



International Laboratory for Air Quality and Health
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28 July 2014

Dr. Kirthana Sharma
Public Health Association of Australia
P.O. Box 319
Curtin ACT 2605
Australia

Dear Dr. Sharma,

Re: NorthConnex tunnel project in Sydney

In response to your letter dated the 16 July 2014, in relation to your submission regarding the Ambient Air Quality around the NorthConnex Vehicular Tunnel northern ventilation stack, I have read the submission and consider the evidence summarized accurately, both in relation to air quality statements and health effects. I would also like to add several points (please also see my credentials – Appendix I):

- The 2010 Global Burden of Disease study (GBD), a major international effort to quantify the global burden of disease ranked ***ambient particulate matter within the top ten risk factors in the world*** (Lim et al. 2013, *The Lancet* 380(9859), pages 2224-2260);
- The effects of air pollution poses significant burden costs, leading to life-long health problems meaning potentially large costs in terms of disability adjusted life years;
- The impact of urban transport on air pollution plays a large role in relation to 'new' pollutants, in particular Ultrafine Particles (e.g. Health Effects Institute, 2013), with their concentrations elevated by up one or two orders of magnitude in the proximity to busy roads or tunnels, respectively (Morawska et al, 2008, *Atmospheric Environment*, 42: 8113-8138, 2008);
- Any increase of concentrations adds to mortality and morbidity – the higher the exposed population is, like in the proposed are;

- The development of the new NorthConnex tunnel will lead to enormous emissions from the tunnel;
- Placing a stack of inadequate height in a valley is against the basic understanding of pollution dispersion, leading to a large increase in air pollution in the valley;
- The recommendation by NorthConnex to consider either a different location or increase the height and ventilation stack is very logical, and these are the two best solutions to limit the impact of the stack on the surrounding community.

Please do not hesitate to contact me if you require further information.

Yours Sincerely,

A handwritten signature in black ink, reading "Lidia Morawska". The signature is fluid and cursive, with the first name "Lidia" and the last name "Morawska" clearly distinguishable.

Professor Lidia Morawska, PhD

Director

International Laboratory for Air Quality and Health
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Appendix I

I, Lidia Morawska, am a Professor at the Science and Engineering Faculty, Queensland University of Technology (QUT) in Brisbane, Australia, and the Director of the International Laboratory for Air Quality and Health (ILAQH) at QUT, which is a Collaborating Centre of the World Health Organisation on Research and Training in the field of Air Quality and Health. I conduct fundamental and applied research in the interdisciplinary field of air quality and its impact on human health and the environment, with a specific focus on science of airborne particulate matter (ultrafine and nanoparticles). I am a physicist and received my doctorate at the Jagiellonian University, Krakow, Poland for research on radon and its progeny. Prior to joining QUT, I spent several years in Canada conducting research first at the McMaster University in Hamilton as a Fellow of the International Atomic Energy Agency, and later at the University of Toronto. I am an author of over three hundred journal papers, book chapters and refereed conference papers. I have also been involved at the executive level with a number of relevant national and international professional bodies and has been acting as an advisor to the World Health Organisation. I am also a past President of the International Society of Indoor Air Quality and Climate.