IN THE WATER TRIBUNAL

IN THE APPEAL OF:

THE GROUNDWORK TRUST	**APPELLANT**

AND

ACTING DIRECTOR-GENERAL: **DEPARTMENT OF WATER AND SANITATION**	**FIRST RESPONDENT**
ACWA POWER KHANYISA THERMAL **POWER STATION (RF) PTY LTD**	**SECOND RESPONDENT**

SUPPLEMENTARY NOTICE OF APPEAL IN TERMS OF SECTION 148(1)(f) OF THE NATIONAL WATER ACT 36 OF 1998

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1. Take notice that the Appellant intends appealing, at a date, time and place determined by the Tribunal Officer, against the decision of the First Respondent to issue a water use licence (ref: 06/B11F/CGIHE/6684) (the "WUL") to the Second Respondent (the "Decision"), in respect of its proposed Khanyisa Coal Baseload Independent Power Producer Project proposed to be situated near eMalahleni, Mpumalanga Province (the "Khanyisa Project").

2. Take notice that, based on the information currently available to the Appellant, in addition to what is contained in the Notice of Appeal submitted on 8 August 2018, this appeal is on the following grounds:

   2.1. The Decision is in violation of the constitutional rights to an environment not harmful to health or wellbeing, dignity and equality (as set out in sections 24, 10 and 9 of the Constitution of the Republic of South Africa, 1996 (the "Constitution")) and the duties of

care entrenched in section 19 of the National Water Act 36 of 1998 (the "NWA") and section 28 of the National Environmental Management Act 107 of 1998 ("NEMA").

2.2. The First Respondent failed to take proper account of the relevant factors, as required in terms of section 27 of the NWA, when awarding the WUL.

2.3. The Decision undermines the duty of the First Respondent to act as public trustee of South Africa's water resources to *"ensure that water is protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner, for the benefit of all persons and in accordance with its constitutional mandate," a*s required in terms of section 3 of the NWA *et al.*

2.4. The Decision undermines the national resource water and catchment management strategies and is therefore in breach of the obligations of the First Respondent in terms of sections 7 and 11 of the NWA to give effect to these strategies when exercising any duty or performing any power under the NWA.

2.5. By endangering the reserve, the Decision is in breach of the First Respondent's obligations in terms of section 18 of the NWA to give effect to the reserve when exercising any duty or performing any power under the NWA.

2.6. The Decision contravenes the principles under section 2 of NEMA, imposed on "*the actions of all organs of state that may significantly affect the environment*", in particular but not limited to consideration of the precautionary principle, the polluter pays principle the promotion of public participation, and the principles generally pertaining to sustainable development.

2.7. The Decision violates the right to procedurally fair administrative action in terms of section 33 of the Constitution, and section 3 of the Promotion of Just Administrative Act 3 of 2000 ("PAJA"), as well as the provisions of NEMA, in that *inter alia*:

2.7.1. there was inadequate notice of the nature and purpose of the application for the WUL;

2.7.2. there was no reasonable opportunity to make representations in respect of the application of the WUL;

2.7.3. the Decision is irrational;

2.7.4. the Decision is as a result of an account for irrelevant considerations and a failure to account for relevant considerations; and/or

2.7.5. the Decision was taken arbitrarily or capriciously.

3. Take note further that the Appellant requests, in order to facilitate the orderly hearing of the Appeal, that the First Respondent send to the offices of their representatives a detailed index of all documents provided to the Water Tribunal in terms of item 5(3)(a) of Schedule 6 to the NWA.

4. Take note further that the Appellant reserves its rights to further amplify its appeal on further information becoming available, and once it has received all of the documents in terms of item 5(3) of Schedule 6 to the NWA and had a reasonable opportunity to analyse these. To the extent necessary, the Appellant will seek condonation for so doing.

5. The Appellant appoints the Centre for Environmental Rights as their representative in this matter.

6. The Appellant will accept service of all documents in the above matter at the offices of their Centre for Environmental Rights at 2nd Floor, Springtime Studios, 1 Scott Road, Observatory 7925, Cape Town.

SIGNED AND DATED AT **PRETORIA** ON THIS 18th DAY OF **FEBRUARY 2019**.

