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## **Environmental Law in the Time of Covid-19 – Commentary**

### **Rethinking Clean Air: Air Quality Law and Covid-19**

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Air quality has long been a serious health problem caused by industrialisation and urbanisation.<sup>1</sup> It has also been a very difficult policy and regulatory problem to address.<sup>2</sup> This is partly a problem of regulatory strategy – what suite of measures work together to reduce air pollution levels without simply displacing pollution? It is partly a problem of controlling individual behaviour – as a collective problem, many individual actions generate air pollution. It is partly a problem of policy priority – air quality is often traded off against economic progress. And it is partly a failure of governance – identifying the appropriate actors to govern air quality and ensuring they work in concert. It is also a matter of defining what is acceptable air quality in the first place, and expressing this in law. None of these issues had been resolved well before the COVID-19 pandemic struck.

The pandemic sheds these air quality law challenges in new light. It is a public health crisis with many links to air quality, whether related to air pollution and its impacts on disease outcomes, or through examining the transmission pathways of Covid-19. Responding to the pandemic has involved bold regulatory experiments, heavily restricting behaviours, such as movements across transport networks, that are prime causes of urban nitrogen dioxide (NO<sub>2</sub>) pollution in particular. Above all, the pandemic has increased the profile of air quality as a social problem to address, creating a moment to rethink this problem and what we might do about it.

#### **Reconceptualising and reprioritising air quality**

In light of the Covid-19 crisis, how we think about air quality – and what we might want to do about it – is being reshaped. Clean air is no longer seen only as an issue of chemical pollutants and their scientific measurement in outdoor (or less often indoor) environments. It is also a question of air being free of disease – clean air is safe air.<sup>3</sup> This change of perception

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<sup>1</sup> Indoor and outdoor air pollution is ‘among the leading avoidable cause of diseases and death globally, and the world’s largest single environmental health risk’: World Health Assembly Resolution 68.8, *Health and the Environment: Addressing the Health Impact of Air Pollution*, preambular paragraph 3, citing Global Health Observatory data (2015), <[https://apps.who.int/iris/bitstream/handle/10665/253237/A68\\_R8-en.pdf?sequence=1&isAllowed=y](https://apps.who.int/iris/bitstream/handle/10665/253237/A68_R8-en.pdf?sequence=1&isAllowed=y)> accessed 19 September 2020.

<sup>2</sup> In the EU, ongoing failure by many Member States to comply with the requirements of Directive 2008/50 on ambient air quality and cleaner air for Europe [2008] OJ L152/1 is a good example of this.

<sup>3</sup> This idea has been extensively debated by the UCL Clean Air Community in the wake of the pandemic (<https://www.ucl.ac.uk/sustainable/sustainability-ucl/positive-climate/climate-research/clean-air-community>, accessed 19 September 2020).

harks back to the ‘miasmatic’ explanations of epidemics in Victorian London,<sup>4</sup> although it was the change in perception away from such explanations that led to government policy and legislation that effectively tackled cholera epidemics in particular.<sup>5</sup> This time, a spike in public awareness about air quality is again arising out of a public health crisis, shaking off air quality law’s musty image as the province of technocratic assessment and practice. There are political and regulatory issues in relation to clean air in which the wider public has a serious stake. The reframing of clean air as a wider problem of safe air has at least three consequences for how we think about air quality problems.

First, the pandemic has demonstrated that air pollution is not just a narrow story about traffic. Particularly in the UK and in many large urbanised cities around the world, breaches of NO<sub>2</sub> ambient air quality standards due largely (but not only) to roadside traffic have been the focus of regulatory attention.<sup>6</sup> The response to the pandemic has highlighted that other pollutants are also causing serious harm to health. Thus, whilst there were huge falls in NO<sub>2</sub> air pollution around the world due to vastly reduced traffic and transport, fine particulate matter (PM) pollution levels did not improve during the early stages of the pandemic response, and remained less visible in media headlines.<sup>7</sup> Similarly, increased levels of ozone (O<sub>3</sub>) during pandemic lockdowns, despite travel restrictions and reduced transport, have been observed.<sup>8</sup> O<sub>3</sub> pollution is a pressing concern for air quality and health but has been less visible as a regulatory issue, particularly in EU countries.<sup>9</sup> The pandemic has exposed that our air pollution problem is wide-ranging, that the interaction between pollutants is complex,<sup>10</sup> and that a singular focus on one pollutant misses the bigger air pollution picture.

