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## Editorial

### Heading to Inaction

*by Andrzej Jagusiewicz, president of EFCA*

The UNECE Convention on Long-range Transboundary Air Pollution (the Air Convention), although not yet global, covers as many as 56 Northern hemisphere countries. They are grouped in four subregions: Western and Central Europe (WCE), South-eastern Europe (SEE), North America and so called EECCA countries formed after the fall of the Soviet Union. The EECCA countries extend geographically from Eastern Europe (EE), through Caucasus (C) and up to Central Asia (CA). They are Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. While WCE countries, mostly the EU members, as well as Canada and the United States follow the Air Convention and its main Protocols (the Gothenburg Protocol, Heavy Metal Protocol and Persistent Organic Pollutant Protocol), the two other subregions are of great concern. SEE countries are the better of the two subregions: all six have ratified the Air Convention, one acceded all Protocols and another one two of them. But as far as EECCA countries are concerned there is a real gap. Only 8 of 12 have ratified the Air Convention, just one has acceded the HM and POP Protocols, but none joined the Gothenburg Protocol, the most important. Some hope may come from the fact that two EECCA countries signed the Association Agreements (AA) with the EU in 2014 and intended to harmonize gradually their national legislation with EU regulations. But in general, it's a kind of compliance desert!

Since the entry into force of the original Protocols (not yet amended), the UNECE and the Convention's organs and bodies made many efforts to encourage the EECCA countries to ratify and strengthen their national capacity, mainly in control techniques and emission inventories. The special Action Plan for Eastern Europe, Caucasus, and Central Asia, aimed at raising the political profile of Convention activities in the region, and encouraging ratification of its Protocols, systematically revised, has been established. Several donor countries, including the Netherlands, Norway, Sweden, and Switzerland have contributed to the overall programme, ensuring additional secretariat resources, allowing on-the-spot consultancy services and travel of EECCA participants to various meetings, respectively. Moreover, in 2010 the Executive Body of the Air Convention (the EB), established a Coordinating Group on promotion of actions towards implementation of the UNECE Air Convention in EECCA countries under the leadership of the Russian Federation. As the Russian Federation record on compliance was no better than the rest of this group, their leadership was not a happy choice and today, with Russian aggression in its war with the Ukraine, the leading position is compromised and ineffective.

All Protocols include so called flexible arrangements to allow in due time their ratification by the EECCA countries. The most example is, or rather was, the provision for a 15-year delay in compliance with the emission standards for existing stationary sources contained in the technical annexes to these instruments, provided they would be ratified by 2020. But it's gone! Instead, we have today only a political willingness of the EECCA countries to join the UN/ECE instruments. Still in 2035 or in a more distant future?

But let's have a look inside the kitchen of the Air Convention and on the menu being currently prepared for reviewing the Gothenburg Protocol at

the incoming session of the Executive Body in December 2022, 42-nd in a series.

First, the Cook, in the case of the Working Group on Strategies and Review (WGSR), has a problem. They have two ingredients, which are to some extent contradictory. On one hand they must prepare the recipe to update or to reamend the Gothenburg Protocol, or in other words to shape it as a stricter instrument and much stricter than the updated instrument of 2012, and on the other they must satisfy the outsiders, mainly from EECCA subregion but also from some SEE countries, so to be tolerant and provide even more flexibility.

The first ingredient is an excellent report entitled "Cost of Inaction"<sup>1</sup> encouraging wider ratification and effective implementation of the protocols to the Convention, mainly the Gothenburg Protocol. It also demonstrates to policymakers not only available and stricter control options but also evaluates the costs of continuing "the business-as-usual-BAU scenario" instead of the better protection of air and ecosystems ensured by more efficient abatement measures. In other words, the cost of inaction on air pollution, which the report defines as the damage to health, ecosystems and economy caused by the present regulatory regime (BAU). Moreover, it compares it with the costs of taking stricter action, assuming that it can be included in the new instrument.

