



## **environmental affairs**

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA

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### **APPEAL RESPONSE REPORT**

**PROJECT NAME/TITLE: The Proposed 140 MW Boulders Wind Energy Facility in Saldanha Bay Municipality in the Western Cape Province**

**PROJECT LOCATION: West Coast District Municipality**

**PROJECT REFERENCE NUMBER: 14/12/16/3/3/2/1057**

**DATE PROJECT/ACTIVITY AUTHORISED: 14/01/2020**

DATE NOTIFIED OF DECISION: 20/01/2020

DETAILS OF THE 13TH APPELLANT	DETAILS OF THE APPLICANT
Name of appellant: Aurora Wind Power (RF) (Pty) Ltd	Name of applicant: Vredenburg Wind Farm (Pty)Ltd
Appellant's representative (if applicable):  Marius Diemont Webber Wentzel	Applicant's representative (if applicable):
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GROUND OF 13TH APPEAL	RESPONDING STATEMENT BY THE APPLICANT	COMMENTS BY THE DEPARTMENT
	Vredenburg Windfarm (Pty) Ltd (hereinafter referred to as "the respondent" in terms of these appeal proceedings) has, in addition to populating this Appeal Response Report, also provided a full stand	

	<p>alone response to the appeal submitted by Aurora. It is respectfully requested that the standalone appeal response must first be considered prior to referring to the content of this Appeal Response Report. Such request is made on the basis that the Respondent has generally not responded to Aurora's appeal on a paragraph by paragraph basis, but has rather responded in general to Aurora's grounds of appeal. Accordingly, the side-by-side comparative format of the Appeal Response Report is not ideal under the circumstances.</p> <p>It must further be noted that the paragraph numbering of the Respondent's responses in this Appeal Response Report are not aligned with the paragraph numbering in Aurora's appeal as captured in this Appeal Response Report. The Respondent has rather elected to retain the same numbering as per its standalone appeal response as such response makes numerous cross-references to other applicable paragraph numbers within the response. To have different numbering in the standalone response and this Appeal Response Report would have simply caused too much confusion.</p>	
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Furthermore, any reference in this Appeal Response Report by the Respondent to paragraph numbers in Aurora's appeal, is a reference to such paragraph numbering as provided for in Aurora's standalone appeal and not a reference to the paragraph numbering of Aurora's appeal as captured in this Appeal Response Report.

Finally, please note that the Annexures referred to and relied upon by the Respondent in its standalone response have not been attached to this Appeal Response Report. Consequently, please do refer to the Annexures attached to the standalone response when directed to do so in this Appeal Response Report.

**INTRODUCTION**

1. The respondent in terms of these appeal proceedings is the applicant for and holder of an environmental authorisation issued under DEA reference 14/12/16/3/3/2/Z/1057 in respect of the Boulders Wind Energy Facility (hereinafter referred to as "the proposed Boulders WEF").
2. This document is the respondent's response to the appeal lodged by Aurora Wind Power (RF) (Pty) Ltd (hereinafter referred to as "Aurora")

	<p>on 11 February 2020 against the decision of the Chief Director: Integrated Environmental Authorisations of the Department of Environmental Affairs (hereinafter referred to as “the Chief Director”).</p> <p>3. The appeal was lodged by Aurora in terms of the National Appeal Regulations (published under GN R933 of 8 December 2014 and hereinafter referred to as the “Appeal Regulations”). In terms of regulation 5 thereof, the respondent has twenty (20) calendar days from the date of submission of the appeal in which to submit to the Minister a responding statement. The responding statements were therefore due for submission on 2 March 2020.</p> <p>4. A request for an extension of the 20 day time period was submitted by the respondent to the Director: Appeals and Legal Review (hereinafter referred to as “the Director”) at the Department of Environment, Forestry and Fisheries (hereinafter referred to as “the Department”). A copy of the application is attached to the respondent’s main appeal response as <b>Annexure A</b>.</p>	
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	<p>5. Such application for extension was received by the Director on Thursday 20 February 2020 and the decision on such application was made and received by the respondent on Friday 28 February 2020. In terms of the decision issued by the Director, the respondent was granted a 20 day extension for the submission of its responding statement to all appeals and the revised submission date for all responses is 23 March 2020. A copy of the Director's decision is attached to the respondent's main appeal response as <b>Annexure B</b>.</p> <p>6. Accordingly, it is hereby confirmed that this responding statement has been submitted timeously and within the extended time period afforded to the respondent in terms of the Director's decision of 28 February 2020.</p> <p>7. Due to the technical nature of some of the arguments raised on appeal by Aurora, the respondent has been assisted with its appeal responses regarding the environmental assessment work conducted during the course of the EIA by Coastal Environmental Services (Pty) Ltd, the Environmental Assessment Practitioner (EAP) in this matter, and has</p>	
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	<p>further been assisted by certain specialists involved in the assessment work, in particular Urban-Econ Development Economists (hereinafter referred to as "Urban-Econ").</p> <p>8. The respondent takes note of the general nature of the comments made in paragraphs 1 – 6, but expresses no comment in relation thereto and neither admits nor denies the same.</p> <p>9. The respondent takes note of the conclusions reached in the Tractebel wake assessment report and chooses not to respond to such conclusion herein but rather refers to the detailed responses in relation thereto at paragraphs 38 to 61 below and which responses are equally applicable to the content of Aurora's paragraph 7.</p> <p>10. The respondent, for the reasons more fully set out in the overall response to Auroara's appeal, denies the content of paragraph 8 of the appeal in so far as ample opportunity remains within the current EIA process for the direct and cumulative socio-economic impacts of the proposed Boulders WEF to be assessed and that the minimum prescribed</p>	
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	<p>assessment criteria in NEMA and the EIA regulations will be complied with.</p> <p>11. To the extent that Aurora’s reference to cumulative impacts in paragraph 8 also refers to the grid connection impacts, such impacts are, for the reasons more fully set out in paragraphs 94 to 104 below, denied.</p>	
<p><b>Factual Background</b></p> <p>1. A Wake Loss Assessment Report prepared by Tractebel Engineering S.A, will be used in support of this appeal. The conclusion of the wake loss assessment report is that:</p> <ul style="list-style-type: none"> <li>• based on the selected wake models, an overall loss in the Annual Energy Production due to Boulders WEF ranges between 1.5 % and 2.5 %;</li> <li>• decreasing the rotor diameter and / or increasing the hub height of the turbines on Boulders WEF only has a limited impact in reducing the wake loss;</li> <li>• a setback distance of 1km only decreases wake loss by about 40%; and</li> </ul>	<p><b><u>RESPONSE TO FACTUAL BACKGROUND</u></b></p> <p>12. The respondent takes note of Aurora’s comments made in relation to the factual background of this matter made in paragraphs 9 - 10 of its appeal but expresses no comment in relation thereto and neither admits nor denies the same.</p> <p>13. The respondent admits, as per the content of paragraph 11 of the Aurora appeal, that Aurora did raise concerns relating to wake effect impacts with the EAP during the public participation process.</p> <p>14. The respondent admits that the EAP responded to Aurora’s concerns as per the quoted text in paragraph 12 of its appeal. However, such response was, at the time, informed by the appeal decision by the former</p>	

