



Consultation on a proposed workplace exposure standard for diesel particulate matter

Submission to Safe Work Australia

Contact

Naomi Plummer
Policy Advisor
Health, Safety and People
n.plummer@cmewa.com

Contact

Laila Nowell
Manager
Health, Safety and People
l.nowell@cmewa.com

Table of Contents

Table of Contents	4
About CME	1
Summary of recommendations	1
1. Introduction.....	2
2. Research	2
3. Existing State Regulation.....	3
4. Practical Application.....	4
4.1 Exceedances.....	4
4.2 Action Level	5
4.3 Time Weighted Averages	5
5. Industry Controls	6
6. Alternative WES	7
6.1 Regulatory Impact Assessment	7
7. Conclusion.....	7
Appendix I – SWA consultation survey on a proposed DPM WES - Questionnaire	8

About CME

The Chamber of Minerals and Energy of Western Australia (CME) is the peak representative body for the resources sector in Western Australia (WA).

CME is funded by member companies responsible for more than 87 per cent of WA's mineral and energy workforce employment,¹ 55 per cent of Australia's mining new capital expenditure² and 44 per cent of Australia's corporate income tax receipts by value in 2020-21.³ The sector is a significant contributor to local, State and Australian economies.

Summary of recommendations

A summary of recommendations pertaining to each priority area is included below, with further supporting detail outlined in the following submission.

Workplace exposure standard (WES)

- CME supports establishing a WES for Diesel particulate matter (DPM) however, does not support the Safe Work Australia (SWA) proposed WES being set at 15 µg/m³ for DPM for the reasons outlined in the below submission.

Research

- CME supports continued research to validate the effectiveness of evolving technologies which mitigate DPM risk.
- CME is concerned that the evidence presented in the Safe Work Australia consultation paper in support of the proposed SWA DPM WES does not consider the modern workplace environment. CME recommends SWA undertake continued research into non-transitional diesel engines (NTDE) to ensure that introduction of a WES for DPM is generalisable and accurately reflects industry.

Practicability

- CME recommends further consideration of the measurability of the proposed WES DPM action level to ensure feasibility and enable workable implementation in resource sector workplaces
- CME does not support the introduction of a Time Weighted Average (TWA) for diesel particulate matter of 15 µg/m³ due to the further technical and monitoring limitations presented by application over a 12-hour shift arrangement.
- CME strongly recommends that a holistic approach must serve as the foundation to sustainably accomplish a reduction of worker exposure to diesel particulate matter, involving a broad suite of controls.

Alternative WES

- CME supports sustainable reductions in the DPM WES and proposes an alternative WES of 50µg/m³ with an adequate transition period.
- CME recommends a regulatory impact assessment be undertaken to identify the significance of the impacts to industry.

¹ Government of Western Australia, [2021-22 Economic indicators resources data](#), average number of individuals onsite under State legislation, Department of Mines, Industry Regulation and Safety, 5 October 2022

² Australian Bureau of Statistics, [5625.0 Private New Capital Expenditure and Expected Expenditure Australia](#), December 2022 reference period, tables 1 and 15

³ Australia-wide operations of companies with direct, equity joint venture or subsidiary interests in WA-based member projects. Commonwealth of Australia, [2020-21 Report of Entity Tax Information](#), Australian Taxation Office, 3 November 2022

1. Introduction

Under the national model Work Health and Safety (WHS) law, workplace exposure standards (WES) are legal concentration limits of a particular airborne chemical or substance that must be adhered to.⁴ A person conducting a business or undertaking (PCBU) must ensure a worker is not exposed to airborne contaminants above the workplace exposure standard. Western Australia (WA) has adopted model WHS legislation, and the legal requirements regarding WES exposure apply to WA workplaces. The Chamber of Minerals and Energy of Western Australia (CME) notes that specific exposure standards for contaminants developed by SWA are still subject to approval by the WA Government.

The model WHS legislation does not currently prescribe a WES for diesel particulate matter (DPM) and Safe Work Australia (SWA) are considering the introduction of a WES which is proposed to be set at an 8-hour time-weighted average (TWA) of 15 µg/m³ (the proposed SWA DPM WES). The SWA consultation paper includes the [Research Report – Workplace Exposure Standard for Diesel Particulate Matter](#) (the SLR Report) prepared by SLR Consulting Australia for SWA which is presented as the evidence base for the SWA proposal.⁵

DPM is a type of air pollutant that is emitted from diesel engines. It consists of tiny particles that are less than 2.5 microns in diameter and are capable of penetrating deeply into the lungs. These particles are also known as fine particulate matter. Diesel engines are used in various applications throughout the WA resources sector, including transportation, construction, and within underground mining. The composition of DPM can vary depending on factors such as engine type, fuel quality, and operating conditions.