Second, the Covid-19 pandemic has brought particular attention to clean air in indoor environments. Indoor air quality (IAQ) has been well acknowledged as a problem in countries where indoor cooking and heating methods cause elevated PM levels,<sup>11</sup> but the regulatory approach to IAQ globally has been fragmented at best, and mostly non-existent in many countries, including the UK.<sup>12</sup> There is often an artificial indoor vs outdoor barrier in regulating air quality and setting air quality standards.<sup>13</sup> In the age of Covid, the importance

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<sup>4</sup> Stephen Halliday, ‘Death and Miasma in Victorian London: An Obstinate Belief’ (2001) 323(7327) *BMJ* 1469.

<sup>5</sup> Early research indicates that COVID-19 is indeed an airborne disease: van Doremalen and others, ‘Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1’ (Letter to the Editor, *N Eng J Med*, April 16 2020).

<sup>6</sup> Department of Environment, Food, and Rural Affairs and Department of Transport, *UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations* (July 2017).

<sup>7</sup> Springtime is generally marked by high levels of PM pollution: <https://airqualitynews.com/2020/05/04/air-quality-making-headlines-during-the-coronavirus-lockdown/> (accessed 20 September 2020); cf ‘Coronavirus: Lockdowns continue to suppress European pollution’ (BBC news, 27 March 2020) (focusing on falls in NO<sub>2</sub> pollution).

<sup>8</sup> Yanbin Zhao and others, ‘Substantial Changes in Nitrogen Dioxide and Ozone after Excluding Meteorological Impacts during the COVID-19 Outbreak in Mainland China’ (2020) 7(6) *Environ Sci Technol Lett* 402.

<sup>9</sup> This is because less stringent legal standards are set in relation to O<sub>3</sub>, with long-term objectives rather than binding limit values for O<sub>3</sub> under Directive 2008/50 (n 2).

<sup>10</sup> The role of NO<sub>2</sub> in suppressing O<sub>3</sub> levels was already well known scientifically eg Iny Jhun and others, ‘The Impact of Nitrogen Oxides Concentration Decreases on Ozone Trends in the USA’ (2015) 8(3) *Air Qual Atmos Health* 283.

<sup>11</sup> WHO Guidelines for Indoor Air Quality (2009, 2010, 2014), available at <https://www.who.int/airpollution/guidelines/en/> (accessed 20 Sept 2020).

<sup>12</sup> This is because bespoke air quality regulation, including air quality standards, apply to ambient air quality: see n 2.

<sup>13</sup> *ibid.* Another example is the Clean Air Act 1993, which restricts smoke from chimneys to limit air pollution in ‘smoke control areas’, but does not regulate outdoor fires in backyards.

of ensuring safe and well-ventilated indoor environments – in work and institutional environments (schools, hospitals) or other public spaces (restaurants, leisure spaces), as well as in private homes – has become a priority regulatory challenge in the drive to create ‘Covid-secure’ environments.<sup>14</sup>

Third, the pandemic has starkly highlighted that air quality is a problem not only of public health but also of social inequality. Existing research has demonstrated a link between exposure to poor air quality and deprived socio-economic communities.<sup>15</sup> This link appears to have been a matter of life and death during the initial stages of the Covid pandemic, at least in the UK and US. Preliminary studies show higher morbidity and mortality from Covid-19 amongst people who live in areas of poor outdoor air quality.<sup>16</sup> In the UK, there was robust political debate over officially recognising that this phenomenon heightened the Covid-related health risks for ethnic minorities living in more deprived, and more polluted, communities.<sup>17</sup> This debate is starting to unpack, against the backdrop of alarming disease outcomes, the implications of social inequalities in air pollution exposure.

These three features show that clean air has not only been reconceptualised by the Covid-19 pandemic, it is also been reprioritised. As the UK, like many countries globally, prioritised saving lives and protecting vital health services, this also meant prioritising public health and clean air. Through sweeping government responses to the pandemic, we have also gleaned some insights into how clean air might be achieved.

### **Achieving clean air after Covid**

The pre-pandemic regulatory strategy for clean air in the UK was narrowly focused on meeting EU air quality standards for NO<sub>2</sub> that had been unlawfully breached since 2015.<sup>18</sup> A national roll out of locally designed ‘Clean Air Zones’, restricting traffic of certain types in city centres, was at the core of this plan. Also central was an almost singular focus on local authorities as the primary governance actors to reduce air pollution to legal levels (‘local problems require local action’). Despite a byzantine array of repeated Ministerial directions on local authorities to make this happen,<sup>19</sup> this regulatory strategy was not working.<sup>20</sup>

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<sup>14</sup> Department for Business, Energy & Industrial Strategy and Department for Digital, Culture, Media & Sport, ‘Working Safely During Coronavirus’ (18 September 2020), available at <https://www.gov.uk/guidance/working-safely-during-coronavirus-covid-19> (accessed 20 Sept 2020).

<sup>15</sup> Gordon Mitchell and Danny Dorling, ‘An Environmental Justice Analysis of British Air Quality’ (2003) 35 *Environment and Planning A* 909.

