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Editorial

EFCA is knocking to WHO

by Andrzej Jagusiewicz, president of EFCA

When co-opening the 7th Symposium on Ultrafine Particles-Air Quality and Climate in Brussels on 15 th of May 2019 in the company of the Honorable Representative of the State of Baden-Württemberg, the GUS President and the Symposium Chairman, I said: „To me 7 is a lucky number and I do hope that it will lead us to make a next step in the development of a fraction-by-fraction approach to particulate matter monitoring standards. Shortly, we will need not only a new mass-based metric for smallest particles, but we also need to know their chemical composition better. And last but not least the new standard may refer to a number of particles contained in the given mass. Because the number matters!



During the past symposia we strengthened evidence that UfPs express both the impact of human activities on air quality and on climate, taking into account Non CO₂ Greenhouse forcers and we will improve on this evidence during the Symposium. But time is pressing and we are witnessing increasing applications of man-made nanomaterials, which add more and more to the problem. If we don't know yet all aspects then

don't forget that the precautionary principle is still valid".

So what do we know better now and what we still need miss to launch a policy proposal? First of all, UfPs have gone global; this excellent event was a truly global gathering of speakers and participants not only from the EU, but also from Australia, Republic of Korea, Malaysia, Mexico and Singapore. It seems quite logical as UFPs are a very good indicator of impact on both air quality and climate change, at all scales from local to global. Second, a wide range of man-made sources emits primary UfPs, mainly related to combustion and manufacturing; at the same time use of nanomaterials in products is gaining ground. But UfPs are also present as secondary pollutants formed from photochemical reactions of primary emissions, including short-lived climate pollutants. They worsen climate through direct forcing and play a great role in cloud formation. Regardless of their origin and chemical nature, UfPs make up little of the mass in measurements of PM (PM10, PM2.5), but have high number density and high surface area.

Therefore, the Symposium has made a step forward by concluding, inter alia, that there are considerable differences in the toxic potency of UfPs from various sources when using mass as unifying metric, that the toxic potency of UfPs when using mass as a dose descriptor differs from PM 2,5 often showing that UfPs cause greater effect, particularly to the lung and finally that increased understanding of the importance of chemical composition for toxicological effects of UfPs and the use of surface area or particulate number (PN) rather than mass as dose metric may possibly shed more light on the issue.

Could we then state that using Particulate Number Concentration (PNC) as a predictor for health impact may be preferred above mass and surface areas? Certainly YES, but this is still a long way to go. But today we won't be walking alone. So let's try to pave the way forward.

The Symposium decided to include its findings in the „White Paper“ under final preparation by the WHO Guidelines Development Group, aimed at

revising the WHO Guidelines on Air Quality Standards. Moreover, EFCA declared its readiness to join the process and established a working platform with the Group's leader and WHO Office in Bonn. The process may be painful and lengthy as Black carbon, UfP par excellence, remains in the WHO waiting room.

Shortly after the Symposium, the President of EFCA shared the Symposium findings with the Air Convention community in Geneva and advocated the inclusion of the UFP issue in the event on cooperation for clean air globally at the incoming session of Executive Body in December 2019. Its Long-term Strategy seems to be very receptive for UfPs.

The topic of UfP-integrated action for cleaner air and climate protection has its place on the agenda of the World Clean Air Congress to be held in Istanbul from 23 to 27 of September 2019. EFCA together with the leader of the WHO Guidelines Development Group, professor Lidia Morawska from Australia, will familiarise the plenary with the topic and EFCA will also have its special event devoted to the issue - a perfect occasion to refine the policy proposal on UfP standardisation.



But in the meantime, we can't sleep whilst awaiting the outcome. The Symposium clearly stated that reducing PM, particularly PM 2,5 reduces airborne UfPs. Many sources are already subject to emission control, but current measures can be strengthened and made more effective. Particularly with respect to the most aggressive sources like aviation, shipping and residential heating not forgetting sulphur content in fuel.