We understand the proposal to introduce a WES is based on research suggesting that exposure to DPM can have serious health consequences such as asthma, bronchitis and lung cancer if the particles are small enough to penetrate deep into the lungs. Establishing a WES is intended to provide certainty for both employers and workers regarding the level of compliance needed to ensure the health and safety of workers. However, it is important to maintain a risk-based approach to safeguard worker safety and negate adverse health effects.

This consultation provides an opportunity for stakeholders to provide feedback on the proposal, including the measurement of DPM and whether the proposed SWA DPM WES should be enshrined in the model WHS Act.⁶ CME appreciates the opportunity to provide feedback as part of the public consultation process and looks forward to collaborating to ensure that any proposed SWA DPM WES is effective, feasible and practical for the WA resources industry while protecting the health and safety of workers.

CME supports establishing a WES for Diesel particulate matter (DPM) however, does not support the Safe Work Australia proposed WES being set at 15 µg/m³ for DPM for the reasons outlined in the below submission.

2. Research

Significant research efforts have been undertaken in WA to generate data and validated methodologies to increase the understanding of DPM behaviour in the workplace. These efforts provide industry and government with access to informed insights regarding the behaviours and characteristics of DPM emitted by diesel equipment. This research has been vital in addressing potential health and safety concerns associated with DPM exposure.

In 2019, the Department of Mines, Industry Regulation and Safety (DMIRS) and the Mineral Research Institute of Western Australia (MRIWA) co-funded a comprehensive report that focused on evaluating the physical-chemical aspects of diesel exhaust emissions (DEE).⁷ This report contributed significantly to the understanding of DEE characteristics in underground mining environments which provided the foundation for further research.

Further research was conducted to investigate the potential health impacts of DEE exposure in collaboration with Curtin University, the Chemistry Centre, and the University of Western Australia (UWA).⁸ To facilitate this research, an underground gold mine in WA volunteered to host the study. During a two-week period, a total

⁴ Government of Western Australia. [Work Health and Safety Act 2020](#). March 2022

⁵ SLR Consulting Australia. [Research Report – Workplace Exposure Standard for Diesel Particulate Matter](#). December 2022

⁶ Safe Work Australia. [Model Work Health and Safety Act](#). April 2022

⁷ Curtin University. [Critical Review of Recent Diesel Exhaust Exposure Health Impact Research Relevant to The Underground Hardrock Mining Industry](#). 2019

⁸ Curtin University. [A Study of Nano Diesel Particulate Matter Behaviour and Physico-chemical Changes in Underground Hard Rock Mines of Western Australia](#). 13 June 2019

of 100 miners, including 20 above-ground and 80 underground workers, underwent a series of physical tests and were fitted with personal exposure monitoring equipment. The findings of this study highlighted the critical importance of monitoring DEE and implementing effective control measures to safeguard the health of workers. The research emphasised the significance of focusing on fuel and combustion efficiency of on-site diesel engines, implementing and maintaining efficient engine filtration systems, adhering to good ventilation design standards, and providing regular employee training on the importance of minimising emissions and controlling worker exposures.

The research recommended that mining operators continue to explore technological advancements in monitoring DEE and consider emerging epidemiological studies when developing long-term management strategies. These strategies align with good management practices for health and safety hazards and aim to mitigate potential risks associated with DPM exposure in the workplace. The *Guideline on Management of diesel emissions in Western Australian mining operations* was developed to assist mining operators to act proactively and promote a safe and healthy work environment.⁹

Following the research, in the Mining Industry Advisory Committee (MIAC) made recommendations to the Ministers responsible for occupational safety and health in WA, to implement of a WES for DPM in the mining industry.

CME supports continued research to validate the effectiveness of evolving technologies which mitigate DPM risk.

