

VICTORIAN CIVIL AND ADMINISTRATIVE TRIBUNAL

Applications for Review:

P1816/2011, P1818/2011, P1820/2011 P1822/2011, P1829/2011,
P1846/2011

Dual Gas Demonstration Project

Works Approval WA 67043

Expert Witness Statement by way of reply
to the Report prepared by Dr Bellair

Prepared by Dr Lynette Denison

October 2011

1 Introduction

1 I have prepared an expert witness statement in relation to the proceedings currently before the Victorian Civil and Administrative Tribunal relating to the Dual Gas Demonstration Project ("Dual Gas Demonstration Project Works Approval WA 67043: Expert Report" dated October 2011) (**Expert Witness Statement**).

2 Corrs Chambers Westgarth have asked me to review and respond to the following report filed by Dual Gas Pty Ltd in relation to the VCAT proceedings:

- "Air Quality Assessment Report" prepared by Dr J T Bellair (dated 22 September 2011).

3 I have used the same abbreviations and defined terms in this report as in my Expert Witness Statement.

2 Air Quality Assessment Report prepared by Dr J T Bellair, 22 September 2011

4 The expert witness statement prepared by Dr Bellair on behalf of Dual Gas addresses a number of issues including the interpretation of the State Environment Protection Policies in Victoria and how they apply in the assessment of the Dual Gas Demonstration Project (**DGDP**).

5 I have set out my comments on the parts and sections of Dr Bellair's expert witness statement below.

2.1 Part I

6 Dr Bellair's description of the air quality management policies in Victoria ignores the significant changes made to the State Environment Protection Policy (Air Quality Management) (**SEPP (AQM)**) when it was reviewed in 2001.

7 The 1981 policy focussed primarily on meeting numbers and end of pipe controls for controlling pollution. In 2001, the 1981 SEPP was revoked and the new SEPP (AQM) had a major shift in focus to minimising emissions, rather than just meeting numbers, and to drive continuous improvement in air quality.

8 All generators of emissions must manage their emissions by avoiding and minimising emissions in accordance with the waste hierarchy and control their emissions by application of best practice.

9 The current policy does not allow uncontrolled emissions. Meeting the objectives in the policy is secondary to minimising emissions. The residual emissions remaining after the application of best practice for control of emissions must, as a minimum, meet the relevant objectives in the policy.

10 The shift in focus of the SEPP was in acknowledgement that for a number of pollutants, including those relevant to the DGDP, there was no safe level of exposure. Dr Bellair's statement ignores these requirements.

11 Dr Bellair states that there was no change in the underlying scientific and philosophical approach in the SEPP and that most of the elements were retained from the 1981 SEPP. This is incorrect.

