

Commentary

Challenging the air quality discourse – people create pollution not technology

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The London Smog of 1952 and subsequent health effects brought about a public outcry which triggered the generation and implementation of the UK's Clean Air Act of 1956. This act and subsequent updates has been credited with ending the 'pea-souper' conditions synonymous with industrial and domestic coal burning. In recent years in the UK, the emergence of major smog events in urban areas due to road transport emissions, the growing volume of epidemiological evidence on the health effects of air pollution, the threat of fines by the European Commission towards Member states and the high profile court cases taken forward by ClientEarth against HM Government¹ has once again raised the media and political profile of air pollution but the same public outcry that was evident after the London Smog has not been seen. This story is replicated around the world, where major air pollution incidents are not (yet) resulting in wide scale social action – and consequent political changes – to our approach to tackling air pollution.

It could be argued that the lack of civic engagement with the air quality challenge to date lies in the way in which air quality management processes are undertaken and subsequently communicated - 'people' are absent in the models and scenarios used to estimate and predict air pollution concentrations. The modelling of emissions sources, not the human activities that result in them, leads to a bias in policy that focuses on mitigating emissions through technological change rather than through changing individual and societal behaviour. In turn, this leads to a consequent reliance on technological innovation not social innovation. Traditional source apportionment approaches have previously considered the 'technology' that has been responsible for creating the emissions (e.g.

cars, HGV, combustion plant, etc.) but the 2015 Volkswagen diesel emissions scandal and subsequent debate on real-world versus test cycle emissions brought to the fore that overreliance on technology alone would not solve our pollution problems. We need citizen engagement. We need to bring citizen's daily practices, activities and behaviours in this debate. We need to apportion pollution in a way that make it easier for citizens to make connections between their day to day activities and the generation of pollution e.g. apportioning pollution by categories such as travelling to work, taking children to school, leisure time, commuting etc. We need to embrace new and innovative ways of communicating this challenge to a range of audiences. A new European Horizon 2020 funded project, ClairCity (www.claircity.eu), is aiming to achieve this by systemically changing the way we think about and discuss air pollution.

Cities currently account for only 1% of the earth's surface but half of the world's population, 67% of global primary energy demand and 71% of global energy-related CO₂². In 2012 the WHO calculated that there were seven million premature deaths – one in eight global deaths – annually due to air pollution³. Air pollution from EU industry alone was estimated to cost society €59–€189 billion in 2012⁴. These impacts cannot be sustained. However, future projections indicate that 70% of the global population in 2050 will be living in urban areas⁵ while cities, industry and commercial activities will require the majority of the forecasted 40% increase in world energy demand in 2020. The complex links, both direct and indirect, between people's day-to-day activities and the collective demands that city populations put on local and global environments, particularly through poor air quality and increased carbon emissions, illustrates

¹ http://www.cleanairjournal.org.za/download/caj_vol26_no2_2016_p02.pdf

² International Energy Agency (2008), World Energy Outlook, OECD/IEA2008

³ <http://www.who.int/mediacentre/news/releases/2014/air-pollution/en/>

⁴ EEA (2014), Cost of Air Pollution from European Industrial Facilities 2008-2012, Technical Report, No20/2014

⁵ United Nations, 2014, World Population Prospects: The 2012 Revision, Methodology of the United Nations Population estimates and Projection, ESA/P/WP.235

how the scope of the challenge extends beyond city geopolitical boundaries and reflects the need for long-term pathways to a low carbon, clean air, and healthy future.

Air pollution and carbon emissions are largely a consequence of society's use of energy whether it is for home heating and cooking, personal mobility, employment, industrial production etc. However, energy is not used for its own sake but as part of accomplishing social practices at home, at work and in moving around. Therefore, it can be argued that energy, and by direct association pollution, is an outcome of the social, infrastructural and institutional ordering of what people do. In turn, our lives in future cities will be unlike today's as social and technological innovation continues. Therefore, to truly understand how to mitigate air pollution and reduce carbon in our cities, we need to ask what our cities use energy for and understand how end-uses of energy are changing.

Two decades of established emissions inventories and evolving modelling practices across the EU have only taken air quality management and carbon reduction strategies so far. It can be argued that this is because the policy and methodologies used have, for a number of reasons, led us towards attempts to reduce emissions predominantly through technical measures, and away from changing the way our societies and cities operate and function. Current practices also tend to target the manifestations of problems rather than the cause, for example, by focussing on air pollution hotspots (where), and on transport (what) rather than the behaviour and activities (who and why) that generate transport demand. Additionally, existing approaches to air quality and carbon management are designed to project forward from our current city baselines to achieve reductions in future years. This results in our cities developing into '*what we end up with*' rather than '*what we want*'. To address this issue, air quality and carbon management must put people at the heart of the debate and work with city citizens to create a collective vision of a future desirable city in order to work out what is necessary to do to achieve '*what we want*'.

The air quality discourse and management practices needs to go beyond the traditional '*where and what*' approach to provide a new perspective and a new geography of pollution based instead on '*who and why*' which considers citizens daily activities, behaviour and practices which will clearly allow the connection to be made between pollution and behaviour, and link these to the various practices that constitute everyday life within our cities. In other words, air pollution and carbon management are no longer to be addressed as separate and rather technical policy topics, but to be regarded as part of wider concerns of city inhabitants about their quality of life and healthy futures. In the ClairCity project, this is achieved by creating new platforms

to stimulate discussion and engage citizens in a democratic debate about how their cities develop in a manner that protects the local and global environments and puts their health and well-being at the heart of policymaking. Incorporating social research methods, citizen engagement through workshops, an online game, schools' projects and events reaching out into communities, which is underpinned by innovative data analysis, modelling, and policy packages, we are creating a scientifically robust yet flexible methodological framework which is being tested in six European cities but could be adapted and adopted by any global city. By putting citizens and their behaviour at the heart of the debate, we will raise awareness of the consequences of their daily actions on air quality and carbon emissions and the health outcomes, giving citizens ownership of the problem and also the solutions. This, in our view, is key to improved air quality city policies in the future as policies to date have failed to successfully engage citizens because, unlike technological solutions, people and their behaviour are not obviously present in the way that air quality and carbon issues are managed and communicated.

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