The AIOH Position Paper highlighted that studies used to determine occupational exposure limits for DPM are primarily focused on older diesel engines produced in the 1980s.¹⁰ In contrast, the exhaust emitted by newer non-transitional diesel engines (NTDE) after 2007 is significantly different in terms of exhaust composition, emission control technologies, genotoxic potency, and potential health effects. The SLR Report provides information on the composition and toxicity of DEE specifically related to older diesel engine technology predating 2007, while research on NTDE exhausts remains limited. The SLR Report suggests that NTDE and after-treatment technologies have the potential to significantly reduce particulate matter and mitigate the harmful effects of DEE.¹¹ However, the lack of consideration for factors such as clean fuel usage and modern diesel engine technology within the SLR Report raises concerns about the reliability of data. Additionally, the unique characteristics of the mining landscape including confined spaces, ventilation, and specific mining processes, can significantly influence the dispersion and concentration of airborne pollutants. However, the SLR Report does not adequately address these specific factors, making it challenging to generalise the findings to industry. To ensure the development of a generalisable WES, CME believes that further research which considers the mining environment, relevant after-treatment technologies and the potential impact of NTDE on the proposed DPM WES is imperative. This includes considering the differences in emissions of NTDE to ensure that any reductions in the proposed SWA DPM WES accurately reflects industry.

CME is concerned that the evidence presented in the SWA consultation paper in support of the proposed SWA DPM WES does not consider the modern workplace environment. CME recommends SWA undertake continued research into NTDE to ensure that introduction of a WES for DPM is generalisable and accurately reflects industry.

3. Existing State Regulation

The *Work Health and Safety (Mines) Regulations 2022* (the Mines Regulations) already prescribe a WES for DPM (the WA DPM WES), applying to all WA mining operations. Mine operators must ensure DPM does not exceed 100 µg/m³ of air in the workplace within an 8-hour working day. This was first introduced in February 2020 under the *Mines Safety and Inspection Regulations 1995*.^{12,13} The exposure level set in the WA DPM WES is consistent with the Australian Institute of Occupational Hygienists (AIOH) [Diesel Particulate Matter and Occupational Health Issues Position Paper](#) (the AIOH Position Paper), which recommends limiting worker exposure to DPM to as low as reasonably practicable (ALARP) below a value of no more than 100 µg/m³.¹⁴ The existing WES applied in WA mining represents a balance between protecting worker health and ensuring the feasibility and practicality of implementation within industry, complemented by industry controls (as detailed in Section 4). CME members strongly support this regulatory approach and note it incentivises

⁹ Department of Mines and Petroleum. [Management of diesel emissions in Western Australian mining operations](#). 2013

¹⁰ Australian Institute of Occupational Hygienists. [Diesel Particulate Matter and Occupational Health Issues Position Paper](#). August 2017

¹¹ Piia Taxell and Tiina Santonen. [Diesel Engine Exhaust: Basis for Occupational Exposure Limit Value](#). August 2017

¹² Work Health and Safety (Mines) Regulations 2022. Reg 656B.

¹³ Government of Western Australia. [Mines Safety and Inspection Regulations 1995](#). 8 December 1995

¹⁴ Australian Institute of Occupational Hygienists. [Diesel Particulate Matter and Occupational Health Issues Position Paper](#). August 2017

continuous improvement and proactive steps to further minimise health risks, rather than focusing on compliance with the maximum allowable limit. This is consistent with the risk-based approach being adopted across the industry.

4. Practical Application

CME is concerned with the practical application of the proposed SWA DPM WES as it would have a significant impact on industry. This may include an elimination of diesel vehicles in underground mine operations due to the inability to comply with the proposed SWA DPM WES in the short term. Immediate compliance would require a heavier reliance on lower-level controls like respiratory protection, noting the full elimination of diesel equipment and mobile plant is not currently feasible. One of the challenges with additional personal protective equipment (PPE) in underground mining is managing heat-related issues, as PPE can impede proper ventilation, cause discomfort, and increase the risk of heat stress or heat-related illnesses for workers in hot and humid environments.

Similar to the movement towards NTDE, the transition towards electrification and automation within the resources industry is seen as a longer-term solution to DPM exposure. However, while industry is committed to decarbonising and ongoing, research and development will over time progressively enable the electrification of mine fleets and equipment, this is not likely to be a short- or medium-term solution to DPM based on available technology.