<sup>16</sup> Xiao Wu and others, ‘Exposure to Air Pollution and COVID-19 Mortality in the United States: A Nationwide Cross-sectional Study’ (medRxiv preprint, 27 April 2020, <https://doi.org/10.1101/2020.04.05.20054502>); Marco Travaglio and others, ‘Links between air pollution and COVID-19 in England’ (medRxiv preprint, 6 June 2020, <https://doi.org/10.1101/2020.04.16.20067405>).

<sup>17</sup> Public Health England, *Covid-19: Review of Disparities in Risks and Outcomes* (2 June 2020) and Public Health England, *Beyond the Data: Understanding the Impact of Covid-19 on BAME groups* (16 June 2020) were strongly criticized for failing to correct for air pollution exposure and occupation: Damian Carrington, ‘Omission of Air Pollution from Report on Covid-19 and Race “Astonishing”’ (The Guardian, 7 June 2020).

<sup>18</sup> (n 8).

<sup>19</sup> <https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017-air-quality-directions> (accessed 20 Sept 2020).

<sup>20</sup> In September 2020, not a single Clean Air Zone outside London had been established, despite this being core to the UK government’s plan to achieve compliance with legal NO<sub>2</sub> standards since 2015 (DEFRA, ‘Air Quality in the UK: Plan to Reduce Nitrogen Dioxide Emissions (2015)’ (withdrawn)): ClientEarth written evidence AQU0056, Environment, Food and Rural Affairs (EFRA) Select Committee’s Inquiry into Air Quality (September

The UK government's response to the pandemic – like that of many governments around the world – involved a different kind of regulatory approach. At its most stringent, the UK government's national 'lockdown'<sup>21</sup> introduced behavioural controls – including measures previously unthinkable as forms of social regulation – which heavily restricted physical movements of members of the public in outdoor and indoor environments alike. Very rarely has a regulatory goal – 'protect the NHS and save lives' – been so clear and so singular.<sup>22</sup> As a result, some well-known air pollution culprits – road vehicles in particular – for a short time receded, with NO<sub>2</sub> air quality across urban hotspots rapidly improving.<sup>23</sup> Notably, this drastic regulatory action achieved what 5 years of air quality planning to meet NO<sub>2</sub> limit values did not. Whilst this did not resolve all our air pollution problems, as noted above, it demonstrated actions that achieve specific air pollution goals. In particular, it involved the national government taking the lead to implement a coordinated, robust regulatory approach.

This regulatory experiment does not provide a clear blueprint for achieving clean air, particularly since the measures adopted were not economically or socially sustainable and our air pollution problem needs to be more widely conceived, but it suggests that at least three things are important for air quality regulation. First, *national* direction and coordination of multiple actors and sectors is important in making real improvements in air quality. Second, a clear regulatory goal drives action on air quality. Third, planning the complex movements of people and businesses across cities so as to reduce air pollution is possible, should the political will be there. Air pollution is fundamentally a problem of town and country planning and coordinated governance, as well as technical assessment and industrial policy.

## Conclusion

The Covid-19 pandemic offers an opportunity to rethink clean air – how we define it and how we seek to achieve it in policy and regulatory terms. In reframing air pollution as a wider regulatory and social problem, we need to rethink the legal standards and regulatory strategies that we apply for air quality, who they should protect, and what kind of governance approach is needed to achieve and implement them. In the UK, the English Clean Air Strategy 2019 provides some scaffold for this kind of holistic review, although its ambition is muted in key respects.<sup>24</sup> The English Environment Bill 2020 aims to strengthen air quality law and governance, but misses the legal opportunity to learn key air quality lessons from the global Covid-19 pandemic – it fails to tackle indoor air quality or social inequalities associated with air pollution, and does not aim to reform air quality governance in a nationally coordinated and strategically planned way. Nonetheless, one outcome of this pandemic, which has recast the problem of air pollution, is that globally we must rethink legal approaches to clean air in the broadest sense.

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2020), available at <https://committees.parliament.uk/work/362/air-quality/publications/> (accessed 23 September 2020).

<sup>21</sup> Prime Minister's Office, 'Prime Minister's statement on coronavirus (COVID-19): 23 March 2020'.

<sup>22</sup> Elizabeth Fisher, Bettina Lange, and Eloise Scotford, *Environmental Law: Text, Cases and Materials* (2<sup>nd</sup> ed, OUP 2019) chapters 2 and 12.

<sup>23</sup> European Environment Agency, 'Air Quality and COVID-19' (4 April 2020), available at <https://www.eea.europa.eu/themes/air/air-quality-and-covid19> (accessed 23 September 2020).

<sup>24</sup> See oral and written evidence to the EFRA Committee's Inquiry into Air Quality (n 20).