Of course, efficiency requires a ONE ATMOSPHERE APPROACH!

News from EFCA

In memoriam Giuseppe Zerbo

by Giuseppe Fumarola, president of Co SRIA/ATI

Joop van Ham, treasurer EFCA

Richard Mills, secretary-general IUAPPA

On 21st June of the present year, professor Giuseppe Zerbo passed away at the age of 95.



Born in Bronte (Sicily), he received his degree in Chemistry at the University of Catania (1950) where he also started his career. Some years later he was appointed there as a Professor of Commodity

Science. His main interest was petroleum technology and chemistry. From the sixties it brought him into contact with environmental issues, in particular air pollution.

At the time, the largest Italian industrial area was located on Sicily. As a consultant to a number of companies he advised them how to address the existing problems. In 1974 Zerbo was made responsible for the first extensive air monitoring network in Italy, covering the entire area affected by industrial activities; for this purpose a special *Consortium of Industries* was founded and he was appointed as President.

Professor Zerbo also joined the Italian Air Pollution Study Committee, within the Italian *Thermotechnical Association (CSIA/ATI)* which dated from the early '70s. Later he became its Vice-President, and in 1996, when its founder, Prof. Ferraiolo, suddenly passed away, took the Presidency.

At the time, CSIA was an active member and supporter of *The Union of Air Pollution Prevention and Environmental Protection Associations (IUAPPA)*. This stimulated international exchange and Zerbo assured to continue this with active contributions and support. As a member of the International Board he was held in high regard and warm affection by colleagues from around the world.

In 1989, at the 8th IUAPPA World Clean Air Congress in The Hague, Professor Zerbo welcomed enthusiastically the proposal of Prof. Louis Clarenburg, to consider the foundation of a regional federation in Europe. When time was ripe (1996) CSIA was one of the five founding members of EFCA.

When Prof. Giuseppe Fumarola was elected as EFCA's 2nd president Zerbo continued to give great support to EFCA. He was able to organize several fruitful congresses and meetings in Italy, in particular the Workshop "Towards Clean Air for Europe: A Challenge", held in Syracuse in 2005, in cooperation with the EU Joint Research Centre of Ispra. The focus of the workshop was at the Thematic Strategy on Air Pollution that then was being finalised by the EU Commission. At that occasion Prof. Zerbo raised the question of the contribution of natural sources to air quality and long-range transport. In Sicily this contribution is particularly evident, due to desert storms, volcano ash and marine aerosols which raised local levels of air pollution. Some years later the point was incorporated in the EU Directive.

More than anything, those who have had the chance to know Professor Zerbo and share time with him will remember an exceptionally courteous, committed and modest man, who preferred to be known to everyone simply as Beppe. He will be remembered by all his friends for his loyalty and kindness.

Clean Air Day 2019

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

Thursday, June 20th, marked the culmination of several months of effort by people and organisations who staged Clean Air Day events in Scotland.

Over 100 events were organised with hundreds of school pupils, NHS staff, cyclists, walkers and MPs and MSPs participating in different campaigns that linked into the main aim to encourage behaviour change in relation to air quality.

The aim of the UK-wide event, which is now in its third year, is to encourage people to consider an individual action to cut air pollution.

In particular, road transport was targeted as they form the bulk of emissions.

In Scotland, over 65% of vehicle journeys are for trips of 3.1 miles or less and a key Clean Air Day message was to encourage people to switch to other, less polluting forms of transport such as cycling, walking or considering the purchase of an electric vehicle.

It came that a further £20 million of funding for electric vehicle charge-points and electric charging hubs was announced by the Scottish Government. Clean Air Day was coordinated by Environmental Protection Scotland (EPS) on behalf of the government's Cleaner Air For Scotland (CAFS) strategy. The cabinet secretaries for the environment, Roseanna Cunningham, and transport, Michael Mathieson, participated in high-profile events that were linked to Clean Air Day. This year climate change has been never been higher on the political agenda.