<ul style="list-style-type: none"> <li>• to nullify the impact of the Boulders WEF on West Coast 1 Wind Energy Facility (“WC1 WEF”), only 8 of the 40 turbines could be kept.</li> </ul> <p>2. The contention, in this appeal, is that the direct socio-economic impacts have not been assessed as required and the cumulative socio-economic impacts have not been considered at all. The minimum prescribed assessment criteria in NEMA and the EIA Regulations have not been complied with.</p> <p>3. The Appellant owns and operates the WC1 WEF, generating 94 MW. The WC1 WEF is an approved renewable energy facility, construction has been completed and the facility has been commercially operational since June 2015. It comprises 47 wind turbines (using Vestas 2 MW turbines with a 90m rotor diameter and a hub height of 80m) and associated powerlines and substation infrastructure.</p> <p>4. WC1 WEF connects directly to the Eskom Fransvlei substation. A portion of the proposed Boulders WEF’s overhead powerline is proposed to connect from the Boulders WEF onsite 33/132Kv substation to a Loop in Loop out connection onto the existing Aurora – Fransvlei 132kV sub-transmission line. This is subject to a basic assessment process and approval in terms of GN R 982 of the EIA Regulations.</p> <p>5. The proposed Boulders WEF is located immediately adjacent to the existing and operating WC1 WEF. On 27 June 2019 and during the public participation process, the Appellant advised the</p>	<p>Minister Mokonyane in the appeal submitted by South African Mainstream Renewable Power Developments (Pty) Ltd against the decision by the Department to issue environmental authorisations for the developmet of the San Kraal and Phezukomoya WEFs. In that appeal decision former Minister Mokonyane decided that “<i>I am of the view that the wake impacts have no environmentally associated impacts affecting the appellant in any way, and as such, <u>I am not responsible to determine the influence bearing of the wake impacts by the two projects on the Noupoot WEF</u></i>” (underlined text is the respondent’s emphasis). Taking the content of such appeal decision into account, it is submitted that the quoted response by the EAP was not misguided. A copy of the appeal decision is attached to the respondent’s main appeal response as <b>Annexure C</b>.</p> <p>15. The respondent confirms that it did, as per the content of paragraph 13 in Aurora’s appeal, undertake to do a wake assessment and it will, for the reasons more fully set out in this response to Aurora’s appeal and within the</p>	
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<p>environmental impact assessment practitioner (“EAP”) that the proposed Boulders WEF is located in the immediate vicinity of WC1 WEF, that the proposed Boulders WEF would cause significant interferences to the WC1 WEF and that a wake impact assessment should urgently to be undertaken. A copy of correspondence is attached as "D".</p> <p>6. The response of the EAP as set out in the Final Environmental Impact Assessment Report (“FEIAR”), is that</p> <p>"Your objection is noted. The BWF developers initiated discussions with Aurora (WC1 WEF WEF) in March 2019 to understand and determine these impacts. Technical and commercial effects of the wind farm on any neighbouring wind farms falls outside the scope of the environment being assessed in the EIA". (Our underlining)</p> <p>This view, as we demonstrate below, is wrong.</p> <p>7. Not satisfied with the response of the EAP, the Appellant engaged directly with representatives of the proposed Boulders WEF and requested that they conduct a wake loss assessment to establish all potential impacts. The response of the representatives of the proposed Boulders WEF was that discussions around potential wake losses were premature and that this was a technical issue and not one for environmental discussion, but that "once matters are more advanced, we will be obtaining an independent assessment as is normal". This correspondence is attached as "E". The fact that the Applicants agree to undertake wake impact studies after the</p>	<p>confies of the current EIA process, not renage on such undertaking.</p> <p>16. The content of paragraph 14 relating to Aurora’s averment that it would suffer significant economic losses as a result of wake effect impacts on West Coast 1 Wind Energy Facility (hereinafter referred to as “the WC1 WEF”) remained unsubstantiated throughout the appeal. Regarding Aurora’s comments relating to its communications with the Department, the respondent confirms that it was not a party to such communications and it therefore expresses no comment in relation thereto and neither admits nor denies the same.</p> <p>17. Although it is denied that the alleged wake effect impacts from the propsed Boulders WEF will have dramatic impacts on the WC1 WEF as alleged by Aurora in paragraph 15, it is nonetheless submitted, for the reasons more fully set out in this response to Aurora’s appeal, that the process followed by the Deaprtment in granting the environmental authorisation is legally defensible.</p>	
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<p>authorisation is a clear concession of the relevance of a wake impact assessment.</p> <p>8. The Appellant then engaged Tractebel Engineering S.A to carry out the wake assessment. On 19 December 2019, the Appellant submitted correspondence to the Department to advise it that, as part of the EIA process, the actual or potential impacts on socio-economic conditions must be assessed, and that based on the wake assessment report (a copy of which was enclosed), the overall loss on the Annual Energy Production is estimated to be between 1.5% to 2.5%. This represents a significant economic loss running to WC1 WEF running into many millions per annum. This correspondence is attached as "F"</p> <p>9. The dramatic impacts associated with the wake loss were not considered and taken into account in the EIA process notwithstanding the various attempts by the Appellant to bring this to the attention of the Applicant, the EAP and the Department. It is submitted that the failure to do is legally indefensible as it fails to apply the principles and provisions of NEMA, as detailed in this appeal.</p> <p><b>Grounds of Appeal</b></p> <p>10. The authorisation of the proposed Boulders WEF significantly impacts the economic viability and sustainability of the WC1 WEF. The Appellant's primary and fundamental concern with the decision to grant an environmental authorisation for the proposed Boulders WEF, is that the adverse impacts of the proposed Boulders WEF on the WC1 WEF were not assessed as required by the EIA Regulations.</p>	<p><b><u>Grounds of Appeal</u></b></p> <p>18. It is not immediately apparent from Aurora's appeal what relief it seeks and the respondent has therefore proceeded on the basis that Aurora has, as per its concluding remarks at</p>	
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<p>The impacts that are central to this appeal are: (1) wake effect impacts; (2) socio-economic impacts; (3) grid connection impacts and (4) the fact that there is an established precedent for requiring an independent wake assessment where a proposed wind farm can expect to impact an adjacent existing and operating wind energy facility.</p> <p>11. The Department did not require or request a wake effect study at any stage of the EIA, let alone the scoping stage of proceedings and for this reason the Department's decision is legally flawed as relevant information in respect of the sustainability enquiry was not before it. Section 2(4)(a) of NEMA provides that sustainable development requires the consideration of all relevant factors including that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions. No information regarding wake impacts and the resultant socio-economic consequences were taken into account.</p>	<p>paragraphs 64 to 66 of its appeal, ultimately requested the Minister to:</p> <p>18.1. set aside the environmental authorisation; and</p> <p>18.2. remit the decision to grant the environmental authorisation back to the Department for reconsideration based on the respondent first supplementing the EIA process with the necessary and relevant information to address the wake effect impacts and grid connection impacts that the proposed Boulders WEF would have on the neighbouring WC1 WEF.</p> <p>19. The respondent has chosen to respond in general to each ground of appeal that has been raised by Aurora, but does not, hereinafter, respond on a paragraph by paragraph basis. To the extent that the respondent fails to address any particular allegations in the Aurora appeal, such allegations are denied by the respondent, as if specifically traversed.</p> <p>20. The grounds of appeal as raised by Aurora in paragraph 16 of its appeal, and which the</p>	
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	<p>respondent will respond to hereinafter, are as follows:</p> <p>20.1. the alleged wake effect impacts that the Boulders WEF may have on the WC1 WEF were not considered and taken into account in the EIA process and accordingly were not considered by the Chief Director in granting the environmental authorisation;</p> <p>20.2. the alleged socio-economic impact, including the sustainability and viability of the WC1 WEF as well as the possible negative impact that it may have on Aurora's Socio-Economic Development (hereinafter referred to as "SED") commitments in terms of the Renewable Energy Independent Power Producer Procurement Programme (hereinafter referred to as "the REIPPPP"), were not taken into account in the EIA process and accordingly were not considered by the Chief Director in granting the environmental authorisation;</p> <p>20.3. the possible negative impact on WC1 WEF when the proposed Boulders WEF</p>	
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<p><b>The failure to assess wake effects and associated impacts</b></p> <p>12. Wake loss effects are an environmental concern and by implication are relevant to the EIA assessment. This is supported by NEMA, the Fuel Retailers case as well the internationally accepted understanding of the concept of ‘sustainability’ that is enshrined in NEMA.</p>	<p>is connected to the grid at the existing Eskom Fransvlei-Aurora 132kV transmission line was not taken into account in the EIA process and accordingly were not considered by the Chief Director in granting the environmental authorisation; and</p> <p>20.4. the existence of precedent requiring an independent wake assessment where it is anticipated that a proposed WEF will have an impact on an adjacent existing and operational WEF.</p> <p>21. The respondent denies, for the reasons more fully set out in the responses below, that the the Chief Director’s decision to grant the environmental authorisation was legally flawed as is alleged by Aurora in paragraph 17 of its appeal.</p> <p><b>The failure to assess wake effects and associated impacts</b></p> <p>22. Aurora firstly argues at paragraph 18 that <i>“wake effects are an environmental concern and by implication are relevant to the EIA</i></p>	
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<p>13. The preamble of NEMA provides that (our underlining) “the State must respect, protect, promote and fulfil the social, economic and environmental rights of everyone and strive to meet the basic needs of previously disadvantaged communities.” The preamble of NEMA provides further “sustainable development requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations”. Finally, the preamble of NEMA provides “everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development”. NEMA defines “sustainable development” to mean “the integration of social, economic and environmental factors into planning, implementation and decision making so as to ensure that development serves present and future generations”. Section 2(3) of NEMA provides that “Development must be socially, environmentally and economically sustainable.” Section 2(4)(i) of NEMA provides that “the social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated and decisions must be appropriate in the light of such consideration and assessment”. Section 23(2) of NEMA provides that:</p> <p>“The general objective of integrated environmental management is to identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the</p>	<p><i>assessment</i>”. Such submission, according to Aurora, finds support in NEMA, the Fuel Retailers case as well as the internationally accepted concept of sustainable development.</p> <p>23. Aurora then proceeds to, at great lengths, quote each provision in NEMA and the associated EIA Regulations, 2014 together with extracts from the <i>Fuel Retailers</i> case in support of this ground of appeal. Aurora concludes that “<i>The Applicant has presented a flawed application to the Department without a wake impact assessment and as the Department failed to cure this by insisting on such an assessment, renders the resultant decision to grant the related environmental authorisation is flawed</i>”.</p> <p>24. It is, in the present matter, actually not necessary to engage in a lengthy legal debate on the applicability of NEMA, its associated EIA Regulations 2014 and the judgement in the <i>Fuel Retailers</i> case. The respondent acknowledges and accepts the content and outcome of the <i>Fuel Retailers</i> case as well as the requirements of NEMA read together with the EIA Regulations 2014. However, the</p>	
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<p>risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in section 2.</p> <p>14. Further, section 2(c) of Appendix 3 of the EIA Regulations provides that “the objective of the environmental impact assessment process is to, through a consultative process identify the location of the development footprint within the approved site as contemplated in the accepted scoping report based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment.”</p> <p>15. Section 3(1)(h)(iv) of Appendix 3 requires that “an environmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include a full description of the process followed to reach the proposed development footprint within the approved site as contemplated in the accepted scoping report, including the environmental attributes associated with the development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects.” Section 3(1)(h)(vii) of Appendix 3 requires the report to contain information relating to “positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the</p>	<p>respondent is of the opinion that, in granting the environmental authorisation, the Chief Director included certain safeguards within the content thereof which prevents his decision from being flawed and preserves Aurora’s right to fair administrative action.</p> <p>25. First, the Chief Director did <u>not</u> approve the layout that was presented by the respondent in the FEIR. Condition 12 specifically confirms that “<i>The Site Development Plan / Layout Plan (Alternative Layout 2) appended as part of the EMPr, and submitted with the final EIAR dated September 2019 is <u>not</u> approved. A copy of the final Site Development Plan / Layout Plan must be made available for comments by registered Interested and Affected Parties and the holder of this Environmental Authorisation must consider such comments</i>”.</p> <p>26. Second, the Chief Director confirmed at condition 14 of the environmental authorisation that “<i>The environmental Management programme (EMPr) submitted as part of the EIAR is <u>not</u> approved. The EMPr</i></p>	
