Submission on the consultation on light and heavy vehicle emission standards for cleaner air.

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Thank you for the opportunity to comment on the latest consultation on light and heavy vehicle emission standards for cleaner air.

About the Centre for Air pollution, energy and health Research (CAR)

CAR is a Centre of Research Excellence funded by the National Health and Medical Research Council. The centre brings together more than 30 researchers at the forefront of their fields, based in seven of Australia's leading universities. CAR is the only group of its kind nationally to bring together researchers focusing on health impacts of air pollution, and new versus traditional forms of energy. The centre supports teams of researchers in the fields of epidemiology, exposure assessment, toxicology, chemistry, biostatistics and clinical respiratory medicine to pursue collaborative projects and to develop their capacity. Our centre's vision for a healthier community is the driving force behind our research.

CAR is facilitating and translating research on moving to alternative, renewable forms of energy that have the most beneficial (or least detrimental) impacts on the economy, environment and health, considering a technology's life cycle. For example, CAR is assessing how a transition in domestic energy use (from solid-fuel combustion to solar-generated electricity) may reduce household air pollution and therefore reduce childhood mortality rates in some Pacific Island Countries. Conversely, CAR will also assess the potential for negative impacts from energy transitions, such as the environmental health impacts of disposal of photovoltaic solar panels at the end of their life cycle.

CAR recently published a study demonstrating that on-road motor vehicle emissions contribute a disproportionate amount to overall human exposure to air pollution due to the close proximity of vehicle emissions to human populations (Broome et al 2020 *Environment International* 137:105429).

General comments

No safe level of air pollution

The evidence is clear – we know that adverse health effects as a result of exposure to particulate matter (PM) air pollution have been detected at low levels (Hanigan et al 2019 *Environment International* 126:762), well below the current Australian National Environmental Protection Measure (NEPM). In other words, there is no safe level of air pollution exposure in terms of human health. These health effects range from deaths due to, and exacerbation of,

cardiovascular disease, respiratory disease, metabolic disease and neurological disease (Landrigan et al 2018 *The Lancet* 391:462). Any community-level intervention that reduces exposure to air pollution, particularly PM, will have a range of social, financial and health benefits for all Australians.

Australia lags behind the world for regulation of vehicle emissions.

The Euro Standard emission requirements are considered to be the gold-standard for the regulation of vehicle emissions from combustion engines that burn fossil fuels. The current Euro 5 Standard that exists in the Australian regulatory landscape was approved for on-board diagnostics (OBD) in Europe in 2009 - Australia is more than a decade behind the world leaders. The European regulatory environment has now moved several stages beyond this through Euro 6b (2014) to Euro 6d (2020). This has required more stringent regulation of PM emissions (75% lower for 6d compared to 5), nitric oxide (NO_x) emissions (70% lower for 6d compared to 5) and the number of particles emitted (PN) per kilometre (not regulated under Euro 5).

Response to RIS consultation

Light vehicles

Australia should move to the Euro 6d standard as soon as possible. Given that the current quality of Australian diesel allows for immediate transition to this standard, CAR strongly advocates for the immediate implementation of the Euro 6 standard for light diesel vehicles. If there is an opportunity to transition to the Euro 6b standard sooner than the proposed timeline for adoption of Euro 6d, we support this approach. Noting that we strongly advocate for more rapid transition to the Euro 6d standard as the requirements for PM emissions are half that of the Euro 6b standard.

Diesel vehicles

Australia should move to the Euro VI standard as soon as possible and CAR supports transitioning to this standard sooner than the proposed timeline (e.g., where this is possible for some categories of vehicle).

Conclusion

These interventions will lead to reductions in preventable deaths, hospitalisations and GP visits in Australia as a result of reducing community exposure to vehicle emissions. We strongly support the transition to the most stringent Euro standards as soon as possible.

References

Broome R, Powell J, Cope M, Morgan G. The mortality effect of PM 2.5 sources in the Greater Metropolitan Region of Sydney, Australia. Environment International. Environment International 2020; 137:105429 https://doi.org/10.1016/j.envint.2019.105429

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For more information

This submission has been produced by the Centre for Air pollution, energy and health Research (CAR).

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