2.2 Part I – Section 1

- 12 In this section, Dr Bellair describes the factors which influence air quality. I agree with his assessment of these factors.
- 2.3 Part I – Section 2**
- 13 Section 2 of Dr Bellair's statement sets out how he interprets the application of the SEPP(AQM) to the assessment of works approval applications. His focus is again on meeting numbers, emission limits and design criteria, rather than minimising emissions.
- 2.4 Part I – Section 2.1**
- 14 Dr Bellair's account of Schedules F and his application of it to this matter are incorrect. Schedule E specifies the emission limits for new stationary sources in air quality control regions and the material in the table at the top of his page 6 is from Schedule E. Schedule F simply lists the Air Quality Control Regions to which these apply. The relevant schedules are D and E.
- 15 In addition, I disagree that the relevant source description in the table on the top of page 6 of Dr Bellair's statement for oxides of nitrogen is "Fuel Burning Units.. having a maximum heat input greater than 150,000 MJ/h gross..". In my opinion, the relevant category is "Gas turbines for electricity generation with a rated output equal to or greater than 30MW", which reduces the emission limit from 0.5g/m³ for liquid or solid fuels and 0.35 g/m³ for gaseous fuels to 0.07 g/m³ for gaseous fuels and 0.15 g/m³ for other fuels.
- 16 Dr Bellair refers to the NOx emission limit of up to 0.78 g/m³ for large solid fuel-fired power station boilers. I do not consider that this is the appropriate NOx emission limit for the DGDP. I also note that, even if 'power station boilers' was the correct category for the DGDP, the NOx emission limit is not 0.78 g/m³ (as stated), but 0.70 g/m³ (which in certain circumstances may be 'relaxed' to 0.78). The grounds upon which any 'relaxation' may be appropriate have not been set out.
- 2.5 Part I – Section 2.2**
- 17 To the extent that Dr Bellair's interpretation of the best practice clause emphasises the combination of eco-efficient techniques over the minimisation of emissions, I do not agree with his interpretation.
- 2.6 Part I – Section 2.3**
- This section states the clauses from SEPP (AQM) regarding the management of local air quality. The requirements of Clause 27 are not complete and ignore some of the important information including the application of best practice for environmental management. In the table on page 7 of his report a list of relevant indicators and design criteria are presented. I agree that SO₂ and NO₂ are relevant indicators but both PM₁₀ and PM_{2.5} are also relevant to the DGDP and should have been included.
- 2.7 Part I – Section 2.4**
- 18 In Dr Bellair's discussion on the management of regional air quality, he refers to the intervention levels in Schedule B of the SEPP(AQM). These objectives apply in the management of local and not regional air quality and are not relevant in this context.
- 19 The same applies to the development of neighbourhood environment improvement plans. These again apply in the context of local not regional air

- quality and apply to manage the impact of cumulative sources of a pollutant on the local air environment. These are not applicable in the assessment of a works approval application for an individual industrial source.
- 20 Although intervention levels are referred to in the EPA Assessment Report on page 27, they were not used in the assessment of compliance with policy.
- 21 Dr Bellair's statement that the EPA has not developed an Air Quality Improvement Plan (**AQIP**) for the Latrobe Valley Air Quality Control Region is only partially correct. EPA has commenced the development of an AQIP for this area.
- 22 In Section 2.4 of Dr Bellair's statement, the objective listed for SO₂ annual average under the provisions of SEPP (AAQ) is incorrect. The correct value is 0.02ppm not 0.08ppm. The other objectives are quoted correctly.
- 23 Although Dr Bellair is correct in stating that the SEPP (AAQ) objectives do not apply to individual sources it is important to note that the standards apply everywhere in Victoria even though compliance for NEPM reporting purposes is assessed at 'performance monitoring stations' such as the one established in Traralgon.
- 24 The SEPP (AQM) and SEPP (AAQ) provisions apply to the whole State of Victoria. They do not only apply in populated centres only. Therefore the exceedances of the design criteria and air quality objectives in the SEPPs observed in Jeeralang Hill should not be ignored simply because they do not occur in the major towns. There are people who live in these areas and the provisions of SEPP (AQM) to protect human health are as relevant in these locations as they are in major towns and population centres.
- 2.8 Part II**
- 25 Dr Bellair's assessment of the DGDP as set out in Part II, Sections 3.1 – 3.2, is based only on the fact that he believes the emission limits and design criteria are met.
- 2.9 Part II – Section 3.2**
- 26 Dr Bellair's assessment of best practice is based largely on the fact that these numbers are met and that best practice is demonstrated for greenhouse gas (**GHG**) emissions. This ignores the requirement for minimisation of emissions for all pollutants by application of best practice.
- 27 In his assessment, the requirement for best practice is secondary to meeting the numbers which is an incorrect interpretation of the policy.
- 28 Uncontrolled release of pollutants is inconsistent with the focus of Clause 18 and 19 of SEPP (AQM) on the minimisation of emissions.
- 29 In addition, the policy principles as set out in Clause 7 of the SEPP (AQM) include that of integrated environmental management. This requires that the best practicable outcome should be pursued so that the management of impacts to one sector of the environment should not impact on another segment. This infers that there needs to be a balance of the GHG controls together with the control of emissions of SO₂ that may impact on human health.
- 30 As discussed in paragraphs 11-34 of my Expert Witness Statement, the new evidence on the health effects of SO₂ and the national and international policy

response to this evidence acknowledges that there are health effects below the current air quality objectives in the SEPPs.