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<p>geographical, physical, biological, social, economic, heritage and cultural aspects”.</p> <p>16. The underlining above demonstrates the clear acceptance of economic considerations as part and parcel of the sustainability enquiry that is required by NEMA and as confirmed in the Fuel Retailers case. Accordingly, economic considerations relating to wake impact effects must be properly assessed and taken into account. The Applicant has presented a flawed application to the Department without a wake impact assessment and as the Department failed to cure this by insisting on such an assessment, renders the resultant decision to grant the related environmental authorisation as flawed.</p> <p>17. The failure of the EIA process to undertake an assessment of wake effects of the proposed Boulders WEF on WC1 WEF has compromised the assessment of the potential socio-economic impacts associated with the project and the findings of the EIA. This concern is underpinned by the adverse financial impacts on the WC1 WEF and the consequential negative effects on the Appellant’s Socio-Economic Development (“SED”) commitments in terms of the REIPPP programme (collectively giving rise to a social and economic impact required to be considered in terms of NEMA during the EIA process).</p> <p>18. The requirements of the EIA are set out in the NEMA regulations. The Department sets the scope of study during the scoping stages of the EIA. Appendix 2 of the EIA Regulations</p>	<p><i>must be amended to include measures as dictated by the final site layout map and micro-sitting; and the provisions of this environmental authorisation. The EMPr must be made available for comments by registered Interested and Affected Parties and the holder of this environmental authorisation must consider such comments. Once amended, the final EMPr must be submitted to the Department for written approval prior to commencement of the activity”.</i></p> <p>27. The content of both of these conditions confirms that the EIA process is not yet complete and the obligation upon the Department to fully comply with section 24O(1) of NEMA can still be achieved. In fact, a review of historical environmental authorisations that have previously been granted by the Department in respect of WEFs confirms that delaying the approval of the final layout plan and the EMPr for WEFs has become standard and accepted practice.</p> <p>28. In fact, the full ramification of the content of Conditions 12 and 14 is that the environmental authorisation is, in its current format, unimplementable by the respondent. The</p>	
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<p>provides that (our underlining) “the objective of the scoping process is to, through a consultative process identify and confirm the preferred site, through a detailed site selection process, which includes an identification of impacts and risks inclusive of identification of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment.” Further, according to section 2(1)(g)(iv) of Appendix 2 “a scoping report must contain the information that is necessary for a proper understanding of the process, informing all preferred alternatives, including location alternatives, the scope of the assessment, and the consultation process to be undertaken through the environmental impact assessment process, and must include...a full description of the process followed to reach the proposed preferred activity, site and location of the development footprint within the site, including the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects”. Section 2(1)(g)(vii) of Appendix 2 of the EIA Regulations (GNR 326 of 7 April 2017) requires the scoping report to include (our underlining) “positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects.”</p> <p>19. The Fuel Retailers case confirms that NEMA requires all developments to be socially, economically and environmentally sustainable. Significantly for the present case, it requires that the social, economic and environmental impact of a proposed</p>	<p>environmental authorisation will only become implementable if, or when the Chief Director approves the final layout and EMPr.</p> <p>29. Moreover, the content of Conditions 12 and 14 place an inescapable obligation on the respondent to, during a 30 day public participation process, present the final layout plan and an amended EMPr for the proposed Boulders WEF to all registered I&amp;APs. Naturally, Aurora, as a registered I&amp;AP, would be a party to such process and would therefore be provided with ample opportunity to review, comment on and object to the proposed final layout plan, EMPr and any associated documents.</p> <p>30. Regarding the possible other associated documents and reports that will be submitted in support of the final layout, the respondent hereby reaffirms its previous commitments made to Aurora (see the correspondence attached to Aurora’s appeal at Annexure E), that it will appoint an independent consultant to compile a wake assessment report.</p> <p>31. The respondent further confirms that such independent report will, excluding a forecast</p>	
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<p>development be “considered, assessed and evaluated” and that any decision made “must be appropriate in the light of such consideration and assessment”. This is underscored by the requirement that decisions must take into account the interests, needs and values of all interested and affected persons. It was at the scoping stage of proceedings that the Department and the Applicant should have included a wake impact assessment within the scope of relevant economic considerations.</p> <p>20. The appeal substantiates the Appellant’s concern that the adverse socio-economic impacts on the WC1 WEF have not been assessed with reference to the following:</p> <p>20.1 The EIA Regulations require that an EIA process must undertake project-level impact assessment and mitigation in accordance with different tiers. The first tier is to ensure that all impacts on the environment are assessed (including social, and economic aspects) and that any significant adverse impacts are avoided. Secondly, where impacts cannot be avoided, the impacts must be minimised. Thirdly, where impacts cannot be sufficiently avoided or minimised, compensation for residual adverse impacts is applicable. The EIA process has failed to ensure appropriate assessment, mitigation and compensation required in terms of this impact assessment and mitigation hierarchy.</p> <p>20.2 The EIA for the proposed Boulders WEF failed to adhere to the impact assessment and mitigation hierarchy, by failing to ensure</p>	<p>energy yield, identify and assess any possible wake effect impact that the proposed Boulders WEF may have on the WC1 WEF.</p> <p>32. It makes complete sense for such wake assessment to only be conducted when the respondent has, after taking micro-siting considerations into account, determined its absolute final layout plan for the proposed Boulders WEF. Such approach will ensure that the most accurate and detailed information regarding possible wake effect impacts will be presented to all I&amp;APs, including Aurora, during the required public participation process.</p> <p>33. Not only will Aurora benefit from being able to review and comment on the most accurate assessment of the possible wake effects on the WC1 WEF, but it will further benefit from the additional assurance that the Chief Director will be placed in the best possible position to make an informed decision on the assessed wake effect impacts associated with the final layout plan for the proposed Boulders WEF and to determine, taking all relevant considerations into account, whether it is</p>	
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<p>that all project-related impacts are assessed comprehensively to determine whether or not such impacts can or should be avoided.</p> <p>20.3 The level of impact assessment falls short of the standard required by the EIA Regulations particularly insofar as the EIA identifies the proposed Boulders WEF as being located directly adjacent to the WC1 WEF but then does not assess the nature, extent and severity of wake assessment impacts on the WC1 WEF.</p> <p>20.4 The Appellant's fundamental concern is that the operational impacts of the proposed Boulders WEF will affect the economic viability and sustainability of the WC1 WEF. Approving the proposed Boulders WEF with turbines in close proximity to the existing WC1 WEF without assessing the impacts of wake effects is irrational. This is a relevant factor which should have been addressed in the EIA process. The failure to consider the wake effect resulted in the EIA failing to ensure that anticipated impacts will be avoided and/or mitigated. In the absence of relevant information being contained in the FEIR, the mitigation hierarchy is defective, and the Department decision is legally assailable.</p> <p>20.5 There is a legal requirement on the Department, as the competent authority in terms of NEMA, to have regard to issues such as wake effects because it gives rise to potential adverse socio-economic impacts. The Fuel Retailers case established that a legitimate objective of the EIA process is to identify and predict the actual or potential impact on socio-economic conditions. The Court specifically held that the impact of a proposed development on the</p>	<p>appropriate to approve the final layout and EMPr or not.</p> <p>34. It must further be appreciated that the Chief Director also has the administrative power to, based on the documentation and information that will be before him, amend the environmental authorisation to include any additional conditions that he may deem necessary and / or appropriate under the circumstances. He may further prescribe certain mitigation measures to be included within the EMPr.</p> <p>35. By adopting such process, Aurora can be sure that the absolute final layout, the final EMPr and any other documentation will be subjected to a public participation that will allow for any possible wake effect impacts associated with the proposed Boulders WEF and any other relevant information to be fully ventilated and then placed before the Chief Director so that an informed and balanced decision can be made on:</p> <p>35.1. the final layout plan;</p> <p>35.2. the content of the EMPr;</p>	
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<p>feasibility of other developments is required to be assessed during the EIA process. Where the EIA process fails to investigate wake effects and associated adverse impacts, this gives rise to adverse socio-economic consequences for the neighbouring facilities.</p> <p>21. In terms of section 24(1) of NEMA, the potential consequences of impacts on the environment of listed activities must be considered, investigated, assessed and reported to the Department. This includes an assessment of the wake effects of the proposed Boulders WEF.</p> <p>22. In reaching a decision in terms of section 24 of NEMA as to whether environmental authorisation should be granted for a project, the Department must have due and proper regard to the FEIR and the findings therein. The FEIR is therefore central to the Department's decision-making process. The FEIR, and the factual findings therein pertaining to potential impacts, is critically relevant as it is the principal document which must inform the decision of the Department. It follows that the decision as to whether environmental authorisation should be granted must be based on relevant and accurate information. To the extent that the decision is based on irrelevant or inaccurate information, the decision is legally indefensible.</p> <p>23. Due to the inherent flaws in the EIA process, the FEIR failed to contain all the relevant information necessary to allow the Department to make a decision based on all relevant considerations.</p>	<p>35.3. to the extent necessary, the amendment of the environmental authorisation to include further conditions that may be required under the circumstances in order to avoid or mitigate against any possible negative wake effect impacts; and</p> <p>35.4. to the extent necessary, the amendment of the EMPr to include appropriate mitigation measures that may be required under the circumstances in order to avoid or mitigate against any possible negative wake effect impacts.</p> <p>36. Notwithstanding any decision that may be reached by the Chief Director to approve the final layout and EMPr for the proposed Boulders WEF, the right afforded to Aurora and any other registered I&amp;AP to submit a further appeal against such decision, also remains reserved.</p> <p>37. Consequently, the Chief Director's original decision to grant the environmental authorisation is legally defensible as significant safeguards are in place and will remain in place to ensure compliance with the</p>	
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<p><b>Wake Effect of WC1 WEF</b></p> <p>24. The effect of increased turbulence caused by or related to wake effects of the turbines on the proposed Boulders WEF will result in and/or cause material fatigue and reduces turbine capacity and the lifespan of the WC1 WEF wind turbines. Wind gusts brought on by wake effect also cause reduced energy capture in downwind areas because of the increased frequency of control actions to shutdown turbines situated downwind (in order to limit loading under gusty conditions).</p> <p>25. The Wake Assessment Report projects that the proposed Boulders WEF there will be an overall loss in Annual Energy Production of between 1.5% and 2.5%. This equates to losses of many millions per annum and potentially as much as hundreds of millions for the remainder of the Power Purchase Agreement, based on estimated operational date.</p> <p>26. A significant adverse socio-economic impact on WC1 WEF is due to wake effect. The projected energy loss caused by the impact of the proposed Boulders WEF has adverse consequences for the socio-economic benefits associated with the WC1 WEF. The direct</p>	<p>requirements of NEMA and the EIA Regulations 2014 and to ensure that the rights and interests of all I&amp;APs, particularly those of Aurora, remain protected. It is therefore respectfully submitted that this ground of appeal should be dismissed.</p> <p><b>Wake Effect of WC1 WEF</b></p> <p>38. Attached to, and relied upon in Aurora’s appeal was a Wake Loss Assessment Report prepared by Tractebel Engineering S.A (hereinafter referred to as Tractebel). Instead of focusing on the recommendations made by Tractebel, Aurora rather focused on Tractebel’s analysis of the wake impacts and which analysis was summarized by Aurora as follows:</p> <p>38.1. according to the selected wake models, the Boulder WEF would result in WC1 WEF suffering an overall loss in Annual Energy Production (hereinafter referred to as “AEP”) of between 1.5% and 2.5%;</p> <p>38.2. a decrease in rotor diameter and / or increase in hub height of the turbines on</p>	