According to the report, for some EECCA countries damage from premature mortality caused by poor air quality ranges from several to dozens of € billions and corresponds from 3 to 12 per cent of the countries' GDPs. Then, health damage from ambient air pollution in SEE subregion raises from €100 billion in 2020 to €116 billion in 2030 (17 per cent increase) under the BAU scenario and has even more impact on their GDPs, ranging from 4 to 15 per cent. In any case, the whole world suffers<sup>2</sup> from bad air quality, which will raise annual costs of premature mortality globally from €2.4 trillion in

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<sup>1</sup> Document ECE/EB.AIR/WG5/2022/4 presented at the 60th session of the WGSR in April 2022

<sup>2</sup> World Health Organization (WHO) Regional Office for Europe, OECD, 2015. Economic cost of the health impact of air pollution in Europe: Clean air, health and wealth

2015 to around €15 trillion–€20 trillion in 2060 according to OECD<sup>3</sup>.

It's worth noting that potential benefits of air pollution reduction strategies, and particularly of additional and stricter control measures, are much higher in EECCA and SEE subregions than in the EU countries<sup>4</sup>. According to the Cost of Inaction report the costs of available control action are lower in those subregions than in the EU, depending on the pollutant, by 40 to 75 per cent. But in general, the benefits are estimated to be approximately 25 times higher than costs of applying the discussed and to be revised measures within the “new” Gothenburg Protocol (re-revised).

The second ingredients are well known since the entry into force of the Gothenburg Protocol as amended on 4 May 2012. They allow, inter alia, any Party to the Convention that became a Party to the present Protocol till 31 December 2019 to declare upon ratification that it will extend any or all the timescales for the application of the limit values up to 5 years for fuels and new mobile sources and as mentioned before even up to 15 years for existing stationary sources after the entry into force of the present Protocol for the Party in question.

And what has happened? None of the countries in the EECCA subregion has benefited from this flexibility arrangement! But today, they ask even for more and suggest simplification or still further flexibilities, such as, for example, a stepwise or annex-by-annex approach to ratification, a bottom-up process for commitments, or explicitly specific conditions for them.

To sum up, the cook has a problem. They must prepare a spicier menu, but some customers ask for not using at all salt and pepper and obviously excluding a chili powder. But to get all seats taken and satisfy the audience the cook must think twice and find a compromise during the fall 2022, because the decision on the reviewed Gothenburg Protocol should be taken by the EB at its incoming session in Geneva just before the Christmas.

However, in my view, the Parties asking for more flexibility and for more distant timescales in compliance of the present and additional obligations under the Air Convention, are asking simply for “a pure inaction” despite this excellent report on “Cost of Inaction”. If they are satisfied in their demands then the consequent decision by the EB will result in millions more premature deaths in the EECCA subregion and to a great extent undermine the efforts of other subregions, mainly of Western and Central Europe and North America. Instead, I would suggest strongly to the EECCA countries as a first commitment to follow the obligations from the GP as amended in 2012 and an active and wide participation in the work of the Task Force on International Cooperation on Air Pollution, led by Sweden and the UK (see below), just starting its activities, and becoming a disciplined student at the e-learning Academy on the Air Convention launched recently by the secretariat.

Transboundary air pollution doesn't know borders!

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## News from EFCA

### EFCA Board Meeting 2022

*by Thomas Reichert, past president of EFCA*

The EFCA Board Meeting 2022 took place in the Fraunhofer Office, Brussels. Five associations were represented in person. Focus was given to the EFCA roadmap for 2023. It was decided to spend more budget and increase the efforts in membership development.



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<sup>3</sup> OECD, 2016. The Economic Consequences of Outdoor Air Pollution – Technical Report  
<http://dx.doi.org/10.1787/9789264257474-en>

<sup>4</sup> Amann, M. et al., 2011. An updated set of scenarios of cost-effective emission reductions for the revision of the Gothenburg Protocol, CIAM report 4/2011

## EFCA Symposium on Ultra-fine Particles

by John Murlis, vice president of EFCA

The 9th EFCA Symposium on Ultra-fine Particles was held in person in Brussels on 5th and 6th July.

The Symposium heard updated and new contributions to the evidence base for sources, characterisation and impacts of UfP in the ambient air. It is clearly strengthening and, in the view of EFCA, is becoming sufficiently robust to support the development of policies to reduce ambient levels.