CME anticipates the proposed SWA DPM WES would result in industry needing to introduce significant additional controls to manage WES to the level required. This could include:

- Increased Ventilation Requirements – The modification to existing infrastructure and ventilation systems may present a significant cost and impact to the site's ability to operate.
- Further Restrictions on Diesel-Powered Vehicles – This may include phasing out diesel-powered vehicles where alternatives are available. Without an appropriate transition period, this could pose a significant upfront cost to industry, which may also introduce a short-term high demand for such vehicles.
- Engine and Exhaust Modifications – For example, it may require replacing or retrofitting existing equipment within a short timeframe.
- Increased Reliance on Respiratory Protective Equipment – A heavier reliance on PPE, which is viewed as a low-level control, for all workers. This PPE may include respirators and dust masks.
- Compliance Monitoring – If there are increased compliance monitoring requirements, industry may need to invest further in additional testing equipment to adhere. This may impose further burdens on an already established and fit-for-purpose compliance framework. For example, industry implements action levels, pre-start inspections and myriad other compliance and mitigation tools to ensure safety, efficiency and compliance.

The WA resources sector is already steadfast in its application of best practice to reduce worker exposure to DPM. Therefore, it is vital to ensure that the desired safety outcomes will be achieved while considering the feasibility and practicality of any additional restrictions. This approach is essential to prevent imposing additional burdens without clear benefits. Additional industry concerns regarding the proposed SWA DPM WES are outlined below.

4.1 Exceedances

DMRIS is the government agency responsible for regulating workplace safety in WA, including the mining sector. Since the 1980s, mine sites in WA have conducted atmospheric testing to ensure compliance with worker exposure standards. These results are submitted to DMIRS as a means of verifying compliance, prioritising remedial actions and evaluating the effectiveness of control measures. Since 2003, the mining industry has been providing monitoring results for elemental carbon, specifically DPM, and a total of 22,120 DPM monitoring results have been submitted, with 1.93% of the samples exceeding the WA mines DPM standard of 100 µg/m³ in 2022.

CME requested an analysis of the data from 2018 to the present from DMIRS, which indicates that approximately:

- 98.5% of samples comply with the current WA 100µg/m³ standard
- 70% would comply with a 50µg/m³ standard

- 62% would comply with a 35µg/m³ standard
- 1.2% would comply with a 15µg/m³ standard, and less than 1% when adjusted for a typical 12-hour shift.

CME acknowledges that the atmospheric monitoring findings provided above pertain to the environment rather than direct worker exposures. The purpose of environmental monitoring and reporting exceedances is to notify regulators about situations where there is a potentially high risk of DPM exposure or inadequate controls, such as insufficient ventilation. This enables operators to implement measures that enhance the protection of worker health. CME believes consideration should be given to the ability of regulators to effectively monitor and address reports of DPM WES exceedances. For example, the proposed SWA DPM WES would make reporting exceedances significantly harder to manage, and there is a need for clarity on how this limit would be interpreted. There are also concerns about whether a single exceedance would be considered a prosecutable offence as part of ongoing SWA discussions to shift from WES to workplace exposure limit's (WEL), or if there is flexibility to account for full employment risk. CME consider it is essential for workplaces to have a clear understanding of the expectations, reporting requirements, and investigation processes outlined by SWA so state regulators and workplaces can ensure they can adequately prepare and comply.

4.2 Action Level

It is considered best practice in industry to apply an action level to a specified concentration or level of a hazardous substance in the workplace environment that, when exceeded, triggers specific actions and interventions to control and mitigate exposure risks. It is a threshold set below the WES itself and serves as an early warning sign or trigger point to initiate proactive measures. When the concentration of a substance surpasses the action level, the PCBU investigates, and implements control measures to reduce exposure and protect the health and safety of workers. The action level is typically half of the WES.

If the proposed SWA DPM WES was imposed, the action level would be approximately 7.5 µg/m³ for resource companies. With an exposure level this low, measuring and monitoring exposure would present challenges. For example, sampling and analysis techniques may not be capable of reliably detecting and quantifying extremely low concentrations of a substance, impacting an organisation's ability to undertake preventative monitoring activities. The reduced measurability of a lowered WES can also have implications for regulatory compliance, making it harder to determine whether exposure levels are compliant with the reduced WES.

CME recommends further consideration of the measurability of the proposed WES DPM action level to ensure feasibility and enable workable implementation in resource sector workplaces.

4.3 Time Weighted Averages

The proposed SWA DPM WES is an 8-hour average, which means it is based on an exposure to the worker of 8 hours a day, 5 days a week. Deviations from this traditional shift pattern are the norm within industry, and there is already recognition in WA that appropriate adjustments need to be made to ensure there is an equivalent degree of protection. Under guidance from the DMIRS, the WA resources sector carries out shift length adjustment using the *Institut de recherche Robert-Sauvé en santé et en sécurité du travail* (IRSST) method. This adjustment is in accordance with the DMIRS Guidance [Adjustment of atmospheric contaminant exposure standards](#).¹⁵

Applying the IRSST method for shift adjustment to the proposed SWA DPM WES for a typical resources sector shift pattern results in a 12-hour TWA limit of 10µg/m³, which has not been addressed during the consultation process. This further reduction will magnify the previously mentioned concerns regarding action levels, exceedances, and measurability. CME believes it is essential to consider these limitations and explore appropriate strategies to ensure accurate monitoring and control of workplace exposures when implementing reduced WES values.