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<p>and cumulative effect of the wake effect caused by the proposed Boulders WEF will significantly contribute to this adverse impact.</p> <p>27. The obligation of the Department to consider the socio-economic impact of the proposed Boulder WEF is contained in sections 2(4)(a), 2(3), 2(4)(g), 2(4)(i), 23 and 24 of NEMA. This obligation requires the Department to assess, among other things, the cumulative impact brought about by the proposed Boulder WEF on all existing wind farms that are in close proximity. This obligation on the Department, as the competent authority, also includes the need to consider the need and desirability of the Boulder WEF by virtue of its impact on the sustainability of existing wind farms such as the WC1 WEF.</p> <p>28. The location of proposed Boulders WEF turbines in relation to the WC1 WEF turbines is problematic. Although this spacing is within parameters that might be considered reasonable within a wind farm, for the simple reason that wake loss impacts are able to be balanced internally against infrastructure (cable, roads) costs and land use, it is not reasonable for this spacing to be relied upon between the proposed Boulders WEF and existing wind farms, such as WC1 WEF. This is particularly the case where the proposed Boulders WEF turbines are situated immediately upwind of the approved WC1 WEF, thus depleting WC1 WEF's access to the wind resource.</p>	<p>Boulders WEF would only have a limited reduction in wake loss;</p> <p>38.3. a setback distance of 1km only decrease wake loss by about 40%; and</p> <p>38.4. to nullify the impact of Boulders WEF on WC1 WEF, only 8 of the proposed 40 turbines could be kept.</p> <p>39. In order to counteract the above assessed wake impacts, Tractebel did not recommend that the proposed Boulders WEF should not be built, but rather recommended on page 30 of the wake assessment that:</p> <p>39.1. a setback distance of 1km from the WC1 WEF is recommended to help lower wake effect;</p> <p>39.2. if the turbine type is not yet selected then a smaller rotor diameter with a higher hub height should be recommended to lower wake effects; and</p> <p>39.3. financial compensation should be requested for expected annual energy production losses.</p>	
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<p>29. In light of the above, the direct and indirect negative impacts caused by the wake effects of the proposed Boulders WEF will include the following:</p> <p>29.1 loss in energy production and associated loss in revenue for WC1 WEF;</p> <p>29.2 inability to meet agreed energy production and financial obligations, determined by contractual obligations with reference to WC1 WEF's energy yield potential and capacity factor;</p> <p>29.3 reduced SED benefits flowing to local community, which is a percentage of WC1 WEF project revenue;</p> <p>29.4 increased mechanical "wear and tear" and associated maintenance costs for the WC1 WEF;</p> <p>29.5 additional operational downtime for WC1 WEF (i.e. due to grid connections and control actions required to be implemented because of wake effects); and</p> <p>29.6 decrease in the anticipated life of the wind turbines on WC1 WEF.</p> <p>30. Concerns about potential adverse impact of wake effect on the WC1 WEF were raised by the Appellant during the EIA process. Specifically, the concern raised by WC1 WEF in 27 June 2019 stated that the layout of the Boulders project – and the turbines (and their specifications) that will be erected within close proximity to the WC1</p>	<p>40. Despite the above recommendations and the earlier confirmation by the respondent herein that, as per it's earlier discussions with, and commitments made to Aurora, an independent wake assessment will be undertaken when finalising the layout plan, it is nonetheless necessary for the respondent to provide some preliminary responses to the technical issues raised by Aurora on appeal, as well as the methodology applied and the conclusions reached and recommendations made by Tractebel in the wake assessment report. To the extent that the respondent may fail to deal with all of Tractebel's conclusions and recommendations, the respondent hereby denies such conclusions and recommendations as if specifically traversed</p> <p>41. First, the impacts on turbines caused by wake effect, including material fatigue, are a widely known and accepted impact. However, material fatigue is also to be expected as part of normal WEF operating conditions, particularly where the local wind conditions that exist on the WC1 WEF site are known to be turbulent.</p>	
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<p>WEF turbines, will have direct and indirect negative impacts on the WC1 WEF.</p> <p>31. Various discussions ensued between the Applicant and the Appellant to highlight concerns regarding potential wake effects. Specifically, the Appellant sought to engage with the Applicant and to request that an independent wake assessment study is undertaken. Although the Applicant indicated its intent to resolve concerns regarding potential wake effects, nothing came of this.</p> <p>Independent Energy and Wake Assessment</p> <p>32. In the absence of an accurate identification and evaluation of wake effect impacts, WC1 WEF commissioned an independent study and appointed Tractebel Engineering S.A. to assess the performance and future wake impacts on the WC1 WEF.</p> <p>33. The Wake Assessment Report identified wake loss for the WC1 WEF of between 1.5% and 2.5%. The result of the Wake Assessment Report is that there will be a significant adverse impact in the form of loss in production due to wake effect (and associated loss of income to both WC1 WEF as well as the surrounding community due to reduced socio-economic benefits associated with the long-term sustainable operation of the WC1 WEF.</p> <p>34. The Wake Assessment Report clearly underpins and justifies the Appellant's concern about a significant adverse energy yield and wake effect impact on the operation and long-term sustainability of the WC1 WEF. This impact should have been investigated, evaluated</p>	<p>42. As such, although wake effect from the proposed Boulders WEF may have some impact on material fatigue, it is submitted that such impacts on WC1 WEF would be too insignificant to be considered abnormal and the respondent therefore denies that:</p> <p>42.1. additional operational downtime will occur;</p> <p>42.2. there will incremental increases in associated maintenance costs; and</p> <p>42.3. there will be a decrease in anticipated life of the WC1 WEF turbines.</p> <p>43. Second, although Tractebel applied two different wake models when undertaking the wake assessment, it is submitted by the respondent that, based on the known onshore wind turbulence at the site in question, Tractebel failed to also apply the more appropriate N.O. Jensen (RISO/EMD) Park 1 wake model. The application of such model is most appropriate under the circumstances as it provides the most accurate assessment</p>	
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<p>and assessed in accordance with the prescripts of NEMA and the EIA Regulations during the EIA process. Given the significant adverse impacts associated with wake effects, it was not appropriate for the Department to have issued the environmental authorisation for the proposed Boulders WEF without first ensuring that the mitigation hierarchy is implemented appropriately and in a manner that will ensure that (1) adverse impacts associated with the WC1 WEF are avoided and/or mitigated; (2) any residual impacts on the WC1 WEF are compensated for; and (3) adverse impacts on the surrounding community are mitigated and/or compensated.</p>	<p>results in relation to wake effect impacts associated with <u>onshore</u> WEFs.</p> <p>44. Third, the respondent's current own internal assessment shows that the maximum AEP loss is likely to be less than 2%. However, and as previously confirmed, an independent wake assessment will be undertaken to determine any possible AEP losses to WC1 WEF based on the final layout of the proposed Boulders WEF and which assessment will be made available to Aurora for its review and comment.</p> <p>45. Fourth, there are currently only 8 turbines that are located within the 1km setback recommended by Tractebel. Even if the general layout and number of turbines remains as is currently proposed, it is submitted that the possible negative wake effect impacts on WC1 WEF are not, even at a maximum AEP loss of 2.5%, a fatal flaw associated with the proposed Boulders WEF. Such impacts are, as per the detailed discussions in paragraphs 66 to 73 below, acceptable when compared against the overwhelming significant overall socio-economic benefits and the need and</p>	
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	<p>desirability associated with the proposed Boulders WEF.</p> <p>46. In any event, the recommendation by Tractebel that all the turbines for the Boulders WEF should be setback at least 1km from any WC1 turbine finds absolutely no support in any legislation that is currently applied in South Africa at a national, provincial or local municipal level. There is not even a guideline document published by any department that standardises or even recommends setback distances between adjacent WEFs to specifically mitigate against wake effect impacts.</p> <p>47. In fact, with the identification of various Renewable Energy Development Zones (hereinafter referred to as "REDZ"), in Government Notice R144 in Government Gazette 41445 of 16 February 2018, the Department itself recognises that there are certain strategic geographical areas within South Africa that are, due to the abundance of available natural resources and the proximity to existing transmission and distribution infrastructure, optimal for the production of</p>	
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	<p>electricity by harnessing the energy generated by <i>inter alia</i> the wind.</p> <p>48. Even though the existing WC1 WEF and the proposed Boulders WEF do not occur within a currently identified REDZ, GN R114 creates a future realistic scenario whereby multiple WEFs will, in order to harness the abundance of available wind and the proximity to transmission and distribution infrastructure, be located in close proximity to one another within a REDZ. Despite such realistic scenario, GN R114 does not make any provision for the establishment of setbacks between neighbouring WEFs to mitigate against wake effect and it further makes no reference to the need to assess wake effects.</p> <p>49. Consequently, the most applicable current legislation promulgated by the Department does not prohibit the location of WEFs within close proximity to one another but rather actively encourages the same.</p> <p>50. Sixth, the Tractebel wake assessment confirms at paragraph 3.3.3 on page 14 thereof that the dominant long-term wind direction climate is actually from the south and</p>	
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	<p>south east and not from the west south west, south south west and the west as stated by Tractebel.</p> <p>51. With a dominant wind direction from the south and south east, it is the respondent's submission that the wind turbines on the proposed Boulders WEF will actually suffer a greater wake effect impact from WC1 WEF than <i>vice versa</i>. Current internal estimates by the respondents are that the Boulders WEF will suffer AEP losses of approximately 4% due to the wake effect impact caused by the WC1 WEF turbines. It is therefore arguable that any wake effect impact that WC1 WEF may suffer should be offset against the wake impact that is likely to be suffered by the proposed Boulders WEF.</p> <p>52. Seventh, it is denied, which denial is further amplified at paragraphs 62 to 73 below, that the possible wake effects impacts on WC1 WEF will have significant adverse socio-economic impacts. In fact, the concurrent operation of the proposed Boulders WEF and the existing WC1 WEF will actually have significant socio-economic <u>benefits</u>, which</p>	
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	<p>benefits and the mitigatory effects thereof are also highlighted in paragraphs 66 to 73 below.</p> <p>53. Eighth, the construction of the proposed Boulders WEF is, as per the detailed conclusions on page 48 of the FEIR, supported from a planning and policy perspective at a national level as well as at the provincial, district, and most importantly, the local level. Furthermore, the FEIR at section 3 thereof, provides a detailed assessment of and the findings regarding the needs and desirability of the proposed Boulders WEF. Such findings can be succinctly paraphrased to confirm that the proposed Boulders WEF will significantly contribute towards:</p> <p>53.1. securing the country's energy needs,</p> <p>53.2. upholding the development imperative to reduce poverty and unemployment, particularly in relation to the communities located within close proximity to the Boulders WEF;</p> <p>53.3. ensuring that South African citizens have access to clean energy that upholds every citizen's right to an</p>	
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	<p>environment that is not harmful to their health or well-being;</p> <p>53.4. growing the economy of the country;</p> <p>53.5. providing much needed local jobs;</p> <p>53.6. developing local entrepreneurs; and</p> <p>53.7. ensuring a low carbon future, in accordance with our country's global commitments on climate change, made at CoP 21.</p> <p>54. The above substantial positive impacts associated with the proposed Boulders WEF provide overwhelming support for the need and desirability of such project, even if the alleged wake effect impacts on the WC1 WEF do materialise.</p> <p>55. Ninth, The EAP confirmed at page 217 of the FEIR that <i>"the current Final Layout is the most suitable option for the site provided that all the mitigation measures described in Chapter 11 are adhered to, and that specialist input is obtained during the micro-siting exercise"</i>. As such, the current proposed layout of turbines provided for in the FEIR reflect the "most</p>	
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	<p>practicable environmental option” for a WEF of this nature and on this site in so far as it is the option that provides for the most benefit and causes the least damage to the environment as a whole, at a cost acceptable to broader society, in the long-term as well as in the short-term.</p> <p>56. The decision to develop the Boulders WEF on the site in question is supported by an exceptional wind resource, excellent grid access and the preferred location of the proposed Boulders WEF is near to the Saldanha water port, ensuring good access.</p> <p>57. Based on the above submissions, it is respectfully submitted that the alleged negative socio-economic impacts that may occur as a result of the operation of the proposed Boulders WEF are significantly outweighed and mitigated by the confirmed positive socio-economic benefits thereof. Accordingly, the alleged negative socio-economic impacts are not fatal flaws associated with the proposed Boulders WEF.</p> <p>58. In any event, and as previously confirmed herein, the content of Conditions 12 and 14 of</p>	
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	<p>the environmental authorisation have specifically provided the respondent with the opportunity to appoint a consultant to undertake an independent wake assessment that will be based on the final proposed layout thereby ensuring the most accurate determination of any possible wake effect impacts on the WC1 WEF.</p> <p>59. In addition, Aurora will be provided with an opportunity to comment on the assessment results and such comments, together with the results, will be presented to the Chief Director who can then make an informed decision on whether to approve the final proposed layout and EMP or not.</p> <p>60. It is therefore respectfully submitted that, given the safeguards provided for in the environmental authorisation, it was appropriate for the Chief Director to grant such authorisation as ample opportunity remains for the Chief Director to, based on the documentation and information that will be presented to him, implement the mitigation hierarchy.</p>	