Professor Barbara Maher, University of Lancaster, who spoke on this topic at EPUK's 2019 Conference (Read here: <https://www.environmental-protection.org.uk/resource/exposure-to-metal-rich-ultrafine-particulate-air-pollution-a-possible-risk-factor-for-neurodegenerative-disease-professor-barbara-maher-centre-for-environmental-magnetism-palaeomagnetism-lanc/>) gave a powerful update on health impacts of iron-rich particles, extending her analysis from presence in the brain to impacts on heart function, with descriptions of the mechanisms of harms as well as epidemiological evidence. The concern, she said, was that such particles would have possible links with neurodegenerative diseases such as Alzheimer's disease.

Dr Brian Stacey, of EPUK-member Ricardo Energy and Environment, described detailed measurements of UfP from aircraft taken at Heathrow Airport, showing very high concentrations, exceeding WHO guidance inside the airport perimeter. Population exposure assessment, he said, were needed to quantify human impacts.

Professor Armin Hansel, University of Innsbruck, described studies of roadside UfP taken at high time-resolution and showing how fluctuations in concentrations give short term exposure at far greater level than the long-term average. Because such strong pulses of UfP occurred at junctions they would have a strong effect on the acute response to pedestrians and cyclists.

New research, presented by Dr Stephanie Wright, Imperial College London, shows emerging threats from microplastic pollution, arising from the degradation of plastic products. Such microplastics spread easily in the air and are breathable. Impacts arising from both chemical and physical properties are possible and it was now imperative to gather baseline information on a global scale. In a specific

example, the Karlsruhe Institute of Technology presented a study of end-of-life products containing carbon fibre which, it was noted, could form micro fibres of a similar physical form to asbestos filaments. As the amount of the material in the environment is expected to increase as, for example, early generations of wind-turbine blades are decommissioned, it would be important to study health impacts and to develop disposal



Panel discussion at EFCA Symposium on UfP (source: EFCA)

In a panel discussion, chaired by Karl-Friedrich Ziegahn (KIT), EFCA President Dr Andrzej Jagusiewicz said that the evidence base for UfP impacts was now strong and would support policy development. EFCA members present agreed to form a Task Force to develop the elements of a policy response.

Since the Symposium, a mandate for the Task Force has been prepared in draft and will be posted on the EFCA website. The mandate calls on the Task Force to:

- review the state of knowledge about UfPs in terms of their emission sources, characteristics, ambient concentrations, health impacts and measures to reduce them
- evaluate the effectiveness of current control measures in reducing impacts
- make conclusions and recommendations for strengthening current measures and where new measures are needed.

Expected audiences include WHO, EU and UNECE. As EPUK will be consulted on the work, there is an opportunity for us to consider the UK response.

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## Farewell words to Mr. Tiziano Pignatelli leaving co-chairmanship of TFTEI

by Andrzej Jagusiewicz, president of EFCA

Greetings from the EFCA President to Tiziano Pignatelli from Italy, who co-chaired the last

Meeting of TEFTEI together with Jean- Guy BARTAIRE:

“Good afternoon, everybody, but in first instance good afternoon Tiz. I am so sorry not to be present in Rome at your annual TEFTEI meeting 2022 due to conflicting dates.

Dear Tiz, we know each other longer than the existence of EGTEI and TEFTEI combined that’s why I feel today as a very privileged person and very close collaborator you. As such, I know that this meeting is your last one in the capacity of Co-chair of TEFTEI so allow me to address to you a few rewarding sentences.

First as a Godfather of EGTEI (you remember that I served for many years as a secretary of the Working Group on Technology transformed at the EB session marking 20 th anniversary of the Air Convention in Gothenburg in 1998) born in parallel with the Gothenburg Protocol, then as the Polish Government representative to many Convention’s organs, both EGTEI and TEFTEI included, next as a president of EFCA till now and finally regardless the hat I wore as your friend and unconditional admirer. During all these years you have faced many challenging topics and encountered a lot of difficult problems but always you have found the proper and acceptable solutions to all, regardless from what subregion of the UNECE were the given Party or representative. Therefore, I do hope that you will also find the right way to shape the new technical regime of the revised Gothenburg Protocol without forgetting to take on board ships and shipping.