CME does not support the introduction of a Time Weighted Average (TWA) for diesel particulate matter of 15 µg/m³ due to the further technical and monitoring limitations presented by application over a 12-hour shift arrangement.

¹⁵ Department of Mines, Industry Regulation and Safety. [Adjustment of atmospheric contaminant exposure standards](#). March 2019.

5. Industry Controls

While the WA DPM WES is considered to be an upper limit, industry's commitment to best practice safety and health management sees many sites already operating below the current standards and in accordance with the DMIRS research recommendations. The WA resources sector has implemented a wide range of controls to effectively reduce the risk of worker exposure to DPM in the workplace and applying the mitigation hierarchy where the risk of exposure cannot be completely eliminated. These controls, among others, demonstrate the industry's commitment to worker safety. Example controls include:

- Ventilation Design and Management – Proper ventilation systems are designed and maintained to ensure adequate air exchange and reduce the concentration of DPM in work areas. Effective ventilation helps to mitigate potential exposure and maintain a healthier working environment.
- Restricted Vehicle Access: Industry employs measures to limit the number of vehicles entering specific areas. By controlling vehicle movements, operations can effectively manage and minimise the emission of DPM from diesel-powered equipment.
- Low Emission Engine Upgrades – Industry continually explores options to upgrade engines and equipment with low emission technologies. Upgrading to engines with improved combustion efficiency and reduced emissions helps to lower the overall DPM output.
- Diesel Particulate Filters – Diesel particulate filters (DPFs) are widely utilised to reduce DPM emissions. These filters capture and trap particulate matter, effectively reducing the amount of DPM released into the workplace air.
- Emissions Testing Schemes – Regular emissions testing is conducted to ensure compliance with regulatory requirements and identify any potential issues. By monitoring emissions, mining operations can take corrective actions to maintain optimal DPM control.
- Hybrid and Electric Equipment Trials – The industry is actively exploring alternative technologies, such as hybrid and electric equipment, to further reduce reliance on diesel-powered machinery. These trials aim to assess the feasibility and effectiveness of these alternatives in minimizing DPM emissions.
- Real-time DPM Monitors – Real-time DPM monitoring systems are utilized to provide timely information on exposure levels. These monitors enable continuous monitoring of DPM concentrations, facilitating the review of work practices and implementation of additional controls if necessary.
- Respiratory Protective Equipment – In instances where exposure cannot be eliminated, the use of respiratory protective equipment, including Powered Air Purifying Respirators (PAPRs), is employed to provide additional protection to workers. These devices help filter and purify the air being breathed, reducing the inhalation of harmful particles.
- Battery Electric Vehicles (BEV) – Encouraging innovation and collaboration with Original Equipment Manufacturers to expedite the availability of Battery Electric Vehicles, which continuously improve as new technologies emerge.

Further, under the Mines Regulations, it is a requirement for a mine site operation to create a health management plan (HMP).¹⁶ A HMP is a document that outlines the identification, assessment, and control of hazards in the workplace. DPM is a known occupational hazard in industry and as part of the hazard identification process, employers and duty holders are expected to assess the potential risks associated with DPM emissions and include them in the HMP if they are deemed significant. This enables the implementation of appropriate control measures and monitoring strategies to minimise exposure and protect workers. Since its introduction it has contributed to increased compliance with the current WA DPM WES (1.64% non-compliance).

By implementing the above controls and measures, industry aims to minimise worker exposure to DPM and create safer working environments. These practices demonstrate a proactive approach to reducing DPM-related risks and highlight industry's commitment to safeguarding the health and well-being of its workforce. To achieve significant reductions in exposures, a holistic approach must serve as the foundation to any proposed change. CME believes merely lowering the DPM WES is insufficient to sustainably accomplish reductions.

¹⁶ Work Health and Safety (Mines) Regulations 2022. Reg 622.

CME strongly recommends that a holistic approach must serve as the foundation to sustainably accomplish a reduction of worker exposure to diesel particulate matter, involving a broad suite of controls.