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<p><b>Failure to assess impact on socio-economic conditions</b></p> <p>35. It is trite that a key and fundamental objective of the EIA process is to identify and predict the actual or potential impact on socio-economic conditions. This includes that the impact of the proposed development (the proposed Boulders WEF) on the feasibility of other existing developments (WC1 WEF) must be investigated and assessed in accordance with the prescripts of NEMA and the EIA Regulations.</p> <p>36. If the proposed Boulders WEF project is implemented as per the current layout authorised by the Department, irrespective of the valid concerns regarding the potential wake effects, then this will adversely affect the viability and sustainability of the WC1 WEF. It is this precise situation that the court in the Fuel Retailers case identified as falling within the mandate of environmental authorities during an EIA process.</p> <p>37. The potential socio-economic impacts associated with wake effect impacts on WC1 WEF also give rise to indirect impacts. For example, one of the investors of WC1 WEF is a community trust. WC1 WEF spends a percentage of its revenue on SED projects within the community. The amount available to invest in SED projects, and the amount available to distribute to shareholders, including the community trust would decrease, after tax, by the same Rand value as the reduction in revenue caused by the wake effect impacts. Another affected entity is the entity responsible for carrying out</p>	<p>61. It is therefore further submitted that the issues raised by Aurora in this regard should be dismissed.</p> <p><b><u>Failure to assess impact on socio-economic conditions</u></b></p> <p>62. It is accepted that one of the key and fundamental objectives of the EIA process is to identify and predict actual or potential impacts on socio-economic conditions. However, it is denied, as is suggested by Aurora at paragraph 42 of its appeal, that the current layout of the proposed Boulders WEF has been authorised by the Department. Condition 12 of the environmental authorisation, and which condition is discussed in substantial detail at paragraphs 22 to 37 above, specifically confirms that the layout is <u>not</u> approved.</p> <p>63. Furthermore, Aurora’s makes a bald assertion that the “current layout authorised by the Deptment” will in fact result in adverse impacts on the viability and sustainability of the WC1 WEF.</p> <p>64. Aurora proceeds to highlight that, in addition to the possible direct wake effect impacts on the</p>	
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<p>maintenance and the operation of the facility which will similarly suffer a proportionate financial loss. These values (and attendant loss of socio-economic benefits) are significant, and potentially impact on the viability and sustainability of the WC1 WEF. The expected adverse socio-economic impact to SED projects, the community trust, farmers and other beneficiaries caused by the proposed Boulders WEF if not appropriately mitigated are significant.</p> <p>38. Insofar as the Minister concludes that the wake effect impacts cannot be avoided and/or mitigated, it is imperative that WC1 WEF is compensated for any loss due to wake effects of the proposed Boulders WEF and that such compensation must be catered for in an authorisation, varied by the Minister on appeal. The failure to ensure this outcome will result in a misapplication and/or misdirection of the mitigation hierarchy in a manner that does not comply with the provisions and principles of NEMA.</p>	<p>WC1 WEF, further possible indirect socio-economic impacts will occur. In particular, Aurora argues <i>inter alia</i> that:</p> <p>64.1. one of the investors in the WC1 WEF is a community trust. The amount available to distribute to shareholders, including the community trust would potentially decrease, after tax, by the same Rand value as the reduction in revenue caused by wake effect impacts,</p> <p>64.2. WC1 WEF spends a percentage of its revenue on socio-economic development (SED) projects within the community. The amount available for such projects would potentially decrease, after tax, by the same Rand value as the reduction in revenue caused by wake effect impacts;</p> <p>64.3. further potentially socio-economic impacts would be felt by farmers and “other beneficiaries”.</p> <p>65. Aurora failed to raise any of the above alleged socio-economic impact concerns during the public participation process. Such socio-economic impacts have further not been</p>	
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	<p>quantified by Aurora on appeal and, most importantly, its appeal fails to acknowledge the inescapable and overriding socio-economic <u>benefit</u> that would accrue if the existing WC1 WEF and proposed Boulders WEF were to operate concurrently.</p> <p>66. To rebut Aurora’s claims of a significant negative socio-economic impact that were raised on appeal, and to show the potential overwhelming socio-economic <u>benefits</u> associated with the concurrent operation of the WC1 WEF and the proposed Boulders WEF, the respondent requested the independent socio-economic specialists Urban-Econ, who prepared the original socio-economic impact assessment specialist report that was attached to the FEIR as Appendix J, to prepare a further socio-economic assessment report, a copy of which is attached to the respondent’s main appeal response as <b>Annexure D</b>. The purpose of such further assessment report was threefold:</p> <p>66.1. to provide an independent review of the potential socio-economic impacts that could be associated with the possible wake effects to be exerted by the</p>	
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	<p>proposed Boulders WEF in relation to the WC1 WEF;</p> <p>66.2. to consider two alternatives – the no go option and the Boulders WEF development option and illustrate the net effect on these alternatives from a local community benefit perspective; and</p> <p>66.3. to identify the opportunity costs associated with the proposed Boulders WEF not being developed.</p> <p>67. Although Urban-Econ made certain informed assumptions when compiling the assessment report, it nonetheless completed all calculations based on Tractebel’s worst-case scenario that predicted a 2.5% loss in AEP by WC1 WEF if it were to operate concurrently with the proposed Boulders WEF.</p> <p>68. After first calculating the potential losses that may accrue to Aurora as a result of wake effect impacts based on a maximum 2.5% loss in AEP, Urban-Econ then determined the socio-economic impacts of the no-go alternative. When the results of the two calculations were compared side by side, Urban-Econ was in a</p>	
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	<p>position to, on page 16 of the assessment, make a resounding conclusion in favour of the two WEFs operating concurrently in so far as it confirmed that the following maximum socio-economic benefit would be realised as a result thereof: <i>“While the ability of WC1 to spend on its SED and ED initiatives as a result of the wake effect induced by BWF would be reduced, it is expected to be offset by the injection of funds into the SED and ED initiatives from revenue derived by BWF. Considering the commitments of BWF with respect to SED and ED initiatives, it is expected that a total of R182.4 million will be invested in the local community over 20 years starting from 2024. <u>Thus, the net effect for the local community will be positive and will equate to R179.5 million.</u>”</i> (underlined text is the respondent’s emphasis).</p> <p>69. Given the above irrefutable positive socio-economic benefits that would accrue as a result of the development of the proposed Boulders WEF, such benefits must be regarded as significant and satisfactory mitigation of any possible negative socio-economic impacts, including negative impacts on dividends available for distribution to Aurora</p>	
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	<p>shareholders as well as funds available for contributions by Aurora towards SED.</p> <p>70. Moreover, even if Aurora's overall shareholder dividends and SED contributions are reduced, this does not result in a breach of any contractual obligations or commitments owed to the Department of Mineral Resources and Energy as such dividends and contributions are based on a percentage of turnover and not on a specific contractually predetermined monetary amount.</p> <p>71. With reference to the full content of the report attached to the respondent's main appeal response as <b>Annexure D</b> read together with the submissions made above, it is respectfully submitted that this ground of appeal must also be dismissed on the basis that the unquantified and unsubstantiated socio-economic impacts are far outweighed and mitigated by the irrefutable maximisation of the socio-economic benefits that would be realised by the concurrent operation of the existing WC1 WEF and the proposed Boulders WEF.</p> <p>72. With reference to the potential socio-economic impacts that would be felt by farmers and</p>	
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<p><b>Comprehensive wake effects assessment</b></p> <p>39. The nature, scale, duration and significance of potential wake related impacts depends on the final design, layout and turbine specifications for the proposed Boulders WEF. The proposed turbines, as per the Applicant’s preliminary design and layout provided to the Appellant and used in the Wake Assessment Report, used for the proposed Boulders WEF are Enercon E-103 2.35MW turbines with a 103m rotor diameter and a 108m hub height.</p> <p>40. The precise impact associated with wake effect is dependent on the final design and layout of the project. As the final design has not yet been determined (with the authorisation contemplating the possibility of micro-siting at a later stage), this creates even more uncertainty regarding the extent of wake effect impacts. The result will</p>	<p>“other beneficiaries”, Aurora fails to identify what these potential socio-economic impacts would be and further fails to identify who these other beneficiaries are. Such wording seeks to portray certain socio-economic impacts that would accrue as a result of the Boulders WEF, but fails to substantiate such claims.</p> <p>73. Accordingly, it is respectfully submitted that this ground of appeal should be dismissed.</p> <p><b><u>Comprehensive wake effects assessment</u></b></p> <p>74. The issues raised herein by Aurora are generally a repetition of the same points previously raised by it and the respondent therefore does not intend responding to the same issues again save for agreeing that the nature, scale and significance of potential wake related impacts are dependent on the final design, layout and turbine specification of the proposed Boulders WEF.</p> <p>75. As previously indicated, the respondent will appoint an independent consultant to undertake a wake assessment and which assessment will be based on the final design</p>	
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<p>be a significant increase in adverse impacts if the design, final layout and turbine specifications of the proposed Boulders WEF are not informed by a comprehensive wake effects assessment as part of the EIA process. The Minister, as appellate authority, is required to ensure that potential or actual impacts are quantified and mitigated, and that compensation is required for any residual impacts on the WC1 WEF.</p> <p>41. The Wake Assessment Report was based on the layout provided by the Applicant for the proposed Boulders WEF and by modelling wake effects if the proposed Boulders WEF employed Enercon E-103 2.35MW turbines with a 103m rotor diameter and a 108m hub height. By contrast, and as indicated above, the WC1 WEF turbines are significantly smaller and more susceptible to wake effects from the proposed Boulders WEF. Without the proposed Boulders WEF being subjected to a detailed wake effects analysis and by not accurately quantifying the likely impact (technical and financial) of this on downwind turbines (particularly impacts on the WC1 WEF), the EIA process has failed to determine the severity of the anticipated project impact with the requisite level of certainty.</p> <p>42. Based on the Wake Assessment Report, the impact of wake effects cannot be discounted, and provision should have been made during the EIA process to assess, avoid and mitigate this potential impact on the WC1 WEF.</p>	<p>and proposed layout as well as the final turbine specifications. Such wake assessment will therefore provide the most accurate assessment of any possible wake effect impact that the proposed Boulders WEF may have on the WC1 WEF.</p> <p>76. The Minister, as the appellate authority, can therefore, without setting the environmental authorisation aside, ensure that the possible impacts of the proposed Boulders WEF are quantified and, to the extent necessary (if at all), mitigated by allowing the respondent to undertake the wake assessment and public participation process as described in paragraphs 22 to 37 above. Based on such processes and the I&amp;AP comments received thereon, the Chief Director will be in a position to determine whether it is appropriate to approve the proposed final layout and EMPr, or not.</p> <p>77. If the Chief Director does approve such final layout and EMPr, the Chief Director has the administrative power to further determine whether any additional mitigation measures, including the addition of further conditions</p>	
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	<p>within the environmental authorisation, are required under the circumstances or not.</p> <p>78. It is further denied that the WC1 WEF turbines are significantly smaller and more susceptible to wake effects that may be caused by the proposed Enercon E-103 2.35MW turbines with a 103m rotor diameter and a 108m hub height. In fact, the wind energy converter (hereinafter referred to as “WEC”) type installed on the WC1 WEF turbines is the Vestas V90 2.0 MW, which has a published rated wind class of IEC IIa. The ENERCON E-103 108m WEC is rated to wind class IEC 3a. Both WEC types are from an equivalent 2 MW to 2.5 MW product platform with an accordingly matched rotor diameter and therefore are not significantly different in size when considered in the context of all WEC product classes available globally.</p> <p>79. Without confirmatory detailed computational analysis, considering all relevant site-specific variables, it cannot be stated that smaller rotor diameter WECs are more susceptible to wake effects that those with slightly larger rotors. Nonetheless, the extent to which wake effect from the proposed Boulders WEF may impact</p>	
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<p><b>Summary: Wake effect</b></p> <p>43. The information commissioned by the Appellant evidences a real and valid concern about adverse wake effect impacts on the WC1 WEF. This gives rise to negative socio-economic consequences for the WC1 WEF as the reduction in energy yield and capacity caused by wake effect will negatively impact on SED benefits to the local</p>	<p>WC1 WEF, such impact will, in due course, be assessed in detail taking all variables into consideration.</p> <p>80. The respondent confirms that the opportunity still exists for it to, within the current EIA process, assess the potential impact that wake effect could have on the WC1 WEF. Based on such assessment, sufficient information will be available to determine whether any mitigation measures are necessary under the circumstances or not. It is therefore denied that the EIA process has, as of yet, failed to determine the severity of the anticipated project. It is therefore respectfully submitted that any issues raised by Aurora herein should be dismissed.</p> <p><b><u>Summary: Wake effect</u></b></p> <p>81. The content of these paragraphs, in particular the assertion that the EIA process and the Chief Director's decision to grant the environmental authorisation was fatally flawed, is denied for the various reasons already stated in this response.</p> <p>82. While the respondent has confirmed that it will not renege on its previous commitment to</p>	
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community (as those benefits are linked to the WC1 WEF project revenue).