- 31 The evidence also suggests that there is no safe level of exposure to SO₂ and therefore any increase in SO₂ may have an impact on the beneficial uses specified in the policy.
- 32 Therefore it cannot be considered that best practice for the minimisation of emissions of SO₂ as required by Clause 19 of SEPP (AQM) does not include the use pollution control equipment which is identified internationally as best practice for control of emissions from coal- based power stations.
- 33 Dr Bellair has done no assessment of the current best practice for control of SO₂ from coal-based power stations from which to conclude that the DGDP meets the requirement for best practice.
- 34 In addition, on page 16 of his statement, Dr Bellair quotes the EPA Assessment Report that states that historically SO₂ removal has not been required for power stations in Victoria. This is correct. However, 30 year old technology should not be considered as the current benchmark for new sources. These should be assessed against current international best practice for this industry sector.
- 35 There is discussion in Dr Bellair's statement about the potential role that the DGDP may play in the development of the CarbonNet project. This is not relevant to the assessment of the Works Approval Application and the potential impacts on human health and the environment.
- 36 Dr Bellair discusses the potential implementation of pre-combustion carbon capture technology sometime in the future. This however does not address the potential impacts on the health of the local community in the interim and does not justify the release of uncontrolled emissions of SO₂.
- 37 I disagree with Dr Bellair's conclusion that the SO₂ emissions comply with all relevant provisions of the SEPP, in that the release of uncontrolled emissions is not consistent with the underlying philosophy of the SEPP (AQM) for minimisation of emissions and the requirements of Clauses 18 and 19 of SEPP (AQM).
- 38 In addition, there are exceedances of the design criteria predicted.

2.10 Part II – Section 3.3

- 39 Dr Bellair's assessment of the impact on local air quality focuses on the point of maximum impact of the combined emissions and does not discuss the contribution of the DGDP where the maximum impact from the plant occurs.
- 40 Dr Bellair is correct that at the point of maximum impact the major contributor is the existing sources and this is where compliance with SEPP (AQM) is assessed. Although the emissions from the DGDP make a very small contribution at this location, the design criteria are exceeded and do not comply with the SEPP.
- 41 Allowing additional sources into an airshed that is already experiencing exceedances of the air quality objectives (both ambient air quality objectives and design criteria) without any pollution control equipment is not consistent with the policy aims and intent.

- 42 Clause 30 of the SEPP (AQM) states that for the purpose of maintaining or improving regional air quality within an Air Quality Control Region the EPA may require emission generators to reduce their emissions to a greater extent than required by Clauses 18 and 19.
- 43 In this case, the modelling presented as part of the Works Approval Application indicates that the Latrobe Valley Air Quality Control Region already experiences exceedances of design criteria in SEPP (AQM) for SO₂ and there may be an impact on the beneficial uses specified in policy.
- 44 It can be considered that the airshed is 'full' in respect to this pollutant.
- 45 Therefore the provisions of Clause 30 apply.
- 46 Although at the point of maximum impact of the combined emissions the contribution from the DGDP is small, when the point of maximum contribution from the DGDP is assessed the impact is not insignificant and the emissions contribute approximately 49% of the design criteria.
- 47 Dr Bellair also states that the emissions are not significant given the likely closures of Hazelwood and Energy Brix. As no dates for the closure of the industries has been determined the combined impact of emissions cannot be ignored.
- 48 It should be noted also that paragraph 52 of my Expert Witness Statement was based on the January report by Dr Ross (CAMM), which was superseded by the February CAMM report. Accordingly, I adopt the conclusions of the February CAMM report that the maximum impact from the DGDP actually occurs to the north east (not south) of the proposed plant and that the contribution from the proposed DGDP at that point is 49% of the design criteria.
- 49 I also note, with reference to paragraph 92 of my Expert Witness Statement, that although the PM10 standard from the Ambient Air Quality NEPM was adopted in the SEPP (AAQ), the PM2.5 standard was not formally adopted. However, the provisions of the Ambient Air Quality NEPM apply in Victoria even if not formally adopted into SEPP (AQM).