6. Alternative WES

CME supports sustainable reductions in the WES for DPM and believes that adopting an alternative WES of 50µg/m³ with an adequate transition period would enable sufficient time for planning and implementing higher-level controls across industry.

CME acknowledges that not every workplace is at the same place in their journey. Factors such as size, available resources and internal priorities can all contribute to variations in company safety maturity towards the management of worker exposure to DPM. An adequate transition period recognises that progress is not linear, and PCBU's face various challenges that influence the pace of continuous improvement. Allowing workplaces to forward plan and prepare for the necessary changes, provides an opportunity to adjust and integrate operations, ensuring a smoother transition. This approach also acknowledges the complexity of implementing new controls and technologies.

CME considers the alternative WES is aligned to a commitment to substantial reductions in exposure levels in WA. This target aligns with the industry's aspirations for continuous improvement in worker safety and health. By setting a clear and achievable long-term objective, CME member companies can work towards implementing the necessary measures to reach this goal effectively.

CME supports sustainable reductions in the DPM WES and propose an alternative WES of 50µg/m³ with an adequate transition period.

6.1 Regulatory Impact Assessment

CME considers a regulatory impact assessment should be undertaken. Such an assessment serves as a crucial tool to understand the potential consequences and impacts of regulatory changes to industry. It would provide a comprehensive analysis of the proposed SWA DPM WES, offering insights into its implications, benefits, costs, and potential risks. The outcomes of a RIS process would enable an assessment of whether the proposed reduction would contribute to reducing health hazards and enhance the work, health and safety landscape. This process should consider both resources and research. CME believes that by conducting such analysis, SWA can ensure that any changes to the WES are evidence-based, effective, and contribute to the overall well-being of workers balanced against the impacts and practicality associated with compliance. This would ensure that changes made are ALARP and operationally achievable, with consideration to the broader impacts to industries across Australia.


CME recommends a regulatory impact assessment be undertaken to identify the significance of the impacts to industry.

7. Conclusion

The WA resources sector is committed to the health and safety of its workforce and CME acknowledges the proposed SWA DPM WES, however, believes that the proposed reforms will not effectively enhance worker safety and a more holistic approach should be considered before changes are made. As with all health and safety hazards, industry takes a risk-based approach to the management of occupational health hazards, involving a broad suite of controls. CME welcomes the SWA's commitment to consulting with industry to identify feedback on the priority areas outlined.

CME looks forward to the opportunity to continue engagement on this important matter. Should you have any questions regarding this submission, please contact Naomi Plummer, Policy Adviser – Health, Safety and People on 0439 843 968 or n.plummer@cmewa.com.

Yours sincerely,



Rebecca Tomkinson
Chief Executive Officer

Appendix I – SWA consultation survey on a proposed DPM WES - Questionnaire

1. Name or organisation

The Chamber of Minerals and Energy of Western Australia (CME)

2. Email used to log into Engage

n.plummer@cmewa.com

If you are commenting on particular aspects of the expert report, please identify the particular sections or pages concerned. Your response should, where possible, provide evidence to support your statement.

1. Do you support the proposed workplace exposure standard (WES) for diesel particulate matter (DPM) to protect workers from the adverse health effects of exposure to diesel engine emissions (DEE)?

No, CME does not support the proposed DPM WES for the reasons outlined in our submission.

2. What are your reasons for your response to Question 1? Please provide evidence or information to support your response.

These reasons are outlined in Sections 2,3 and 4 of our submission.

3. Is there an alternative WES to DPM as respirable elemental carbon, or additional WES that should be considered to protect workers from DEE? Please provide evidence or information to support your response.

CME supports sustainable reductions in the WES DPM and believe that adopting an alternative WES of 50µg/m³ with an adequate transition period would enable sufficient time for planning and implementing higher-level controls across industry. Please see outlined in Section 6 of our submission.

4. What changes would you need to make in your workplace (over and above any controls currently in place) to ensure workers and others at the workplace are not exposed to levels of DPM above the proposed WES?

a. Please include in your response:

- i. a description of the control measures currently in place at your workplace(s) to minimise exposure of workers and others to DEE.
- ii. details of any costs to implement the WES for DPM (e.g., upgrade of ventilation systems in area X, costing approximately \$XXX).

Please see outlined in Section 4 and 5 of our submission.

5. Is there additional evidence or information that you think should be considered?

Additional evidence is outlined in our submission, in particular Section 2

6. Are there any additional comments you would like to make? (free text box with option to upload an attachment)

N/A