44. Based on the findings of the Wake Assessment Report, the proposed Boulders WEF gives rise to significant adverse impact and the correct application of the mitigation hierarchy requires that the number and/or the siting of the turbines on the proposed Boulders WEF must be removed and/or adjusted as a result of the appeal as the information confirms the adverse impact.

45. The EIA process for the proposed Boulders WEF failed to ensure that wake effects and associated impacts are avoided and/or mitigated. It has been illustrated that the nature, extent and significance of the impact has not been taken into account. The EIA process has also made no attempt to ensure that residual impacts will be compensated. The consequence of this is that, proposed Boulders WEF has been authorised without taking into account the actual or potential impact on socio-economic conditions. In the absence of a detailed assessment to overcome the shortcomings of the wake impact technical analysis relied upon in the FIER, the Appellant submits that the EIA process and the Department's decision for the project is fatally flawed.

46. In summary, the EIA process and the environmental authorisation issued by the Department for the proposed Boulders WEF have failed to identify and/or predict the actual or potential wake effects and associated impacts on the operation, viability and sustainability of the WC1 WEF. The Appellant requires that the

Aurora to appoint an independent consultant to undertake a wake assessment, such assessment will not include, as is proposed by Aurora on appeal, a forecast energy yield. Such request goes beyond the precedent established by the Minister in the appeal submitted by Grassridge Wind Power (Pty) Ltd against the granting of an environmental authorisation to Bayview Wind Power (Pty) Ltd for the development of the proposed Bayview WEF (hereinafter referred to as "the Grassridge matter"). It is therefore denied that the environmental authorisation should be varied on appeal requiring the respondent to undertake a forecast energy yield.

83. Aurora suggests in its appeal at paragraphs 51, 52.2, and 53, which suggestion is repeated at paragraphs 26.1, 44, and 46 that the EIA process was flawed in so far as no attempt was made to ensure that the residual impacts on WC1 WEF will be compensated. The Chief Director's decision to grant the environmental authorisation was, according to Aurora, further flawed in so far as the environmental authorisation did not include a condition requiring Aurora to be compensated for any losses it may suffer as a result of *inter alia* the

