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23 April 2021

The Secretary  
Economy and Infrastructure Committee  
Parliament House, Spring Street  
**EAST MELBOURNE VIC 3002**

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## **Inquiry into Health Impacts of Air Pollution in Victoria**

AMA Victoria welcomes the opportunity to contribute to the Inquiry into Health Impacts of Air Pollution in Victoria.

As the peak professional organisation representing medical practitioners in Victoria, we have a longstanding interest in this issue.

AMA Victoria recognises that air quality has significant implications for human health. Over recent decades, there have been general improvements in air quality in Australia due to a mix of regulatory and non-regulatory approaches applied at local, state, and national levels. Despite this, considerable challenges remain. As an accumulating body of evidence refines our understanding of the health effects of air pollution, various developments have called into question the effectiveness of current air quality management in Australia, including an increasing reliance on road transport, the expansion of mining and industries producing hazardous air pollutants, and the compounding effects of climate change and extreme weather on poor air quality.

Drawing upon extensive previous policy work in this area,<sup>1</sup> this submission will begin by detailing the serious impacts of poor air quality on human health, including increases in cardiovascular and respiratory disease risk and the exacerbation of existing respiratory disease such as asthma. It will then turn to mitigation strategies to address this issue. It is our position that strategies that focus on improving energy and combustion efficiency, transitioning to non-combustion energy sources, and promoting active transport should be adopted. These have the mutual benefit of reducing greenhouse gas emissions and the disease burden from air pollution in Australia, with the associated health savings substantially offsetting the cost of policy implementation.

### **Health impacts of air pollution**

From a medical perspective, the adverse health consequences of air pollution range from acute and chronic effects, such as restrictions in physical activity, to emergency room visits for asthma and hospitalisations for respiratory and cardiovascular causes, to premature mortality.

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<sup>1</sup> AMA Victoria wishes to draw to the Committee's attention the AMA's Position Statement on [Climate Change and Human Health - 2015](#); our 2019 [Submission](#) to the National Environment Protection Authority's consultation on Air Quality Standards; and our 2013 [Submission](#) to the Senate Inquiry into the impacts on health of air quality in Australia.

Although there have been significant improvements to air quality in Australia over recent decades, the health costs arising from air pollution remain considerable. It has been estimated that, each year, urban air pollution accounts for significantly more deaths than the nation's road toll.<sup>2</sup>

Although poor air quality is often considered to be primarily a health concern in low and middle-income countries, it also causes significant harm in high-income countries. For example, a recent study quoted in *AusDoc* cited research showing that "exposure to air pollution needs to be considered when considering the cardiovascular benefits of walking and cycling compared with driving."<sup>3</sup> This study, which was based on a large population in Ontario, Canada, found that living in relatively highly polluted neighbourhoods was associated with a higher risk of hypertension and diabetes than areas with less vehicle pollution.

These health impacts are also felt in Australia. The Australian Institute of Health and Welfare's *Australian Burden of Disease Study for 2015* found that 4.6% of disease burden from cardiovascular disease and 1.6% of disease burden for respiratory disease was attributable to air pollution.<sup>4</sup>

Long-term exposure to urban air pollution accounts for 1.5% of all deaths in Australia and short-term exposure accounts for a further 0.8%.<sup>5</sup> The health cost of air pollution in Sydney alone is estimated to be between \$1 billion and \$8.4 billion each year.<sup>6</sup> Air pollution from motor vehicles and coal-fired power generation are estimated to carry annual health costs of AU\$2.772 and \$2.673 billion respectively.<sup>7</sup>

The costs of wood fire smoke are also considerable. Smoke from home wood heaters has been found to be one of the largest contributors to Melbourne's air pollution and, according to a 2017 paper from Victoria's Environment Protection Authority, was on track to cost the health system \$8 billion by 2027.<sup>8</sup>

We have noted publicly<sup>9</sup> that smoke from wood-burning heaters is a substantial contribution to air pollution and that long-term exposure can also contribute to coronary artery disease, strokes and heart attacks as fine PM 2.5 particles can travel further past the usual body's defences and be absorbed into the bloodstream.

The World Health Organisation has long drawn attention to the severe health impacts of air pollution. In 2016, the WHO reported that global air pollution caused a total of eight million deaths annually, 3.7 million of which are attributable to ambient air pollution. The WHO's 2016 Draft road map for an enhanced global response to the adverse health effects of air pollution specifically directs the health sector to raise awareness about the

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<sup>2</sup> Begg, S, Vos, T, Barker, B, Stevenson, C, Stanley, L, Lopez, A, (2007). The burden of disease and injury in Australia 2003. AIHW cat. no. PHE 82. Canberra: Australian Institute of Health and Welfare (AIHW). [www.aihw.gov.au/bod/index.cfm](http://www.aihw.gov.au/bod/index.cfm)

<sup>3</sup> [Pollution cancels out benefits of exercise | Australian Doctor Group \(ausdoc.com.au\)](http://ausdoc.com.au).