As a friend I have always appreciated your charm, soft personality, convincing Roman English and deep knowledge as well as your management skills. Through your involvement and powerful efforts, you have provided to our Transboundary Air Protection Family a lot of good and satisfaction. Today we all breathe a better air.

To finish may I thank you heart fully and more warmly than Santorini’s temperature for all these years we have cooperated and enjoyed together and wish you an attractive future. Needless to add that with your many passions just to mention travelling and photographing, you will be not only

busy as your successor but also happy. So all the best Tiz.

Last but not least I still count on enjoying with you a Lavazza coffee in the Palais of Nations in coming December and promise to be there.”

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## News from EFCA Members



### **EPS: New project aims to unlock the harms caused by air pollution during pregnancy and a child’s early years**

*by John Bynorth, Policy and Communications Officer; Environmental Protection Scotland (EPS)*

There is a growing body of evidence about the harmful effects of outdoor air pollution on the unborn child. Recent studies in countries as diverse as Iran, Mexico and Belgium suggest that pollutants, from Black Carbon to microscopic nano-particles, can pass through the placenta to the foetus and potentially harm the unborn child’s neurodevelopment and other factors such as birth weight.

But the majority of these studies have concentrated on the effects of ambient air pollution such as from vehicles, industrial sites and transboundary impacts. Relatively little is known about the effects of indoor pollutions on mothers, their unborn children and then these children.

A £3.4 million four-year UK-wide collaboration between a number of different education institutions is developing research data to understand fully the health impacts of these pollution sources on parents and their children from pregnancy through various stages of their early years in indoor and outdoor environments. RESPIRE (Relating Environment-use Scenarios in Pregnancy/Infanthood and Resulting Airborne Material Exposes to Child Health Outcomes) is funded by the National Environment Research Council (NERC) and is co-led by Professor Cathy

Thornton at Swansea University, in collaboration with the University of Edinburgh, Imperial College London, Queen Mary University of London, the University of Manchester, Queen's University Belfast and with the support of Public Health England.

Professor Thornton, Principal Investigator at RESPIRE and a professor in human immunology who studies the immunological adaptation in pregnancy and the antenatal determinants of immune health in childhood, said: "There has been lots of information coming out about the impact of air pollution on pregnant women. There is lots of data about the relationship between air pollution and premature birth and growth restrictions meaning that babies are smaller than they should be when they are born full-term. There is also a wealth of data to suggest that there are not just immune effects on pregnancy, but longer-term impacts on the health of the children."

Professor Thornton, the project co-lead with Swansea University colleague Professor Martin Clift, suggested a lack of availability of data is hampers an understanding of child health and long-term health outcomes in children pre and post-birth. She said this includes the progress of a child's neuro and immune systems, respiratory tract and of their cardiovascular system.

One of RESPIRE's strengths is its ability to work collaboratively on research data provided by project partners from the devolved regions of the United Kingdom. These regions have separate air quality, health and education policies from the UK Government. "One thing we were keen to see is representation from every home nation. If we are going to have any impact, we needed Wales, Scotland and Northern Ireland on board."

One example of this collaboration is the involvement of Dr Mark Miller, a senior research fellow at the Centre for Cardiovascular Science at the University of Edinburgh, who also sits on the UK Government's independent Committee on the Medical Effects of Air Pollutants (COMEAP). His work involved research using animal models that showed how particles from diesel exhaust emissions were more likely to make people develop

cardiovascular disease and the use of harmless gold nano-particles – to stimulate how particulates can enter the blood stream and reach the heart and other vital organs.

The RESPIRE project will allow an in-depth examination of a range of human cell structures, such as nasal cells, blood cells and cell samples taken from placentas so as to as accurately as possible, capture the impact of particles, including on the lungs, and build a 'complete model of a human being and their cells,' said Dr Miller, in a presentation to Environmental Protection Scotland's Air Quality Expert Advisory Group last year.