Scotland's First Minister Nicola Sturgeon recently declared a 'climate emergency' following a series of school 'strikes' by Scottish children who were inspired by the teenager Greta Thunberg's efforts to convince governments around the world to do more on climate change.

The 'Extinction Rebellion' protests in London and other parts of the UK, including Edinburgh, achieved public prominence because of the disruption and mass arrests that they brought. And a new Climate Change Bill is currently going through the Scottish Parliament which will commit Scotland to achieving 'net-zero' greenhouse gas emissions by 2045.

It was against this background that Clean Air Day achieved such a high profile in 2019.

Two of Scotland's four cities involved in the creation of Low Emission Zones (LEZ) staged major free public events on Clean Air Day this year.

In Glasgow, George Square hosted a public event that was launched by Ms Cunningham and children from a city centre school, Garnetbank Primary, who

have been learning how they can improve air quality.



The day-long event featured music, DJ, and dancing and plenty of noise as children from several schools waved placards and danced and sang with messages aimed at people to reconsider their polluting behaviour.

Glasgow became the first city in Scotland to introduce a LEZ in December 2018. Although it applies only to buses, the zone will see fines for people who drive the most polluting vehicles into the city from the end of 2022.

In Aberdeen, which is due to launch its own LEZ next year, 'walking trees' entertained the crowds outside a busy shopping centre and there were displays of hydrogen vehicles, information about local active travel networks and air quality monitoring.

Aberdeen's event also began with a visit by school children from the city centre Hanover Street primary school which had been involved in environmental activism, including tree planting and cleaning up litter.

Members of the public at both events made pledges and found out more about efforts to improve air quality, including about low emission or hydrogen bus services in the cities.



Pupils from four Dundee schools painted a bus shelter to encourage those around the city to take action to improve the city's air quality. The slogans aimed to make people think twice about driving and consider active travel as a colourful way of attracting interest in Clean Air Day. The 'City of Discovery' will be introducing its LEZ next year.

Dundee City Council's Convener of Community Safety and Public Protection Committee, Alan Ross, said: "This is a fantastic opportunity to highlight that we can all do more to improve the quality of the air we breathe. The designs on the bus stop are really creative and it's great that we can get children involved in promoting the clean air message in a fun and engaging way."

In Edinburgh, pupils from three schools visited an air pollution monitoring station and found out about how human biology is affected by poor air quality. Liberal Democrat MP Christine Jardine also visited two schools in Scotland's capital city where children attached tags which contained their 'wishes' for better air quality to a tree.



In the Highland village of Plockton, pupils at the local high school participated in a day of learning activities around air quality and environmental

damage showing that young people's concerns about air pollution are to be found outside of cities.



At Farr Primary School in a village near Inverness, the school pupils took part in a walk through woodland to reach school rather be driven into school by car.

Free breakfast vouchers were given to NHS employees at two hospitals in Ayrshire who cycled, walked or caught a bus or train to work. A number of NHS offices held 'pledge card' events for staff who wrote on a piece of card what they would do to cut emissions, whether it included active travel or buying an ultra low emission vehicle. Staff at a municipal offices took part in a cycle 'race' involving a 20-strong peloton who competed against an electric vehicle along the banks of the River Clyde between the Dumbarton and Clydebank.

The 20-strong 'peleton' beat the vehicle by five minutes over an eight mile journey to show the environmental and health benefits of cycling.

Ms Cunningham summed up the success of Clean Air Day in Scotland when she said: "For the youngest and oldest in our society and those with existing health conditions, the impact of air pollution is pronounced. Clean Air Day is an opportunity to discuss the importance of clean air for everyone."