APPELLANT'S REPRESENTATIVE
CENTRE FOR ENVIRONMENTAL RIGHTS
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TO: **WATER TRIBUNAL, DEPARTMENT OF WATER AND SANITATION**
Mr Robert Mabe, Registrar
By Email and by post
Emails: MabeR@dws.gov.za; MadimabeS@dws.gov.za
Address: Department of Water and Sanitation
Waterbron Building
191 Francis Baard Street
Pretoria
WUL no.: 06/B11F/CGIHE/6684
File no.: 24/2/1/B611/2/1

AND TO: **DIRECTOR-GENERAL (ACTING), DEPARTMENT OF WATER AND SANITATION**
Ms Deborah Mochotlhi
By Email
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AND TO: **ACWA POWER KHANYISA THERMAL POWER RF (PTY) LTD**
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IN THE WATER TRIBUNAL

IN THE APPEAL OF:

THE GROUNDWORK TRUST	**APPELLANT**

AND

ACTING DIRECTOR-GENERAL: **DEPARTMENT OF WATER AND SANITATION**	**FIRST RESPONDENT**
ACWA POWER KHANYISA THERMAL **POWER STATION (RF) PTY LTD**	**SECOND RESPONDENT**

SUPPLEMENTARY GROUNDS OF APPEAL

I. INTRODUCTION

1. This is an appeal to the Water Tribunal (the "Tribunal") in terms of section 148(1)(f) of the National Water Act, 1998 (the "NWA") read with rule 3(2) of the "Water Tribunal Rules"[1] against the decision of the Acting Director-General of the Department of Water and Sanitation (the "DG" and "DWS" respectively) on 7 December 2017 to issue water use licence no. 06/B11F/CGIHE/6684 to ACWA Power Khanyisa Thermal Power Station (RF) Pty Ltd ("ACWA") in respect of a circulating fluidised bed coal-fired power station proposed to be situated near eMalahleni in Mpumalanga Province, South Africa (the "Appeal" against the "Decision" to grant the "WUL" in respect of the "Khanyisa Project" or "Khanyisa"). This appeal supplements the grounds of appeal submitted by the Appellant on 8 August 2018.

[1] Published in terms of section 148(5)(c) of the NWA under Government Notice 926 in Government Gazette 28060, of 23 September 2005

2. The Appellant is the groundWork Trust, a non-profit environmental justice service and developmental organisation with NPO-number 045-235-NPO, and with its principal place of business at 6 Raven Street, Pietermaritzburg. The Appellant:

   2.1. works on environmental justice and human rights issues, focusing on coal, climate and energy justice, waste and environmental health, and works closely with South and Southern African communities, including community groups based in Mpumalanga in the area where the Khanyisa project is proposed to be located, namely the Highveld Environmental Justice Network;

   2.2. is a registered interested and affected party ("I&AP") in respect of the application process for Khanyisa's WUL as well as for its environmental authorisation and other requisite licences; and

   2.3. has authorised its attorneys, the Centre for Environmental Rights ("CER"), to institute the Appeal on its behalf. The original authorisation – as required in accordance with rule 8(2) of the Water Tribunal Rules was submitted with the initial notice of appeal dated 8 August 2018, and a copy is attached marked **Annexure A**. (Within this Appeal, the Appellant and CER are referred to interchangeably where appropriate.)

3. The First Respondent is the Acting Director-General: Department of Water and Sanitation ("DG") as the decision-maker who issued the WUL to ACWA Power on 7 December 2017.

4. The Second Respondent, ACWA, is a limited liability company duly registered in accordance with the laws of the Republic of South Africa with its registered address at 7th Floor 90 Grayston Building, 90 Grayston Drive, Sandton Johannesburg. ACWA holds the WUL that is the focus of the Appeal.

5. The Khanyisa Project was originally conceived as a 450MW, captive power project in which all power offtake would be consumed by Anglo Operations (Pty) Ltd ("Anglo").[2] In mid-2013, Anglo elected to bid the project under the Department of Energy's South African Coal Baseload Independent Power Producer Programme (the "CBIPP" Programme of the "DoE") as a dual offtake project. Environmental authorisation (the "EA") for the operation of a 450MW plant was received from the Department of Environmental Affairs ("DEA") in respect

[2]Aurecon, Environmental Authorisation Amendment Report ("June 2015 Amended EA") Khanyisa Power Station, Emalahleni Mpumalanga Province, 18 June 2015, p. 6.

of the Project on 31 October 2013, with the authorisation amended to allow for increased capacity of the Project to 600MW on 28 July 2015 (the "Amended EA").[3]

6. On 2 February 2017, the DEA approved the transfer of the Amended EA and all duties and responsibilities related to the Project from Anglo to ACWA.