Other key contributions include Queen's University Belfast's data expertise via Health Data Research UK which allowed for data to be collated about women from the various cohorts during pregnancy and as their child grows up. Professor Thornton added: "It is all being routinely collected and linked back to our exposure analysis. There is replication in some parts. For example, the birth cohort will run across (the universities) in Manchester-Swansea-London-Belfast. From exposure to airborne materials, we have to work out what the consequences are of that response that a mother might transfer to the placenta and onto the foetus. Our study is to understand why this happens.

"Historically, most of the research has been about outdoor air pollution, for example, traffic or industry pollution. Some of the studies, the most recent one that involved pre-term birth, started to look at indoor environment. There is a lot of interest in that interface between outdoor and indoor air pollution so we are a combination of both and will look at the mechanisms that underpins the relationship. Why does that exposure to the mother cause a particular response; Can we find a way to measure how she responded, through different interventions and integrate indoor/outdoor pollution effects?"

With so many potentially carcinogenic pollutants in the home, from Volatile Organic Compounds (VOCs) to biological components, the consortium will attempt to understand these complex pollution sources and their impacts.

She replied: “There are a lot of challenges on that front. For example, what happens if you measure (air pollution) exposure at home and someone has just burnt the toast! We are interested in how pregnant women might respond to these things differently. The inflammatory responses of women change when they are pregnant, so maybe we can induce the worst response biologically and then tease apart this complex environmental chemistry.” Professor Thornton said that ‘particulates are still going to be top of the pile,’ of pollutants that will come under the consortium’s microscope, but there will also be NO<sub>x</sub> and VOCs which she said ‘comes back to those cleaning products and their use in soft home furnishings.’ But the study is also examining the type of molecules that come from food, such as fatty acids that are used in the frying of bacon.

The RESPIRE project aimed to ensure that its work represented a range of different demographics to ensure inclusivity. She added: “We will submit test tube samples under laboratory conditions from women with different Body Mass Index (BMI), from different ethnic groups and from different social demographic geographical areas.

“We engineered right from the beginning that we would cover health inequalities, social deprivation, different housing stocks and household arrangements and differences as to where you actually live in relation to the ambient pollution that you are being exposed to.”

Four years is a long time for people to participate in a study and their lives might change during that period. Professor Thornton said the cohorts will consent to their data being used over a period of time and a family’s involvement in the study will last about one year – with the rest of the information over the period being passed by GPs electronically.

She added: “We will have only one interaction with the case studies after their baby is born. The rest of the information comes from the GP. When they go to see a GP, for example, to be prescribed medicine, or diagnosed with a particular illness or condition, this information is routinely collected and put into our data banks with their consent.

“The study represents about one year’s commitment by each family, from early pregnancy, through the pregnancy and then for six to nine months after a birth. After that, they don’t have to do anything and this will happen without them knowing. All of that data is being collected and means we can have access to those children’s records. We can let the kids grow up and let the mums and dads get a little older, and keep revisiting them electronically, rather than face to face.”

Professor Thornton said she had recently attended an air quality conference where the issue of how to regulate indoor air pollutants was discussed. She asked: “People will say ‘it is up to me whether I cook with olive oil or rape seed oil?’ If you could identify the particularly harmful chemicals, then you can regulate it out of the products. There are so many different things in the indoor environment that contribute to poor air quality, but if you identify a particular carcinogenic element of a cleaning product or bathroom sprays, you could try to change the chemical formulation.”

Professor Thornton said RESPIRE’s work could improve public messaging around indoor air quality in the UK. She added: “We do not want to scare pregnant women. We want to say to them: ‘You should think about cutting this product out of your domestic cleaning routine?’ Or we could tell them to fry their food on the back of the stove, instead of the front; or tell them to use olive oil raw, but not for cooking. They are really simple things and not too onerous.”

RESPIRE’s first cohort will start in January 2023. A positive way for Professor Thornton to start the 20th anniversary of her career at Swansea University!

EPS are a partner in the RESPIRE project and the co-chair of the Air Quality Expert Advisory Group. Jennifer Simpson, attended the first meeting in June.

