



DOC21/163879-2

Sunset Power International Pty Ltd
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By Email: environment@de.com.au
Attention: Mr Justin Flood - Executive Manager Sustainability

Dear Mr Flood,

EPL 761 – Licence variation application – Further Information requirements

I refer to your application to vary Environment Protection Licence 761 (Licence) for the Vales Point Power Station which was received by the Environment Protection Authority (EPA) on 23 December 2020.

The application seeks to vary condition L3.8 of the Licence to extend the exemption of Group 5 standards of concentration under Protection of the Environment Operations (Clean Air) Regulation 2010 for nitrogen oxides (NOx) emissions from Points 2 and 3 at Vales Point Power Station.

The EPA wrote to you on 19 February 2021 advising that we required additional information in order to assess the application, and you wrote to the EPA on 5 March 2021 seeking input on specific questions and assessment requirements.

The EPA has prepared the attached document (Attachment A) that details the further information the EPA requires you to provide which it considers necessary and relevant to the licence variation application.

I apologise for the time it has taken to respond to your last email and trust that the attached document provides sufficient details of the EPA's requirements.

Should you have any further questions about this matter, please contact Megan Whelan on (02) 4224 4109 or email RegOps.MetroRegulation@epa.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Adam Gilligan'.

10 May 2021

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**ATTACHMENT A – Assessment and other information requirements in relation to the
Variation Application for Vales Point Power Station**

1) Assessment objective

The objective of the assessment is to compile sufficient, robust and transparent information that the EPA considers necessary and relevant to the environment protection licence variation application (Variation Application) submitted by Sunset Power International Pty Ltd trading as Delta Electricity (Licensee), in respect of the Vales Point power station.

2) Legislation, policy and assessment methods

- a) The assessment must be undertaken in accordance with, and demonstrate compliance with, the following:
 - i) *The Protection of the Environment Operations Act 1997;*
 - ii) *The Protection of the Environment Operations (Clean Air) Regulation 2010;*
 - iii) *The Approved Methods for the Modelling and Assessment of Air Pollutants in NSW;*
 - iv) *The Approved Methods for the Sampling and Analysis of Air Pollutants in NSW;*
 - v) *The Tiered Procedure for Estimating Ground-Level Ozone Impacts from Stationary Sources.*
- b) All assessment methods used must be robustly justified. Particular emphasis must be given to the justification of any adopted methods that differ from current published EPA policy, or where there is no current EPA published method.

3) Data and references

- a) The assessment must reference and analyse reasonably available data and information, including but not limited to the following:
 - i) Government and industry ambient air quality monitoring data;
 - ii) Government and industry meteorology data;
 - iii) *The Air Emissions Inventory for the Greater Metropolitan Region of NSW;*
 - iv) Industry emission monitoring data;
 - v) *Vales Point Power Station (Delta Electricity) NO_x Pollution Reduction Study (PRS) Final Report (2017);*
 - vi) European Commission JRC Science for Policy Report - *Best Available Techniques (BAT) Reference Document for Large Combustion Plants*, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control).
 - vii) *Commission Implementing Decision (EU) 2017/1442 of 31 July 2017 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for large combustion plants.*
- b) The assessment must demonstrate that all reasonable efforts have been taken to ensure the quality, integrity and representativeness of the data and information used in the assessment.

4) Variation Application description, need and justification

- a) The assessment must include:
 - i) A detailed description of the Variation Application including interactions with other existing, approved or proposed projects – both on the premises and on other premises.
 - ii) The strategic need and justification for the Variation Application having regard for relevant matters, including but not limited to:
 - (a) analysis of alternatives to the Variation Application, and
 - (b) energy security and reliability in NSW.

5) Benchmarking and Evaluation of Potential Emission Control or Mitigation Measures

- a) Provide a detailed description of existing air pollution emission controls and management measures used in conjunction with coal fired boilers at the premises.
- b) Benchmark existing Vales Point Power Station air pollution controls, emission performance and emission limits against coal fired power stations in NSW and other jurisdictions (both Australia and internationally). The benchmarking must have regard for plant vintage, boiler configuration and technology and receiving environment.
- c) Provide a detailed feasibility evaluation of additional NO_x and SO_x emission control, or mitigation measures that are not currently used at the premises. For the purpose of this requirement, feasibility is taken to be what is technically possible to be implemented at the premises from an engineering perspective.
 - i) Detail the additional analysis that has been conducted to update, expand and extend the analysis of potential controls identified in the document titled: *Vales Point Power Station (Delta Electricity) NO_x Pollution Reduction Study (PRS) Final Report (2017)*; required by Condition U1 of the EPL No. 761.
 - ii) As a minimum, consideration must be given to the following NO_x emissions controls:
 - (1) Combustion optimisation
 - (2) Low NO_x Burners
 - (3) Selective non-catalytic reduction (SNCR)
 - (4) Selective Catalytic reduction (SCR)
 - (5) Other potential options beyond operational changes
 - iii) As a minimum, consideration must be given to the following SO_x emissions controls:
 - (1) Dry flue gas desulfurisation
 - (2) Wet scrubbing
 - (3) Semi-dry scrubbers
 - (4) Sorbent injection
 - (5) Use of lower sulfur fuels
- d) Based on the evaluation in item 5c (above), identify feasible measures that could be implemented to reduce NO_x and SO_x emissions at the premises.
- e) For each mitigation measure evaluated in item 5c (above) that is determined not to be feasible for implementation, detailed justification with supporting evidence on why these measures are not feasible for implementation must be provided.