<sup>4</sup> AMA [Submission](#) to National Environmental Protection Council's consultation on the proposed variation to the National Environment Protection (Ambient Air Quality) Measure standards for ozone, nitrogen dioxide and sulfur dioxide.

<sup>5</sup> Spickett, J.T., H.L. Brown, and K. Rumchev, Climate change and air quality: the potential impact on health. *Asia Pac J Public Health*, 2011. 23(2 Suppl): p. 37S-45.

<sup>6</sup> Department of Environment and Conservation (DEC), Air Pollution Economics: Health Costs of Air Pollution in the Greater Sydney Metropolitan Region. 2005: NSW, Sydney.

<sup>7</sup> Bureau of Transport and Regional Economics, Health impacts of transport emissions in Australia: Economic Costs. Working Paper no. 63,. 2005: Canberra, Australia. p. Department of Transport and Regional Services; Australian Academy of Technological Sciences and Engineering (ATSE), The hidden costs of electricity: externalities of power generation in Australia. 2009: Parkville, Australia.

<sup>8</sup> <http://ref.epa.vic.gov.au/ourwork/settingstandards/~media/Files/Our%20work/Setting%20and%20reviewing%20standards/Waste%20Management%20Policy%20Solid%20Fuel%20Heating/PIAWasteManagementPolicySolidFuelHeating.pdf>

<sup>9</sup> [AMA fires up over wood heater buy-back scheme \(theage.com.au\)](http://theage.com.au)

relationship between air pollution and poor health outcomes, including by supporting the implementation of WHO guidelines on air quality.<sup>10</sup>

The World Medical Association, of which the AMA is a member, also holds a clear position on air pollution as set out in the statement *Prevention of Air Pollution Due to Vehicle Emissions*, adopted in 2014. The WMA notes the relevance of air pollution to the medical profession due to its significant health impacts and contribution to mortality. The statement particularly draws attention to the toxic effects of urban outdoor air pollution on cardiovascular and respiratory health.<sup>11</sup>

### **Mitigation strategies**

Policies to reduce air pollution have potentially large public health benefits, and health economic cost savings, which may substantially offset the cost of mitigation.

Strategies that focus on improvements in energy and combustion efficiency- and transition to non-combustion energy sources, such as solar, wind and wave- would also mutually reduce emissions of health-harming pollutants and climate-altering greenhouse gases.

In the United States, the direct economic benefits of reducing PM2.5 and ground-level ozone pollution under the *1990 Clean Air Act Amendments* have been estimated to be up to 90 times the cost of implementing them.<sup>12</sup> About 85% of this economic benefit would be due to fewer premature deaths linked to reducing PM2.5 in the outdoor environment, with the premature deaths of 230,000 people avoided in the year 2020 alone. For example, designing transport systems that promote active transport and reduce use of personal motorised vehicles, leads to lower greenhouse gas emissions and better health through improved air quality and greater physical activity.

The AMA has a clear position on renewable energy. Renewable energy presents relative benefits compared to fossil fuels with regard to air pollution and health. Therefore, active transition from fossil fuels to renewable energy sources should be considered. Further, to address the specific impacts of wood fire smoke, we have advocated for the State Government to fund an ACT-style buyback or subsidy scheme to encourage people to switch from home wood heaters to cleaner forms of heating. The AMA has also recently endorsed emissions reduction targets of net zero by 2050 (Australia-wide) and net zero by 2040 (Australian health sector).

AMA Victoria thanks the Committee for the opportunity to contribute to this important inquiry.

For further information on this submission, please contact Communication and Advocacy Officer, Lewis Horton, on 0432 593 124 or [LewisH@amavic.com.au](mailto:LewisH@amavic.com.au).

Yours sincerely,

Associate Professor Julian Rait OAM  
**AMA VICTORIA PRESIDENT**

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<sup>10</sup> AMA [Submission](#) to National Environmental Protection Council's consultation on the proposed variation to the National Environment Protection (Ambient Air Quality) Measure standards for ozone, nitrogen dioxide and sulfur dioxide.

<sup>11</sup> Ibid.

<sup>12</sup> United States Environmental Protection Agency (USEPA), *The Benefits and Costs of the Clean Air Act from 1990 to 2020*. 2011: Washington DC.