<p>environmental authorisation for the proposed Boulders WEF be varied, to include the following requirements and conditions:</p> <p>46.1 In order to ensure that the potential wake related impacts of the project on the WC1 WEF are identified and assessed and the mitigation hierarchy implemented, a detailed Forecast Energy Yield Report, identifying the potential energy loss expected on WC1 WEF caused by wake effects of the proposed Boulders WEF must be undertaken by an independent external specialist at the Applicant's cost.</p> <p>46.2 The Forecast Energy Yield Report must include an accurate identification, evaluation and assessment of wake effects associated with proposed Boulders WEF, which information must be shared with the Appellant and the Department for reconsideration of the merits of the issuing of the environmental authorisation to the proposed Boulders WEF. The mitigation hierarchy shall be applied by the Department to ensure that significant impacts caused by wake effects on the WC1 WEF are avoided, minimised and compensated.</p> <p>46.3 The approval by the Department of the final development layout map and the final site layout map referred to in the environmental authorisation must be subject to and informed by the Forecast Energy Yield Report.</p> <p>Alternatively, any compensation required to mitigate and/or compensate for wake effects identified and determined in the Forecast Energy Yield Report associated with expected energy loss by WC1 WEF as a result of the operation of the proposed Boulders</p>	<p>wake effect impacts that the proposed Boulders WEF would have on WC1 WEF.</p> <p>84. Aurora, directly requests that the environmental authorisation be amended on appeal to include a condition requiring the respondent to mitigate and / or compensate it for the wake effect impacts on WC1 WEF.</p> <p>85. In the alternative, Aurora submits that the compensation payable must be regulated by way of an agreement between itself and the respondent and the terms of such agreement must be to the satisfaction of the Department.</p> <p>86. First, it is hereby respectfully submitted that the Minister of the Department does not, as the appeal authority in terms of these proceedings or any other proceedings under NEMA, have the administrative power to make any order or directive in terms of which the respondent is required to negotiate a compensation agreement with Aurora.</p> <p>87. Further, while the Chief Director or the Minister does have the administrative power to amend the environmental authorisation, it is respectfully submitted that such power does not extend to the inclusion of a condition</p>	
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<p>WEF, shall be addressed and regulated by way of written agreement between the Applicant and the Appellant, to the satisfaction of the Department.</p>	<p>requiring the respondent to financially compensate Aurora for any losses that may be suffered as a result of the proposed Boulders WEF. Even if such condition were to be included within the ambit of the environmental authorisation, the respondent would certainly have the right to appeal against such decision and, if unsuccessful, take such decision on judicial review for being <i>ultra vires</i> the Chief Director's or Minister's powers.</p> <p>88. Regarding compensation in the form of the mitigation of the alleged negative impacts of the proposed Boulders WEF, it is respectfully submitted that such form of mitigation can still be achieved in so far as the Chief Director can, to the extent necessary and based on new information and documentation available to him, amend the environmental authorisation to include any appropriate conditions under the circumstances.</p> <p>89. Second, it does not presently make sense for Aurora and the respondent to negotiate a compensation agreement when the proposed Boulders WEF has not yet reached preferred bidder status in terms of the Department of Mineral Resources and Energy's REIPPP and</p>	
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	<p>is even further away from achieving financial close.</p> <p>90. The reality is that the mere granting of the environmental authorisation does not confirm that the proposed Boulders WEF will be developed. There are multiple significant administrative and legal barriers to the proposed Boulders WEF being developed and it is therefore grossly premature to even consider negotiating and finalizing a compensation agreement between the two parties.</p> <p>91. In any event, the negotiation of a compensation agreement between the parties is not a consideration that needs to be taken into account by the Chief Director when issuing an environmental authorisation and it is certainly not a factor which the Minister is required to consider on appeal. This has previously been confirmed by the Minister in her decision in the Grassridge matter in so far as the Minister's decision dated 14 October 2019, confirmed at paragraph 1.43 on page 10 thereof that <i>"I am of the view that the existence of a commercial agreement is not a relevant</i></p>	
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<p><b>Grid connection impacts</b></p> <p>47. The FEIR records that the Applicant was required to conduct the Environmental Impact Assessment (EIA) process for the proposed Boulders Wind Farm, and separate Basic Assessment (BA) process for the associated grid connection and that the routing of this</p>	<p><i>consideration when assessing an EA application.”</i></p> <p>92. As such, the request by Aurora to have the environmental authorisation amended to include a condition requiring the respondent to compensate it for any losses that it may incur due to <i>inter alia</i> wake effect impacts, must be dismissed.</p> <p>93. The alternative submission by Aurora that the Department must ensure that a satisfactory compensation agreement is concluded between itself and the respondent should also be dismissed.</p> <p><b><u>Grid connection impacts</u></b></p> <p>94. It is, for practical planning reasons, common practice for the required sub-transmission lines and grid connections to fall under a separate environmental authorisation to the environmental authorisation for a WEF. The reason being, is that such electrical infrastructure is actually owned and operated by Eskom and any environmental authorisation in relation thereto will eventually</p>	
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<p>grid connection and the associated impacts are currently being investigated via a separate BA impact assessment.</p> <p>48. The separation of the impact assessment process is further described in Section 5.4.2 of the FEIR as follows: “The electricity generated by the turbines needs to be collected, transformed and then distributed to the national grid. The “step-up” process that occurs within the substation will be included in this EIA process. However, the evacuation of electricity via a new powerline to connect to the national grid will be assessed in a separate BA process for the proposed Grid Corridor”.</p> <p>49. Stakeholder concerns raised during the public participation process (PPP) for the proposed Boulders WEF expressly identified interference of the associated grid connection with the ability of WC 1 to export generation capacity as a valid project-related impact. During the PPP, WC1 WEF raised the concern that the practicalities concerning the grid connection need to be clarified and agreed including any required outages and losses to West Coast 1 in connecting to the Aurora-Fransvlei line, proximity to West Coast 1 turbines, impact on existing land leases and impact on obligations under the EMP. No such confirmation or verification was received during the EIA process or contained in the FEIR. This valid concern about a legitimate impact remains unaddressed and unresolved.</p> <p>50. With the environmental impact assessment of the proposed Boulders WEF being undertaken in two separate documents, and two separate processes, in support of two separate authorisations in</p>	<p>be transferred into the name of Eskom so that it can operate the infrastructure in accordance with the conditions of the environmental authorisation.</p> <p>95. As Eskom is, and always will be, the owner of the substations and transmission lines on all electricity generation sites, all IPPs, including the respondent, are faced with two options when planning for the development of such electrical infrastructure.</p> <p>96. First, an IPP can rely on Eskom to apply for all licences, permits and authorisations, including an environmental authorisation, required for the development of the electrical infrastructure, to build such infrastructure and then to own and operate the same.</p> <p>97. Second, an IPP can itself apply for all licences, permits and authorisations, including the environmental authorisation, self-build the authorised electrical infrastructure and, once construction is complete, hand over the infrastructure to Eskom and transfer all licences permits and authorisations to Eskom for the lawful operation thereof.</p>	
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<p>terms of section 24 of NEMA (i.e. one considering and assessing the impacts associated with the proposed Boulders WEF and one considering and assessing the impacts associated with the grid connection respectively), the fact of separately considering and assessing the proposed Boulders WEF and the grid connection impacts has resulted in a defective assessment process. The reason being that identified impacts have not been assessed. The FEIR for the proposed Boulders WEF and the separate Basic Assessment process dealing with the routing of the proposed Boulders WEF grid connection, and the associated impacts with such grid connection, do not deal with and/or assess the impact of interference with grid connection of the proposed Boulders WEF on WC1 WEF. The FEIR also fails to address the adverse effect this connection will have on the ability of adjacent wind farms to export generation capacity. A critical issue of concern to the stakeholders within the receiving environment has therefore not been assessed.</p> <p>51. Nowhere in the FEIR has the socio-economic impact of the grid connection been investigated, evaluated or assessed. By way of illustration of the adverse impact of grid interference on the sustainability of WC1 WEF, the grid connection is anticipated to result in the substation being shut down for a number of days. This will have a direct consequential adverse impact on the sustainability of WC1 WEF in terms of loss of production days which can be quantified as a loss of revenue.</p> <p>52. The defensibility of separating the EIA process for the proposed Boulders WEF and grid connection is without merit. The</p>	<p>98. The omnipresent risks associated with an IPP adopting the first option above are self-evident in so far as the process of, and costs associated with applying for and obtaining all required licences, permits and authorisations are out of the IPPs control. In addition, the construction of the electrical infrastructure is also beyond the control and management of the IPP. Such lack of control at all such phases has obvious potential time and costs ramifications and could result in significant project overruns for a WEF project which is a risk that most IPPs are not willing to accept, particularly when the process can be managed by themselves.</p> <p>99. Even the Department of Mineral Resources and Energy has previously recognised the risks of placing responsibility for applying for the required licences, permits and authorisations and then managing the construction of the electrical infrastructure required for a WEF in the hands of Eskom, in so far it did not, for the very reasons highlighted in paragraph 98 above, require an electrical infrastructure environmental authorisation to be submitted as part of the bid</p>	
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<p>result is that the EIA has failed to evaluate and assess a key project-related impact. The prescribed minimum assessment requirements in sections 23 and 24 of NEMA, read with the EIA Regulations, have not been complied with. Specifically, the EIA process has failed to comply with the obligation to assess the “nature, significance and consequences of the impact and risk” or the “extent and duration of the impact of the risk.”</p> <p>53. The impacts on WC1 WEF associated with interference with grid connection for the proposed Boulders WEF (and associated adverse socio-economic effects on existing development) remain a serious and valid concern in connection with the proposed Boulders WEF. But for the proposed Boulders WEF, the impact of interference associated with grid connection would not arise. It follows that this impact must be investigated during the EIA process for the proposed Boulders WEF. The failure to do so renders the EIA defective and deficient in the assessment of a key project-related impact.</p> <p>54. The Appellant reiterates its concern raised during the EIA process and requires the impacts on WC1 WEF associated with interference with grid connection caused by the proposed Boulders WEF to be addressed and resolved through the EIA process for the proposed Boulders WEF.</p> <p>55.</p>	<p>process in the fourth bid window under the REIPPPP.</p> <p>100. Consequently, in order to reduce the known risks with option one above, the separation of the EIA processes for the development of WEFs and for the development of the associated electrical infrastructure has, for practical planning reasons, become standard and accepted practice in the renewable energy sector.</p> <p>101. It is therefore denied that the EIA process for the Boulders WEF is defective and the assertion by Aurora that it is legally indefensible for the two processes to have been separated is without merit.</p> <p>102. Aurora contends at paragraph 61 of its appeal that its email to the EAP, dated 27 June 2019, stipulated that the EIA process for the Boulders WEF should assess and determine the impacts associated with the grid connection. Even if the content of the email of 27 June 2019 does suggest that the EAP should have assessed the grid connection impacts during the EIA process for the proposed Boulders WEF, no corresponding</p>	
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	<p>duty or obligation would have been placed on the EAP to assess and address such impacts as part of such EIA process.</p> <p>103. By such averment, Aurora attempts to turn the purpose of the FEIR for the Boulders WEF on its head by asserting that such process incorrectly failed to consider the impacts of the proposed 132kV sub-transmission line and grid connection point. Such impacts were patently not considered as part of the FEIR for the Boulders WEF as it was always the intention of the respondent to consider such impacts separately under a BAR process.</p> <p>104. It is therefore further denied that the EIA process for the Boulders WEF was defective and deficient and it is hereby submitted that the issues raised on appeal by Aurora relating to the grid connection impacts should be dismissed.</p> <p><b><u>Precedent</u></b></p> <p>105. It is agreed that the Department has, certainly in relation to the decision in the Grassridge matter, set precedent requiring developers, such as the respondent, to appoint independent consultants to undertake a wake</p>	
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	<p>assessment as part of the EIA process. However, it must firstly be recognized that the decision on the Grassridge matter was handed down on a date after the submission of the final FEIR to the Department.</p> <p>106. Secondly, it is denied, for the numerous reasons already presented in this response, that no further opportunity exists for an independent wake assessment to be undertaken as part of the EIA process and for the outcome thereof to be considered by the Chief Director.</p> <p>107. Moreover, the Department has further set a well established precedent regarding its standard approach to approving environmental authorisations for WEFs but delaying the approval of the final layouts and EMPs associated therewith. The Chief Director did not, under the current circumstances, depart from such precedent.</p> <p>108. Accordingly, it is denied that the Chief Director's decision to grant the environmental authorisation was irregular and irrational.</p>	