7. The intended and authorised size of the Project is unclear and contradictory: Although the Amended EA is in respect of a 600MW power plant, the Project's June 2017 Integrated Water Use Licence Application and Integrated Water and Waste Management Plan (the "June 2017 IWULA") and National Energy Regulator of South Africa ("NERSA") electricity generation licence application are in respect of a 306MW plant comprised of two 153MW units.[4]

8. The WUL does not indicate the power output of the Project and the Record of Recommendation provided in respect of the Decision ("RoR") provides little clarification: The RoR refers to a proposed power station with a "*total capacity of 600 MW*" comprised of "*two 153 MW generating units fuelled by discard coal with a total nominal electricity generation capacity of approximately 306 MW.*" [5]

9. The authorised lifespan of the Project is also unclear: The June 2017 IWULA notes that the lifespan of the project is expected to be 30 years (elsewhere it states 40 years);[6] the 2012 Final Environmental Impact Assessment (the "2012 FEIR") records the lifespan of the project as 50 years;[7] and the RoR refers to the application for the water use in respect of a 40 year period "*based on the estimated lifespan of the plant*."[8]

10. The WUL itself is valid for 20 years with the Project's coal ash storage capacity (which has water impact implications) only viable for 5 years.[9]

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[3] Ibid.; Department of Environmental Affairs, Republic of South Africa, "Amendment of the Environmental Authorisation Issued on 31 October 2013 for the Proposed Construction of 450MW Khanyisa Coal Fired Power Station," p. 1

[4] ACWA Power Khanyisa Thermal Power Station, Application to NERSA, 3 November 2016, p. 5 & 7; June 2017 IWULA, p. 30.

[5] RoR section 1.1 p. 4.

[6] June 2017 IWULA, section 2.5.3. pp. 30, 110.

[7] Aurecon, "Final Environmental Impact Assessment Report: Environmental & Social Impact Assessment Report: Khanyisa Coal Fired Power Station, eMalahleni, Mpumalanga," March, 2012, ("2012 FEIR"), p. 385.

[8] RoR 3.3.1(k), p. 42.

[9] WUL section 4.1, p.2.

11. A key feature of the environmental implications of the Project, as set out below, is its use of a coal ash disposal facility to be located on a site directly connected to underground mine voids with "*extremely high*" hydraulic conductivity (the "Coal Ash Disposal Facility" or "Ash Disposal Facility").[10] As concluded by a DWS geohydrologist during the FEIR process "*the site locality is regarded as a fatal flaw due to underlining and backfilling of an open cast mine*" (a copy of this recommendation, the "Groenewald Memorandum", is attached marked **Annexure B**).[11] However, the WUL and RoR make little mention of this Coal Ash Disposal Facility beyond reference to the lining of this facility, and make no reference to the Groenewald Memorandum.

12. As set out below, the information provided to the Appellant by the DWS in relation to the Project, as required in terms of section 148(3) and schedule 6(5)(3) of the NWA, is not yet complete and the Appellant reserves the right to supplement this Appeal upon its receipt thereof.

13. Based on the information currently available to the Appellant, its Appeal against the WUL is on the following grounds:

    13.1. The Decision is in violation of the constitutional rights to an environment not harmful to health or wellbeing, dignity and equality (as set out in sections 24, 10 and 9 of the Constitution of the Republic of South Africa, 1996 (the "Constitution")) and the duties of care entrenched in section 19 of the NWA and section 28 of the National Environmental Management Act 107 of 1998 ("NEMA").

    13.2. The DG failed to take proper account of the relevant factors, as required in terms of section 27 of the NWA, when awarding the WUL.

    13.3. The Decision undermines the duty of the DG to act as public trustee of South Africa's water resources to *"ensure that water is protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner, for the benefit of all*

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[10] Chambers Report (Annexure H), p.4; Hansen Report (Annexure G)., section 3.3.