6) Air Quality Impact Assessment (AQIA)

The AQIA must be undertaken in accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (The Approved Methods) and address as a minimum the following:

- a) Describe and analyse the receiving environment in detail using contemporary datasets. The Variation Application must be contextualised within the receiving environment (i.e. local, regional and inter-regional). The description must include, but need not be limited to:
 - i) meteorology and climate;
 - ii) ambient air quality
 - iii) topography;

- iv) surrounding land-use; and
- v) receptors.
- b) Assess the risk and potential impacts associated with point source emissions from the Variation Application. The assessment of risk relates to environmental harm, risk to human health and amenity.
- c) The assessment of impacts must be conducted on the local and regional/inter-regional (including the Greater Metropolitan Region) receiving environment.
- d) Any assumptions made during the preparation of the AQIA must be accompanied by a detailed description, supporting evidence and must be robustly justified.

Assessment of impacts on local air quality

The assessment of impacts on local air quality must include, but need not be limited to:

- e) Detailed review and analysis of current and historic NO_x, SO_x and particle emissions from the premises. Analysis must draw on at least 10 years of available data.
- f) Detailed review and analysis of current and historic ambient NO₂, SO₂ and particle concentrations within the local receiving environment. Analysis must draw on at least 10 years of available data.
- g) Quantification of the incremental (power station only) ground level concentrations for NO₂, SO₂ and particles.
- h) Dispersion modelling scenarios, including but not limited to:
 - i) emissions representative of “current normal” operations (i.e. current plant configuration and operating regime);
 - ii) emissions at existing licence limits (i.e. NO_x 1,500 mg/m³; SO₂ 1,700 mg/m³; particles 50 mg/m³);
 - iii) emissions representative of Group 5 and Group 6 limits for NO_x (i.e. 800 mg/m³ and 500 mg/m³);
 - iv) emissions representative of feasible mitigation measures identified in item 5d (above).
- i) The methodology used to account for chemical transformation (NO to NO₂ conversion) must be based on contemporary and representative data and undertaken in accordance with the Approved Methods or as otherwise agreed by the EPA.
- j) Quantification of cumulative impacts for NO₂, SO₂ and particles accounting for:
 - i) other existing power stations;
 - ii) other significant existing emission sources;
 - iii) any currently approved developments which would be significant emission sources, and
 - iv) background air quality.

Assessment of impacts on regional air quality

The assessment of impacts on regional and inter-regional air quality must include, but is not limited to:

- k) Detailed review and analysis of current and historic ambient NO₂, SO₂ and particle concentrations within the regional and inter-regional receiving environment. Analysis must draw on at least 10 years of available data.
- l) Modelling of ground level ozone, NO₂ and secondary particle impacts on the regional and inter-regional receiving environment, including the Greater Metropolitan Region.
 - i) Evaluation of impacts based on the current plant configuration and operating regime.
 - ii) Evaluation of additional emission abatement, representative of:

- (1) NO_x emission controls capable of achieving an emission concentration limit of 800 mg/m³;
 - (2) NO_x emission controls capable of achieving an emission concentration limit of 500 mg/m³;
 - (3) SO_x emission controls capable of achieving 50% and 90% control efficiency;
 - (4) abatement scenarios otherwise agreed to by the EPA based on feasible control options identified in 5d (above).
- m) A detailed quantitative photochemical assessment, evaluating the impacts on ambient ozone and nitrogen dioxide due to Vales Point Power Station based on the modelling scenarios listed in item (l) above.
- i) The photochemical assessment must follow the Level 2 detailed procedure set out in the EPA's *Tiered Procedure for Estimating Ground-Level Ozone Impacts from Stationary Sources*.
- n) A detailed quantitative assessment of secondary particle formation due to Vales Point Power Station operations based on the modelling scenarios listed in point (l) above. The secondary particle assessment must also present results for:
- i) Secondary particle concentrations due to NO_x emissions from the premises;
 - ii) Secondary particle concentrations due to SO_x emissions from the premises;
 - iii) Total secondary particle concentrations due to emission from the premises;
 - iv) Population weighted annual average PM_{2.5} concentrations for each local government area in the study domain;
 - v) Population weighted annual average PM_{2.5} concentration aggregated across the study domain.
- o) Results and conclusions of the secondary particle and photochemical pollution assessments must be validated and put in context of findings from comparable published chemical transport model and particle characterisation studies.
- p) The regional air quality impact assessment must undergo independent expert peer review prior to submitting the assessment to the EPA.
- i) The independent expert peer reviewer must be approved in writing by the EPA prior to the review being undertaken.
 - ii) The independent review must be submitted to the EPA with the final assessment.

7) Identification and assessment of practical measures for emissions control and mitigation of air pollution impacts

- a) Based on the findings of items 2-6 (above), and factoring any additional relevant considerations, nominate practical measures that can be implemented to mitigate air pollution impacts from the premises. Practicability may have regard for factors including, but not limited to:
- i) Air quality and health impacts
 - ii) Expected plant life
 - iii) Plant efficiency
 - iv) Energy security and reliability in NSW
 - v) Cost
 - vi) Implementation timeframe
 - vii) Technical and engineering constraints`

The discussion and conclusions about practicability must be supported by detailed analysis and robust evidence.

- b) Characterise the expected emission performance during routine operation with the practical control measures nominated in item 7a (above).
- c) Propose an emission limit associated with proper and efficient operation of the practical measures nominated in item 7a (above).
- d) Recommend additional detailed investigations required to support the implementation of the practical measures nominated in 7a (above), and a timeframe for completing those investigations.
- e) Propose an emissions monitoring and reporting framework suitable for robustly demonstrating that practical mitigation