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WEST GATE TUNNEL PROJECT EES – PM_{2.5} STANDARDS

We refer to the meeting of 13 June 2017 with Stuart Morris, Barrister. Golder Associates was requested to compare PM_{2.5} standards in other jurisdictions with existing and future PM_{2.5} standards in Victoria.

Table 1 presents existing and future PM_{2.5} standards in various jurisdictions worldwide. Whilst we have not attempted to review all PM_{2.5} standards globally, those listed are from jurisdictions with similarly developed statutory frameworks for air quality as Victoria.

Table 1: Comparison of PM_{2.5} Standards Worldwide

Jurisdiction	Reference	Standard (µg/m ³)	Percentile ¹⁶	Date to be achieved	Averaging period
Australia and Victoria	Air NEPM ¹ / SEPP(AAQ) ²	25 8	100	15 December 2015 / 28 July 2016	24 hour Annual
		20 7	100	2025 2025	24 hour Annual
Europe	WHO ³	25 ⁴ 10	99 100	2005 2005	24 hour Annual
European Union	2008/50/EC ⁵	25 20	100 100	1 January 2015 1 January 2020	Annual
United Kingdom (except Scotland)	Note 6	25	100	2015	Annual
Scotland	Note 7	12	100	2020	Annual
Canada	Note 8	28 10	100	2015	24 hour Annual
		27 8.8	100	2020	24 hour Annual
United States	Note 9	35 ¹²	98	1990	24 hour (averaged over 3 years)
		12 ¹⁰	100	1990	Annual (averaged over 3 years)
		15 ¹¹	100		Annual (averaged over 3 years)
Hong Kong	Note 13	75 35	100	1 January 2014	24 hours Annual
Japan	Note 14	35 15	98 100	9 September 2009	24 hours Annual

Jurisdiction	Reference	Standard (µg/m ³)	Percentile ¹⁶	Date to be achieved	Averaging period
New Zealand	Note 15	25 10	99 100	2005	24 hour Annual

Notes:

- 1: National Environment Protection (Ambient Air Quality) Measure (Air NEPM) nationwide standards. Not relevant to air emissions from individual sources, specific industries or roadside locations.
- 2: Victorian State Environment Protection Policy (Ambient Air Quality), [SEPP(AAQ)]. The SEPP(AAQ) has adopted the requirements of the National Environment Protection (Ambient Air Quality) Measure.
- 3: World Health Organisation (WHO) 2005 and Ambient (outdoor) Air Quality and Health Fact Sheet updated September 2016.
- 4: Based on relation between 24 hour and annual PM levels.
- 5: European Union, Directive 2008/50/EC of the European Parliament and of the Council.
- 6: The United Kingdom Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volume 1), July 2007.
- 7: Scotland proposes to adopt a lower annual PM_{2.5} objective than the rest of the UK.
- 8: Canadian Ambient Air Quality Standards as promulgated in the Canadian Environmental Protection Act, 1999 on May 25, 2013.
- 9: United States Clean Air Act, 1990.
- 10: Primary standard – provides public health protection.
- 11: Secondary standard – provides public welfare protection.
- 12: Provides primary and secondary protection.
- 13: Hong Kong Air Quality Objectives, Air Pollution Control Ordinance (Cap. 311). The 24 hour objective allows for 9 exceedances.
- 14: Japanese Environmental Quality Standards for PM_{2.5}. Ministry of the Environment. Notification on 9 September 2009.
- 15: There are no national air quality standards for PM_{2.5}. The Ministry of the Environment website refers to the WHO guidelines for the protection of human health.
- 16: The value below which a given percentage of measured concentrations in a group of measured concentrations fall. For example the 100 percentile is the maximum concentration.

A review of the existing and future PM_{2.5} standards shows that:

- The existing 24 hour Victorian standard is comparable to the WHO, European Union and United Kingdom standard and lower than the United States, Canadian, Hong Kong and Japanese standards.
- The future 24 hour Victorian goal of 20 µg/m³ to be reached by 2025 will be the most stringent of those standards presented in Table 1, at least 20% lower than other jurisdictions.
- The existing annual average Victorian standard is currently the most stringent of those standards presented in Table 1.
- The future annual Victorian goal of 7 µg/m³ to be reached by 2025 will be the lowest of those standards in Table 1, by at least 25%.

In summary, the state of Victoria currently has the most stringent 24 hour and annual PM_{2.5} standards of those jurisdictions reviewed. The future 24 hour and annual PM_{2.5} goal to be achieved by 2025 will further tighten these standards.

Please contact the undersigned directly on 8862 3774 if you have any queries.

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