Energy Supply Association of Australia www.esaa.com.au

ABN 98 052 416 083

Level 14
50 Market St
Melbourne

GPO Box 1823
Melbourne
Victoria 3001

P +61 3 **9205 3100**
E info@esaa.com.au

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Mr Lee Eeles
Director, Chemical Policy Section
Department of the Environment
GPO Box 787
Canberra ACT 2601

Lodged (by email): lee.eeles@environment.gov.au

Minamata Convention on Mercury – Draft Guidance on BAT/BEP for Mercury Emissions

The Energy Supply Association of Australia (esaa) welcomes the opportunity to make a submission to the United Nations Environment Programme's (UNEP) Draft Guidance on Best Available Techniques (BAT) / Best Environmental Practices (BEP) for Mercury Emissions.

The esaa is the peak industry body for the stationary energy sector in Australia and represents the policy positions of the Chief Executives of 37 electricity and downstream natural gas businesses. These businesses own and operate some $120 billion in assets, employ more than 59,000 people and contribute $24.1 billion directly to the nation's Gross Domestic Product.

The draft guidance document provides a wide ranging and comprehensive overview of BAT/BEP for controlling mercury emissions from coal fired power plants and coal fired industrial boilers. This information will provide a useful point of reference for understanding and valuing the options available for monitoring, controlling and where feasible, reducing mercury emissions from coal-fired generation plant. But it is important to recognise the impact of implementing such measures will vary in accordance with regional specific factors.

The composition of the electricity generation fleet and the level of current mandated policy and regulatory measures on mercury releases within that region are highly relevant in this regard. To this end, it should be noted that moving beyond current mercury limits in Australia and requiring the existing coal-fired generation fleet to implement additional air pollution control system (APCS) technologies and other measures, as proposed in the BAT/BEP guidance, requires careful consideration. This includes an assessment of the potential impact on electricity supply costs, as well as security and reliability of supply in the Australian context. Consideration will also need to be given to the impact on the well-established ash recovery and reuse industry, which could be compromised by more stringent controls.

There are two main determinants of an electricity generation plant's output of electricity and emissions – capital equipment and fuel type. The commissioning of a generation facility requires complex decisions relating to the inter-relationship between the capital equipment and fuel type. Once a decision has been made with regard to the appropriate fuel source (e.g. black/brown coal, natural gas, solar, hydro) and associated capital, it is usually prohibitively expensive to change either the capital equipment or the fuel source.

Accordingly, the imposition of emissions restrictions are best considered prior to the commissioning of new facilities. Where this isn't achieved, constraints on emissions have cost implications for the existing fleet of electricity generation assets. In the context of the Minamata Convention on Mercury, the impacts will be directly borne by the coal-fired power generation sector with potential flow on implications for energy supply.

Given the low mercury content of Australian coal relative to the United States, Europe and other international resources, mercury emissions from coal-fired generation plant are lower in Australian compared to plants in other regions with equivalent emission control technologies. Further, power station pollution control technologies such as activated carbon injection (ACI) and the co-beneficial removal technologies have not been required to comply with existing statutory federal and state emission controls and limits and ambient air quality standards for mercury, NOx and SO2.

Should the existing electricity generation fleet be required to comply with the Mercury BAT/BEP guidance proposed, this would likely render existing coal-fired generation plant commercially unviable, which would create challenges for maintaining security of supply and increase prices for electricity consumers. In this regard, the BAT/BEP guidance provides limited analysis around the cost of retrofitting existing plant (see Section 3.5.1) and potentially downplays the overall capital costs. For example, the use of $/kW units in Table 5 gives the impression the capital cost of installing co-benefit technology is not excessive, but the reality is that installing wet flue gas desulfurization (FGD) technology on a 200 MW unit would cost in the order of US$106 million using these costings. Given an installed capacity of approximately 29,000 MW in Australia, this equates to a cost of around AU$20.8 billion.[1] The cost of retrofitting existing plant with this technology could be even higher, depending upon the facility in question.

Given the existence of regulatory limits for releases of mercury and other air pollutants in one form or another in Australia, there is a range of BEP measures and APCS technologies for mercury already in place for the existing coal-fired generation fleet. These feature in the draft guidance on BAT/BEP for mercury emissions. As such, where feasible the imposition of additional APCS technologies and other controls provided in the BAP/BEP guidance should only be considered as an option for potential application to new coal-fired generation plant and be dependent upon the normal environment impact assessment (EIA) processes, approvals and cost benefit considerations.

Specific comments relating to the drafting of the BAT/BEP guidance has been provided in Attachment 1. The Association would welcome the opportunity to discuss any of the issues raised in this submission with the Department of the Environment, along with any other matters as they arise.

[1] This estimate is based on an exchange rate of 1.00 USD = 1.35619 AUD, current as at 23 July 2015.

Any questions about our submission should be addressed to Tim Reardon, by email to tim.reardon@esaa.com.au or by telephone on 0423 141 031.

Yours sincerely

Tim Reardon
General Manager, Advocacy

Attachment 1

1. Cost of mercury removal does not take into account the lower mercury rate of discharge in Australian conditions.

Australian coal contains very low levels of mercury by world standards, which is one of the factors that make it a highly valuable source of energy. As such, reporting the cost of mercury removal in terms of $/kg potentially understates the costs faced in Australia.

2. The energy content figures reported in Section 2.1 appear to be incorrect.

The energy content of coal is reported in units of kJ/kg (e.g.19.26 kJ/kg for Lignite) in Section 2.1. The Association considers these units are incorrect and should be replaced with MJ/kg.

3. The use of emissions factors in still relevant in the Australian context.

The comment in Section 6.6 relating to the use of emissions factors, although in context, does potentially play down the use of the emissions factors used in the industries reporting to the National Pollutant Inventory. But it is probably a correct view in terms of the guidance document and mercury processes.

4. Table 1 (page 7) excludes Australian lignite.

The range of mercury content in Victorian and South Australian lignite coal is published in the Australian National Pollutant Inventory Fossil Fuel Electric Power Generation Emissions Estimate Technique Manual, V3.0 (Jan 2012) page 61. This information is relevant to Table 1 of the BAP/BEP guidance.

5. Consideration should be given to the costs of monitoring mercury emissions

In Section 6 (pg. 36-37), consideration should be given to the inclusion of typical costs for continuous emissions monitoring systems (CEMS) and other types of monitoring methodologies as they relate to mercury emissions, given installation and operating costs can be substantial.