News from EFCA Members



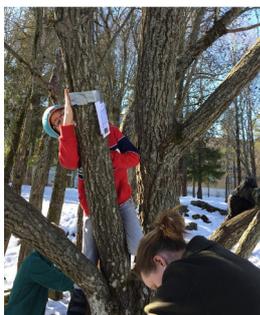
Clean Air For All – a school project in Norway to measure particulate matter

by Núria Castell, senior scientist, NILU-Norwegian Institute for Air Research

In the framework of Oslo European Green Capital 2019, researchers from NILU – Norwegian Institute for Air Research have invited students from elementary schools to measure particulate matter in their neighbourhood, using simple and affordable measuring methods.

“Clean air for all” or “Lufta er for alle” the name in Norwegian, is a school project on air pollution that NILU has developed with the support from NAAF, the Norwegian Asthma and Allergy Association and Oslo Municipality and that has been founded by ExtraStiftelsen.

NILU uses stationary reference stations to monitor air quality in Oslo and other Norwegian cities. These stations are equipped with very expensive and sophisticated instruments that provide very accurate data. However, we only have a few of them in each city. This school campaign can help researchers to get data on particulate matter from many more places.



Kid, hanging luftmåler in school yard

Moreover, it increases awareness among the children about the sustainable challenges cities are facing and invite them to propose solutions.

The measurements are done using a very simple method, explains senior researcher and project leader Núria Castell. All the information you need

you can find and print on the website of the project, <https://luftaforalle.nilu.no>.

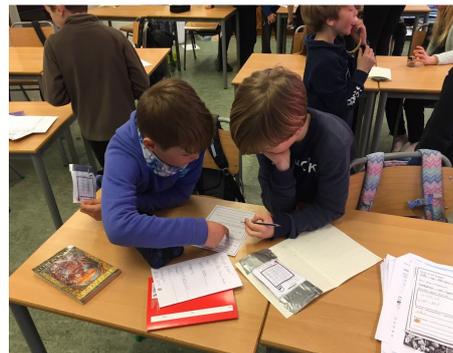
To build the measuring device you only need, paper, a milk carton and Vaseline. The particles get fasten to the Vaseline and after a week you can pick up the devices and compare the amount of dust in them with a separate scale that is also found on the website. The method may sound simple, but Núria assures that it works. She has tested the air meters by hanging them up next to stationary reference stations, and the results coincided well.

The measuring campaign was conducted in the period between 15 March and 15 May. This is the high season for particulate pollution in Norwegian cities, due to dust resuspension. More than 60 classes of 4th grade (9-10 years old) joined the campaign and we collected almost 300 measurements.



Kids hanging luftmåler at street light

During the campaign, NILU scientists visited seven schools in the area of Oslo and carry out the activity together with the teachers. We did a pre- and post-test evaluation in those classes. The preliminary results show that the activity improved the students’ knowledge on air quality and its effects on health.



Kids analysing the results

We also conducted interviews with the teachers who manifested that the activity was very interesting, and was able to motivate and involve all the students, independently of their academic records, in conducting scientific research.

“Clean air for all” has proven to be a successful initiative. The school classes that have been visited by NILU have participated in the activities very enthusiastically. Three 4th grade students from the participant schools presented the results at the international conference “Urban Future Global Conference” held in Oslo in May 2019. The campaign has also received international attention and will be implemented in the Netherlands in collaboration with RIVM- Netherlands National Institute for Public Health and the Environment (<https://www.samenmetenaanluchtkwaliteit.nl/scholen-0>). The documentation has also been translated into English, Hungarian and German.

Núria invites other researchers interested in citizen science activities to translate the material and carry out the activity in their countries. All the material is freely available and the measurements collected can be uploaded to a common map.

EFCA and IUAPPA Assemblies held back-to-back in Brussels on the 17th of May 2019

by Andrzej Jagusiewicz, president of EFCA

EFCA's Assembly was held first and was quite well



attended. The meeting was mainly devoted to the development of EFCA sessions scheduled for the World Clean Air Congress (WCAC) 2019 in Istanbul

(September) and our Croatian member, CAPPAs, „Air Protection 2019” Conference in Bol (October). EFCA's budget 2019/2020, the development of its website and information from members were also on the agenda.

