary 2030, the Equilibrium Institute works on creating a smart and environmentally cleaner nation rooted in a strong community. To this end, we write widely appealing and practical policy proposals that serve the development of our country, and we discuss these jointly with the best domestic and international experts.

Our goal is to ensure that the current and future political, economic, and cultural decision-makers learn about our recommendations, come to agree with them and implement them.

The staff members of the Equilibrium Institute and the members of its Advisory Board are renowned experts in Hungary who are considered to be among the best researchers and analysts in their respective fields. The work of the Institute is helped by more than 30 experts, including economists, sociologists, political scientists, lawyers, urbanists, and climate researchers.

# OUR EXPERTS



## TAMÁS BOROS

*Executive director and co-founder of the Equilibrium Institute*

He serves as a member of the Scientific Council of a leading European think tank, the Brussels-based Foundation for European Progressive Studies (FEPS). He is the co-founder and co-owner of Policy Solutions, a consultancy and research institute. He is a recurring guest on a variety of political talk shows and often comments about public affairs for leading international media. He previously worked for the European Commission and the Hungarian Ministry of Foreign Affairs as an expert on communication and EU affairs. His research focuses on Hungarian and EU political communication and populism.



## GÁBOR FILIPPOV

*Director of Research*

Previously he worked as an expert advisor in the Hungarian National Assembly and then as a political analyst and senior analyst at the Hungarian Progressive Institute. His analyses and op-eds have been published by numerous domestic and international media outlets, and he is frequently invited to talk about politics on television and radio shows. His research focuses on the European and the Hungarian far-right, on the histories of anti-Semitism and Islamophobia and their present-day manifestations, as well as the workings of contemporary authoritarian regimes.



## DÓRA CSERNUS

*Senior Climate and Environmental Policy Expert*

As an expert in environmental issues, she has worked for the Ministry of Environment and Water, the Office of the Parliamentary Commissioner for Future Generations and the Ministry of Public Administration and Justice, representing the Hungarian position in different EU, UN, and OECD fora. She later worked as Director for International Policy Development at Klimapolitika Research and Consultancy Ltd, and as an independent expert in climate and environmental issues. Her main focus is on climate policy, air-quality control and water policy.



## ZSOLT BECSEY

*Senior Economist*

Zsolt Becsey started his career as an economic planner at the Ministry for National Economy, then worked as an economic analyst and later as a modeller at the Central Bank of Hungary. His areas of interest are industrial policy, input-output analysis, macroeconomics, SME policy, and competitiveness.



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