## John Bynorth has left EPS

*by EFCA secretariat*

John Bynorth, EPS, informed EFCA that he has now left EPS to join the UK's Confederation of British Industry (CBI) in a senior communications role. He thanks everyone at EFCA for their support and sends his best wishes for the future.

EFCA regrets to lose with him a long-time deserving partner and wishes him all the best for his future path.



## EPUK National Conference 19th October

*by John Murlis, vice president of EFCA*

Our National Conference this year gave us an opportunity to hear an excellent set of presentation on current environmental concerns, to question speakers and to comment on issues they raised.

Our keynote speaker, Dame Glenys Stacey, the Chair of the Office of Environmental Protection, gave a talk on how the OEP works and its immediate priorities. She explained that OEP derives from the 2021 Environment Act, which remains key to the government achieving its ambitions for the environment. The act, she said, has four cornerstones: the Environmental Principles Policy Statement, Environmental Targets, the Environment Improvement Plan and, as its fourth cornerstone, the OEP. The OEP was there to hold Government to account for its performance in delivering environmental quality through sufficiently ambitious targets and effective implementation of its policies. She emphasised the importance of effective implementation which, she said was a regular message and common thread linking the OEP's advice to government.

One of the OEP's statutory duties was to give Government advice on any potential changes to environmental law. The OEP understood that new legislation on the laws will require more than 500 environmental laws to be reviewed with

replacement legislation developed and implemented where necessary. She questioned whether this could be done or done in a way that enhances environmental protection by the target date of December 2030. The OEP, Dame Glenys said would be vigilant for associated risk but also for opportunities in this change to environmental law. She noted that there were also risks associated with the current economic pressures and welcomed assurances from Government of continued commitment to environmental ambitions. However, welcome reassurances must, she said, be followed by action that deliver on the Government's commitments. OEP had been influential so far and would continue to steer a straight course in achieving their mission.

The text of Dame Glenys talk is to be found at:

<https://www.theoep.org.uk/news/oep-chair-dame-glenys-staceys-keynote-speech-epuk-conference>

The full set of presentations made at Conference are now on the EPUK website.

Delegates at Conference saw exhibits of environmental monitoring technology from Enviro Technology Services Ltd., Acoem and Cambustion. Riversimple showed their hydrogen fuelled car to delegates in the Warwick Conference Centre carpark.



*Delegates at the EPUK National Conference in October viewing the Riversimple RASA hydrogen-fueled car (source EPUK)*

## UNECE (United Nations Economic Commission for Europe) Forum on International Cooperation on Air Pollution (FICAP)

by John Murlis, vice president of EFCA

EPUK represented EFCA at a meeting co-sponsored by Defra and the Government Offices of Sweden to consider the form and function of FICAP on 11th October in Bristol.

The purpose of FICAP is to provide a forum for international exchange of information and mutual learning on both the scientific/technical and policy levels, to help address the threat to human health and ecosystems from air pollution.

It is intended to be a repository for technical information and a convenor of countries and organizations with the goal of increased international cooperation on addressing air pollution.

Following the Bristol meeting the co-sponsors will publish terms of reference for the first meeting of the Forum, planned for March 2023 in Goteborg, Sweden. Participation of civil society bodies such as EPUK will be warmly welcomed and, as the meeting is to held exclusively in person, there will be some financial support for those attending.

Once the full report of the Bristol meeting is available it will be available on the EPUK website.



by Andrzej Jagusiewicz, president of EFCA

### 25th Anniversary of PIGE

On 21st of September 2022, PIGE celebrated its 25th anniversary. The occasional conference started with the opening speech by its President Krzysztof Zareba tracing the best achievements but also some failures of the Chamber. He also mentioned the mutual cooperation with EFCA and pointed out to the present challenges, including international agenda. The most active members of the Chamber

were given on that occasion diplomas and nice bronze medals. Among the rewarded persons was also EFCA President.