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<p><b>CONCLUSION</b></p> <p>56. The need for a wake impact assessment is required in terms of section 24O of NEMA in that all relevant factors are to be taken into account including information contained in the application form, reports, comments, representations and other documents submitted in terms of NEMA to the relevant authority in connection with the application. The fatal flaw in the application is that it does not include a wake impact assessment as required by the provisions of NEMA and the NEMA Regulations.</p> <p>57. It is the Appellant's submission that the Department's decision is unreasonable in that it fails to take account of and/or give due recognition to the following direct, long-term and cumulative impacts:</p>	<p><b><u>CONCLUSION</u></b></p> <p>109. The averment made by Aurora in its conclusion at paragraph 66 on page 15 of its appeal that any findings of an independent wake assessment that may be undertaken after the issuing of the environmental authorisation will not be subjected to the scrutiny of a public participation process provides irrefutable proof that Aurora has misunderstood and / or misread the content of the environmental authorisation that was issued by the Chief Director.</p> <p>110. As per the standard practice of the Department, Conditions 12 and 14 of the environmental authorisation ensures that all I&amp;APs will be provided with a further 30 day public participation process to review and comment on any new information made available in relation to the proposed final layout and the EMPr.</p>	
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<p>57.1 The wake effects associated with the proposed Boulders WEF which will adversely affect the integrity, viability and socio-economic sustainability of the WC1 WEF.</p> <p>57.2 The grid connection by the proposed Boulders WEF and the adverse effect this will have on the viability and sustainability of the WC1 WEF.</p> <p>58. The failure to accurately quantify the potential impacts of the proposed Boulders WEF and the associated socio-economic impacts (both direct and cumulative) on WC1 WEF is a serious deficiency in the EIA process and as such, the Department's decision fails to apply and uphold the principles and provisions of NEMA. The Minister is requested to remit the decision back to the Department for reconsideration based on the Applicant first supplementing the EIA process with the necessary and relevant information to address the abovementioned impacts as motivated in this appeal.</p> <p>59. The fact that the Applicant intends to undertake a wake assessment only after the authorisation is unacceptable as whatever findings it may now put forward before the relevant authorities are not capable of being subject to the scrutiny of a public participation, as required by the NEMA regulations.</p> <p>60. It is clear that an independent and impartial specialist is required to assess the wake impacts of the proposed Boulders WEF and its impacts on the WC1 WEF. This has been recognised by the Department - there are a number of applications where the Department has required that an independent wake assessment</p>	<p>111. A wake assessment will be undertaken as part of the above process and all I&amp;AP comments thereon together with the findings of the assessment will be presented to the Chief Director. As such, all issues will be thoroughly ventilated. It is therefore respectfully submitted that:</p> <p>111.1. the Chief Director will be placed in a position whereby all relevant factors, in particular the possible wake effect impacts, can be taken into account when making a decision on the final layout and EMPr for the proposed Boulders WEF. Accordingly, there is currently no fatal flaw in the application and the decision to grant the environmental authorisation does not fall to be set aside;</p> <p>111.2. the Chief Director's decision to grant the environmental authorisation was not unreasonable as ample opportunity remains for the Chief Director to give due consideration to any possible wake effect impacts that the Boulders WEF may have on the integrity, viability and socio-economic sustainability of the</p>	
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<p>report is carried out. Raising clear economic considerations that relate to the sustainability enquiry after the authorisation is a clear indication of the need to have had this thoroughly ventilated at the EIA phase. This was not done. As a result, the Department did not have all relevant information before them and the decision to grant authorisation falls to be set aside.</p>	<p>WC1 WEF and for such impacts to be weighed against the significant socio-economic benefits that would accrue as a result of the concurrent operations of the two WEFs;</p> <p>111.3.the Chief Director's decision to grant the environmental authorisation was not unreasonable as ample opportunity remains for the Department to determine whether it is suitable to, under the circumstances, grant an environmental authorisation for the 132kV sub-transmission line. Accordingly, such request should be dismissed; and</p> <p>111.4.the respondent has undertaken to appoint an independent and impartial consultant to undertake a wake assessment. Moreover, the Chief Director has yet to make a decision on whether to approve the final layout and EMPr or not. Consequently, nothing new would be achieved if the Minister were to remit the decision back to the Department for reconsideration.</p>	
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	<p>Accordingly, such request should be dismissed.</p> <p>112. In conclusion, while the respondent undertakes to comply with the requirements of Conditions 12 and 14 of the environmental authorisation as well as the content of the EIA Regulations, it is notable that, even after complying with such requirements, many affected parties, including Aurora, may be aggrieved by the location of the proposed Boulders WEF. However, that is not necessarily a sufficient ground for the successful opposition to the project, or the refusal to approve the final layout and EMP. The public participation process will not always resolve all concerns of interested and affected parties and not all negative impacts can be fully mitigated and this is to be anticipated.</p> <p>113. The respondent submits that Aurora's grounds of appeal need to be weighed up against the country's energy security needs, the development imperative to reduce poverty and unemployment and the environmental advantages of renewable energy. The Department of Mineral Resources and Energy will procure approximately 26 630MW of</p>	
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	<p>renewable energy by 2030 as per the Integrated Resource Plan 2019. It is notable that a significant proportion of this 26 630 MW of renewable energy will be made up of wind energy. This will ensure that South African citizens have access to clean energy to grow the economy of the country, provide much needed local jobs, develop local entrepreneurs, and ensure a low carbon future, in accordance with our country's global commitments on climate change, made at CoP 21.</p> <p>114. The respondent therefore respectfully submits that the Minister must dismiss all the grounds of appeal raised by Aurora and that the environmental authorisation should not be set aside and remitted to the Chief Director for his reconsideration.</p> <p>115. Rather, the Minister must allow the respondent the opportunity to comply with Conditions 12 and 14 of the environmental authorisation, in so far as the respondent must, when the final layout has been determined, appoint an independent consultant to conduct a wake assessment which assessment will undergo a public participation process and for</p>	
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	<p>all the necessary information and documentation to then be presented to the Chief Director for his consideration.</p> <p>116. Based on such processes and the information and documentation that will be available, the Chief Director will be in a position to make an informed decision on whether to approve the final layout and EMPr or not. If the decision is to approve the final layout and EMPr, then the Chief Director must further determine whether it is, in terms of the administrative powers available to him, necessary under the circumstances to amend the environmental authorisation to include further applicable conditions therein and / or prescribe the inclusion of certain mitigation measures in the EMPr.</p> <p>117. Alternatively, and in the event that the Minister is of the opinion that Conditions 12 and 14 have not sufficiently ensured that the requirements of NEMA and the EIA Regulations 2014 will be complied with and do not ensure that the rights and interests of I&amp;APs are adequately safeguarded, then it is respectfully submitted that, as an appeal in terms of section 43 of NEMA is a wide appeal,</p>	
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	<p>the Minister can, upon the review and consideration of new information and documentation made available during this appeal process, substitute her own decision for the decision on appeal.</p> <p>118. It is further respectfully submitted that sufficient additional information and documentation is now available in the form of the Tractebel wake assessment and the further socio-economic assessment compiled by Urban-Econ attached to the respondent's main appeal response as <b>Annexure D</b>. Consequently, the Minister can now, in an informed and balanced manner and without setting the decision on appeal aside and remitting it back to the Chief Director for reconsideration, substitute her own decision for the decision on appeal.</p> <p>119. It is respectfully submitted, for the reasons and qualifications more fully set out below, that the Minister can, based on the additional information and documentation before her, decide to dismiss the Aurora appeal and uphold the environmental authorisation. If required, the Minister can also amend the content of the environmental authorisation to</p>	
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	<p>include any additional conditions that are deemed necessary under the circumstances and / or prescribe the inclusion of certain mitigation measures in the EMPr.</p> <p>120. Although the respondent does not agree with the wake models that were applied by Tractebel when undertaking its wake effect impact assessment, the respondent nonetheless agrees, for the purposes of this appeal only, that the proposed Boulders WEF may, as per Tractebel's absolute worst-case scenario, have a maximum 2.5% wake effect impact on the WC1 WEF.</p> <p>121. The respondent makes the above concession subject to the following qualifications:</p> <p>121.1. the respondent <u>does not</u> hereby admit, agree to, accept, and / or concede any possible liability, negligence or wrongdoing for damages of any kind, including potential economic losses, that may be suffered by Aurora or any other third party as a result of any possible impact, including wake effect impact, that the proposed Boulders WEF, if developed, may have on the WC1 WEF;</p>	
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	<p>121.2.that, even at the maximum wake effect impact of 2.5%, the respondent denies that the infrastructure of the WC1 WEF will suffer material fatigue and that such impacts would, in any event, be too insignificant to be considered abnormal and the respondent therefore denies that:</p> <p>121.2.1. additional operational downtime will occur at the WC1 WEF;</p> <p>121.2.2. there will incremental increases in associated maintenance costs; and</p> <p>121.2.3. there will be a decrease in anticipated life of the WC1 WEF turbines.</p> <p>121.3. Based on a possible maximum 2.5% wake effect, the possible losses that may be suffered by Aurora, as determined by Urban-Econ on page 15 of <b>Annexure D</b> attached to the respondent's main appeal response, are substantially and satisfactorily offset by the socio-economic benefits that would</p>	
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	<p>accrue as a result of the concurrent operation of the WC1 WEF and the proposed Boulders WEF.</p> <p>121.4. Based on the respondents own internal assessments, the maximum wake effect on the WC1 WEF is more likely to be below 2% with the proposed Boulders WEF likely to suffer a comparable 4% wake effect impact from the WC1 WEF.</p> <p>122. The respondent further does not hereby admit, agree to, accept, and / or concede any possible liability, negligence or wrongdoing for damages of any kind, including potential economic losses, that may be suffered by Aurora or any other third party as a result of any possible grid connection impact on the WC1 WEF if the proposed Boulders WEF is developed.</p> <p>123. Moreover, the needs and desirability of the proposed Boulders WEF are undeniable in so far as the FEIR has irrefutably confirmed that such project would:</p> <p>123.1. significantly contribute towards securing the country's energy needs,</p>	
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	<p>123.2. uphold the development imperative to reduce poverty and unemployment, particularly in relation to the communities located within close proximity to the proposed Boulders WEF;</p> <p>123.3. significantly contribute towards ensuring that South African citizens have access to clean energy that upholds every citizen's right to an environment that is not harmful to their health or well-being;</p> <p>123.4. grow the economy of the country;</p> <p>123.5. provide much needed local jobs;</p> <p>123.6. develop local entrepreneurs; and</p> <p>123.7. contribute towards ensuring a low carbon future, in accordance with our country's global commitments on climate change, made at CoP 21.</p> <p>124. While it is certainly not the respondent's intention to dictate to the Minister the weight that is to be attached to particular factors, or how far a particular factor affects the eventual</p>	
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	<p>determination of this appeal, it is clear that if the environmental authorisation was to be set aside, the above overwhelming socio-economic benefits that would accrue from the concurrent operation of the proposed Boulders WEF and the WC1 WEF would not be realized.</p> <p>125. It is therefore respectfully submitted that it would be both reasonable and rational under the circumstances for the Minister to dismiss the Aurora appeal and, to the extent necessary, substitute her own decision for the decision on appeal subject to the inclusion, within the existing environmental authorisation, of any additional lawful conditions that the Minister deems necessary under the circumstances and / or to prescribe any additional mitigation measures for inclusion in the final EMPr.</p> <p>126. As a third alternative, and only in the event that the Minister is of the opinion that neither of the first two alternatives advanced by the respondent above are suitable under the circumstances, then it is respectfully submitted that the Minister would be left with no alternative but to set the environmental authorisation aside and remit the decision to</p>	
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	<p>grant the environmental authorisation back to the Chief Director for reconsideration based on the respondent first supplementing the EIA process with the necessary and relevant information to address the wake effect impacts that the proposed Boulders WEF may have on the WC1 WEF.</p> <p>127. It is further respectfully submitted that should the Minister elect this third alternative then such decision should exclude a requirement to supplement the EIA process with any information to address any possible grid connection impacts as a separate BAR process has been undertaken by the respondent in relation thereto.</p>	
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