2.11 Part II - Section 3.4

- 50 Dr Bellair's assessment of regional air quality is based on the assessment of the monitoring data from the EPA air monitoring stations but ignores the modelling that was done as part of the Works Approval Application and the impact on Morwell which was predicted to have the maximum impact.
- 51 The modelling done both by HRL and CAMM demonstrates that the SO₂ levels in Morwell are higher than those in either Traralgon or Moe.
- 52 Dr Bellair argues that there is no basis for the development of an AQIP for the Latrobe Valley Air Quality Control Region on the basis of air quality data collected in Traralgon and Moe. This is even though there are measured exceedances at Jeeralang Hill.
- 53 The development of an AQIP for the Latrobe Valley to address existing sources is not relevant to the assessment of the Works Approval Application.
- 54 Dr Bellair then goes on to argue that if the EPA thinks that the air quality issues are significant then an AQIP should be developed. The development of an AQIP is a separate (but related) issue but does not take away the requirement for new generators of emissions to control their emissions by application of

best practice. The requirements of Clause 19 of SEPP (AQM) apply whether or not an AQIP is developed for the region.

55 I disagree with Dr Bellair's assessment that there is no justification for the development of an AQIP for the Latrobe Valley.

56 The inclusion of pollution control equipment on the DGDP will significantly reduce emissions of SO₂ and their impact on the local air environment in Morwell as discussed in my Expert Witness Statement in paragraphs 44-46.

57 This reduction in emissions will also reduce the potential health effects associated with exposure to this pollutant.

58 I agree that the major impact in the region is existing sources and it should be noted that the EPA is currently scoping the development of an AQIP for the Latrobe Valley Air Quality Control Region to address existing sources in the region.

2.12 Part IV

59 Part IV of Dr Bellair's statement he summarises his conclusions.

60 I disagree with Dr Bellair's conclusion at point 4 that the NO_x and SO_x limits will be "met". There is no emission limit for SO_x within the SEPP (AQM) and, in the case the NO_x limit, the EPA has granted an exemption. The exemption was based on the fact that there were no exceedances of the design criteria and would be no impact on the beneficial uses specified in the policy.

61 I agree with point 5 of Dr Bellair's conclusions that the DGDP makes only a small contribution at the point of maximum impact. However, he does not acknowledge that there are overall exceedances of the SO₂ design criteria predicted at this location. The impact of the DGDP alone is also not discussed despite the fact that at the point of its maximum impact it alone accounts for 49% of the design criteria.

62 I also disagree with his conclusion in point 6 that there is no justification for SO₂ pollution control technology. The SEPP (AQM) requires minimisation of emissions and this has not been demonstrated for SO₂ which may have potential health impacts within the community.

63 As previously discussed the potential closure of Hazelwood and Energy Brix is not relevant to the assessment of the Works Approval Application as dates for closure of these industries have not been set.

64 His assessment of air monitoring data in point 7 is correct. However, it should be noted that the data collected by the Electricity Generators Network does show exceedances of the air quality objectives within the Latrobe Valley Air Quality Control Region. This data needs to be acknowledged and is consistent with the modelling conducted for the Works Approval Application and by CAMM for EPA.

65 The SEPP (AAQ) monitoring conducted in Traralgon is just a subset of data collected for air quality management purposes. EPA has established an air monitoring station at Morwell East to assess air quality in this region as this is the area predicted to be most highly impacted by DGDP and has higher levels of SO₂ than those predicted for Traralgon.

Declaration

I declare that I have made all the inquiries that I believe are desirable and appropriate and that no matters of significance which I regard as relevant have to my knowledge been withheld from the Tribunal.

L. Y. Denison

Dr Lynette Denison

Date: *20/10/11*

Declaration

I declare that I have made all the inquiries that I believe are desirable and appropriate and that no matters of significance which I regard as relevant have to my knowledge been withheld from the Tribunal.

L. Y. Denison

Dr Lynette Denison

Date: 20/10/11