Bestowal of medals at the 25th anniversary of PIGE (source: PIGE)



### VDI: New and reviewed European Standards

by Rudolf Neuroth, VDI

New European and International standards

- **prEN 14662-1:2022**, Ambient air quality – Standard method for measurement of benzene concentrations – Part 1: Pumped sampling followed by thermal desorption and gas chromatography
- **FprEN 14884:2022**, Stationary source emissions – Determination of total mercury – Automated measuring systems
- **prEN 15267-3:2022**, Air quality – Assessment of air quality monitoring equipment – Part 3: Performance criteria and test procedures for stationary automated measuring systems for continuous monitoring of emissions from stationary sources
- **prEN 15267-4:2022**, Air quality – Assessment of air quality monitoring equipment – Part 4: Performance criteria and test procedures for portable automated measuring systems for periodic measurements of emissions from stationary sources

## Reviewed Standards:

- **EN 14791:2017**, *Stationary source emissions – Determination of mass concentration of sulphur oxides – Standard reference method (confirmed)*
- **EN 14792:2017**, *Stationary source emissions – Determination of mass concentration of nitrogen oxides – Standard reference method: chemiluminescence (confirmed)*
- **EN 14793:2017**, *Stationary source emissions – Demonstration of equivalence of an alternative method with a reference method (confirmed)*
- **EN 15058:2017**, *Stationary source emissions – Determination of the mass concentration of carbon monoxide – Standard reference method: non-dispersive infrared spectrometry (confirmed)*
- **ISO 12219-6:2017**, *Interior air of road vehicles – Part 6: Method for the determination of the emissions of semi-volatile organic compounds from vehicle interior parts and materials at higher temperature – Small chamber method (confirmed)*
- **ISO 12219-7:2017**, *Interior air of road vehicles – Part 7: Odour determination in interior air of road vehicles and test chamber air of trim components by olfactory measurements (confirmed)*
- **ISO 16000-4:2011**, *Indoor air – Part 4: Determination of formaldehyde – Diffusive sampling method (confirmed)*

## News about Air Quality

### The European Commission and the Swiss State Secretariat for Education, Research and Innovation award funding for an €8.2 million project on cleaner urban air

Source:

<https://doi.org/10.1016/j.envres.2021.110754>

#### [AeroSolfd Press Release No 1](#)

In May 2022, the innovation project AeroSolfd started with a kick-off event in Ludwigsburg, Germany. The AeroSolfd consortium – led by MANN+HUMMEL – will deliver affordable, adaptable, and environmentally friendly retrofit solutions to reduce tailpipe and brake emissions and pollution in (semi-) closed environments. This will allow a quick transition towards cleaner mobility and a healthier environment.



AeroSolfd project partners at the kick-off meeting in the Technology Centre of project coordinator MANN+HUMMEL in Ludwigsburg, Germany (Picture: AeroSolfd project consortium)

### Urgent need to reduce tailpipe emissions and brake wear

Based on the latest Harvard's epidemiologic research data (2021), globally 10.2 million people die prematurely only due to traffic-generated emissions per year<sup>5</sup>. For the next decade, the existing vehicle fleet will continue emitting fine particles and ultrafine particles, as well as gaseous toxic compounds such as nitrogen oxide (NOx) until a full transition to zero-exhaust-emission vehicles takes place.

While retrofit filters have been installed for diesel particle emissions in the past 20 years, the worldwide gasoline fleet segment prior to 2018

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<sup>5</sup> **Karn Vohra et al.:** *Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem*, <https://doi.org/10.1016/j.envres.2021.110754>

currently drives without any filtering technology (EURO 6c and earlier), even with the very high toxicity of gasoline particles. Also, in the EU after 2018 filters are only installed in direct injection engines. In contrast to exhaust emissions, toxic particles from brakes, tyres and rail-wheel contact have not yet been limited by legislation. These particles – especially in semi-open and closed environments like bus stops, tunnels, and train and metro stations – contribute to poor local air, soil, and water quality, severely impacting human health. To limit these detrimental effects, immediate retrofit solutions to reduce tailpipe and brake wear emissions must be urgently developed and introduced to the market by 2025.