Oral reports were provided on the APPA colloquy on microdevices held in Lille, EFCA/IUAPPA/PIGE presence at COP-24 in Katowice and the President's participation at the 38 th Session of the Executive Body for the Air Convention in Geneva. The budget, well prepared by the treasurer was unanimously approved while it was concluded that the website needed further discussion.

Deliberations about EFCA's role in the incoming events in Istanbul and Bol were fruitful. First of all EFCA will have its two special sessions at WCAC 2019 devoted to UfPs and shipping. Concerning UfPs the session will assess the scientific progress so far and international efforts to find solutions to effectively control their emissions. Of course the challenge ahead will be the development of effective policy responses after the 7th UfP Symposium in Brussels. When it comes to shipping there is a rapid increase of emissions from the sector, therefore the session will give an overview of the potential for emission reductions and consider the developments in international regimes.

Then, concerning the Croatian event, EFCA will go to Bol with the intention of promoting integrated action for cleaner air and climate protection and will report on the progress in light of the WCAC 2019.

The second Assembly was IUAPPA's, which first of all for us, approved EFCA's proposal to organize two special sessions at WCAC and invited EFCA to make a presentation at the plenary, including on a way forward for UfP policy. Apart EFCA's agenda at WCAC 2019, IUAPPA and TUNCAP, the host of the event agreed on the topic of side events, which will include Air Quality Management in South Eastern Europe, the Caucasus and West Asia together (with regional institutions), Global Atmospheric Pollution Forum, together with the Stockholm Environment

Institute, and, finally, Air Quality Strategy, in cooperation with the World Resource Institute.

Needless to write that such Assemblies organized back-to-back are very productive and synergetic.



VDI/BAuA Expert Forum

Bioaerosols: From measurement to assessment

by Dr. Anke Niebaum, VDI/DIN-Commission on Air Pollution Prevention (KRdL), Coordinator Technical Division III "Environmental Quality"

The significance of bioaerosols and their possible adverse health effects on employees of bioaerosols emitting plants as well as nearby residents are the topic of controversial national and international discussions. The expert forum, initiated jointly by the VDI/DIN Commission on Air Pollution Prevention (KRdL) and the Federal Institute for Occupational Safety and Health (BAuA), aims to present the latest research results and questions:

- Novel approaches in sampling, measuring and assessing the health effect of specific bioaerosol components e.g. bacteria, Legionella, endotoxins, fungi and pollen
- State of the art work place measurements and detection techniques
- Current standardization activities in Germany

In addition, experts from selected European partner countries will give an insight into aspects and focal points of their country's bioaerosol standardization and research activities. In a subsequent wrap-up meeting, new topics and priorities will be identified, which may lead to joint European activities.

An accompanying poster session offers the opportunity to present results and experiences and to discuss them with the experts present.

With this event KRdL and BAuA want to offer a neutral and independent platform for this highly complex and controversially discussed topic.

<https://www.vdi.de/veranstaltungen/detail/bioaerosols-from-measurement-to-assessment>

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Plenary Meeting of CEN/TC 264 "Air Quality"

by Dr. Rudolf Neuroth, VDI/DIN-Commission on Air Pollution Prevention (KRdL), Manager

On 14 and 15 May 2019 CEN/TC 264 "Air Quality" met in Copenhagen for its annual plenary meeting at the invitation of Dansk Standard and the Swedish Institute for Standards.

More than 30 experts from ten European countries attended the two days' meeting and discussed the state of the art and the future key aspects of air quality standardization. Currently, 28 working groups of CEN/TC 264 are dealing with over 30 standardization projects.