#### **Smooth transition towards cleaner mobility through quick deployment of low-cost retrofit solutions**

AeroSolfd is a fast-track innovation action established to tackle these challenges. A consortium - composed of large industrial players, renowned scientific institutes and lighthouse demo sites from eight European countries - has joined forces to realise the quick deployment of three low-cost retrofit solutions so that people in Europe and beyond can benefit already by 2025 from cleaner mobility and a healthier environment.

“Retrofits are key enabling technologies during the transition to zero-exhaust vehicles by electrification and until reduced non-exhaust measures are implemented. Even beyond, brake and closed environment retrofits will continue to play an important role in the electrified road and rail fleet. Quick wins in the reduction of the overall health and environmental impact of the existing fleets can be realised by using our three retrofits for tailpipe, brake and (semi-) closed environments”, explained Dr. Martin Lehmann, Principal Expert Research Network and Public Funding at MANN+HUMMEL and coordinator of the AeroSolfd project. In gasoline combustion engines, fine particles and toxic secondary emissions will be reduced by an innovative Gasoline Particle Filter and NOx exhaust emissions would be minimised by replacing the three-way-catalyst with new

equipment. In addition, brake particles of long-lived road transport assets will be reduced by an advanced brake dust particle filter and fine particles in closed environments (bus stops, tunnels, metro stations) using a specially designed and enhanced stationary air purifier.

AeroSolfd will also put special focus on increasing public and political awareness of the detrimental impact of tailpipe and brake emissions on the environment and people’s health. “AeroSolfd will provide policymakers with recommendations on how to develop incentive schemes for the quick market uptake of these retrofit technologies by 2025”, added Lars Larsen, president of VERT Association.

During the three-year innovation project, the effectiveness of AeroSolfd’s solutions will be demonstrated in the field and during real driving conditions in lighthouse demo sites across Europe: Valladolid (Spain), Sofia (Bulgaria), Ancona and Fermo (Italy), Lisbon (Portugal), Rovaniemi (Finland), Haifa (Israel), and Biel (Switzerland). “This will enable us to bring these technologies to the market by 2025 and to move towards a cleaner and healthier environment in Europe” added Thomas Wolf, Innovation Manager at the ZF Group.

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## Calendar



VDI expert forum on VDI-MT 3800 "Determination of the expenses for measures for operational environmental protection", operated by WF

February 7<sup>th</sup>, 2023; Düsseldorf, Germany

VDI Expert Forum on VDI 4250, sheets 1 to 3 "Environmental medical evaluation of bioaerosol immissions", operated by WF

April-20<sup>th</sup> 2023; Düsseldorf, Germany

[www.vdi.de/krdl](http://www.vdi.de/krdl) and [www.vdi.de/veranstaltungen](http://www.vdi.de/veranstaltungen)



Convention on Long-range Transboundary Air Pollution

**Working Group on Strategies and Review, 61<sup>st</sup> session**

April 11<sup>th</sup> - 14<sup>th</sup>, 2023; Geneva, Switzerland

[Working Group on Strategies and Review, sixty-first session | UNECE](#)



13<sup>th</sup> Croatian Scientific and Professional Conference with international participation "Air Protection 2023"

September 2023, Croatia.

More information soon at: <http://huzz.imi.hr/en/>



National Meeting on Air Pollutant and GHG measurements

May 9<sup>th</sup>-10<sup>th</sup>, 2023

National Congress on Air Pollution Prevention and Climate Issues

August 22<sup>th</sup> -23<sup>th</sup>, 2023, Lappeenranta, Finland

Info in Finnish: [ilmansuojelupäivät – Ilmansuojeluyhdistys ry \(isy.fi\)](http://ilmansuojelupäivät-ilmansuojeluyhdistys.fi)



NCGG9

**Ninth International Symposium on Non-CO2 Greenhouse Gases**

Identify game changers and verify impact

June 21-23, 2023, Amsterdam, The Netherlands

<https://www.ncgg.info/>



Announcement:

2<sup>nd</sup> World Conference on Climate Change & Sustainability

October 16<sup>th</sup>, 2023; Rome, Italy

[Climate Change Conferences Rome Europe - Climate Week 2023 \(thepeopleevents.com\)](https://thepeopleevents.com)

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