Air pollution prevention experts from all over Europe discuss in Copenhagen

A focal point of the first meeting day was the co-operation with ISO/TC 146 "Air Quality". For a better progress of the co-operation a vivid communication between the TC chairmen and also a regular information exchange on current standards and projects between both technical committees was agreed on. Another item was the processing of standardization projects for which TC

264 is receiving an EC/EFTA mandate. TC 264 recommended to CEN/BT to accept the mandate covering the standardization of methods for the measurement of volatile organic compounds that are ozone precursor substances in ambient air (in support of EU Air Quality Directive 2008/50/EC) with a clear statement of the risks and opportunities regarding technical expertise, deliverables, funding for validation and timeframe.

The second meeting day started with a convenors' workshop. At the beginning new rules and requirements in European standardization (e.g. Internal Regulations Part 2 and 3), relevant BT decisions (e.g. on best practices for WG meetings, mandatory use of Projex-Online Work Area), on Brexit's impact and SABE activities, on the merge of TC 345 and TC 444 as well as on microplastics were discussed. Moreover, an intensive discussion took place on conformity assessment requirements in European Standards. The neutrality principle stipulates that the content of the standard shall not state a preference for one form or one type of assessment over another. TC 264 decided to re-affirm the necessity of data quality assurance aspects (e.g. traceability to the SI, uncertainty, certified reference materials) in its standards, and maintained the position that such normative clauses shall not be removed from any standards.

Also new items were discussed intensively. Prior to the meeting the TC 264 secretariat had circulated an updated list of potential new standardization topics to be checked and evaluated by the national mirror committees. The following projects are of special interest to the European Commission: emission measurements of gaseous mercury and of formaldehyde as well as long term sampling of dioxins (PCDD/PCDF). Corresponding mandate proposals are under preparation. Additionally, the review/update of the performance of existing standards will be a coming task.

In TC 264 working groups new work items on the measurement of levoglucosan (WG 21), direct measurement of NO₂ (WG 12) and improvement of the quality of mass emission measurements (WG 16) are under discussion.

The successful two days' meeting was closed by the re-appointed Chair of CEN/TC 264, Rod Robinson, with thanks to all participants for the intensive and fruitful discussions. The next plenary meeting will take place on 12th and 13th May 2020 in Krakow.

Calendar



EUROPEAN AEROSOL CONFERENCE - EAC 2019

Join colleagues from all areas of aerosol science at EAC2019. EAC2019 will feature five main themes corresponding to the EAA working groups, in addition to selected special topics

25 - 30 August 2019; Gothenburg, Sweden

<https://www.nosa-aerosol.org/>



ILMANSUOJELU-
YHDISTYS ry.

Finnish Air Pollution Prevention Society (FAPPS)

44th Air Pollution Prevention Days (held in Finnish)

20.-21. September, 2019; Lappeenranta, Finland

www.isy.fi/ilmansuojelupaivat



18th WORLD CLEAN AIR CONGRESS
23– 27 September 2019 • ISTANBUL / TURKEY

18th IUAPPA World Clean Air Congress

23 - 27 September 2019; Istanbul, Turkey

www.wcac2019.org



ILMANSUOJELU-
YHDISTYS ry.

Finnish Air Pollution Prevention Society (FAPPS)

Study trip to Oslo, Norway (Trip program held in English)

26. – 27. September; Oslo; Norway

www.isy.fi/opintomatkat



CAPPA

Eleventh Croatian Scientific and Professional Conference with international participation "Air Protection 2019", 15-19 October 2019, Bol, Croatia

www.huzz.hr



VDI/DIN-Kommission Reinhaltung der Luft (KRdL)-Veranstaltungen 2019 zur Reinhaltung der Luft
<https://www.vdi.de/technik/fachthemen/reinhaltung-der-luft/expertenforen-und-tagungen/>



VDI/BAuA Expert Forum

Bioaerosols: From measurement to assessment

27/28 November 2019, Berlin

<https://www.vdi.de/veranstaltungen/detail/bioaerosols-from-measurement-to-assessment>

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