[11] Groenewald, M. 2012. Memo re: Khanyisa Coal Fired Power Station License Application. Geohydrologist, Department of Water Affairs Directorate of Resource Protection and Waste, Sub-directorate of Source Coordination. November 27, p.4. Emphasis added.

*persons and in accordance with its constitutional mandate" a*s required in terms of section 3 of the NWA *et al.*

13.4. The Decision undermines the national resource water and catchment management strategies and is therefore in breach of the obligations of the DG in terms of sections 7 and 11 of the NWA to give effect to these strategies when exercising any duty or performing any power under the NWA.

13.5. By endangering the reserve, the Decision is in breach of the DG's obligations in terms of section 18 of the NWA to give effect to the reserve when exercising any duty or performing any power under the NWA.

13.6. The Decision contravenes the principles under section 2 of NEMA, imposed on "*the actions of all organs of state that may significantly affect the environment*", in particular but not limited to consideration of the precautionary principle,[12] the polluter pays principle,[13] the promotion of public participation, and principles generally applicable to sustainable development.[14]

13.7. The Decision violates the right to procedurally fair administrative action in terms of section 33 of the Constitution, and section 3 of the Promotion of Just Administrative Act 3 of 2000 ("PAJA"), as well as the provisions of NEMA,[15] in that *inter alia*:

13.7.1. there was inadequate notice of the nature and purpose of the application for the WUL;[16]

13.7.2. there was no reasonable opportunity to make representations in respect of the application of the WUL;[17]

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[12] 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*" (NEMA section 2(4)(a)(vii)).

[13] That "(*t)he costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environmen*t" (NEMA section 2(4)(p)).

[14] In terms of NEMA section 2(4)(f), "(t)*he participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured*."

[15] Further to NEMA section 1(5) "*Any administrative process conducted or decision taken in terms of this Act must be conducted or taken in accordance with the Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000), unless otherwise provided for in this Act."*

[16] PAJA section 3(2)(b)(i).

[17] PAJA section 3(2)(b)(ii).

13.7.3. the Decision is irrational;[18]

13.7.4. the Decision is as a result of an account for irrelevant considerations and a failure to account for relevant considerations;[19] and/or

13.7.5. the Decision was taken arbitrarily or capriciously.[20]

II. BACKGROUND TO AND STATUS OF APPEAL

14. Section 33(2) of the Constitution requires that written reasons be provided to "(*e)veryone whose rights have been adversely affected by administrative action*."

15. Section 42 of the NWA provides that:

> "*After a responsible authority has reached a decision on a licence application, it must promptly*
> *(a) notify the applicant and any person who has objected to the application; and*
> *(b) at the request of any person contemplated in paragraph (a), give written reasons for its decision*."

16. PAJA provides that a person materially and adversely affected by administrative action may request written reasons within 90 days of when that person became (or reasonably ought to have become) aware of the action.[21]

17. Further to section 148(3) of the NWA, as supported by rule 4(1) of the Water Tribunal Rules, an appeal is to be submitted within 30 days of publication of the relevant decision in the Government Gazette, notice of the decision to the appellant or the provision of reasons in respect of the decision (whichever occurs last).

18. The provision of reasons, as set out above, entails the explanation or justification of the decision made and enables those affected by a decision to determine the rationality and accountability of the decision-maker.[22]

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[18] PAJA section 6(2)(f)(ii).
[19] PAJA section 6(2)(e)(iii).
[20] PAJA section 6(2)(e)(vi).
[21] PAJA section 5.
[22] Kiva v Minister of Correctional Services (2007) 28 ILJ 597 (E); Wessels v Minister of Justice and Constitutional Development 2010 (1) SA 128 (GNP) at 141I-J.

19. As detailed below, notwithstanding that the Appeal was not yet due because the RoR provided by the DWS did not comprise the complete reasons for the Decision, to prevent any further delays and to expedite the proceedings to the extent possible, the Appellant commenced the Appeal on 8 August 2018 which was within 30 days of what purported to be clarification from the DWS in respect of omitted page numbers from the RoR: the RoR was provided to the Appellant in a piecemeal fashion on 19 June and 3 and 4 July 2018 and with the last page confirmed by the DWS as blank on 9 July 2018.[23]

20. Schedule 6(5)(3) of the NWA requires that the decision-maker of the decision subject to appeal "*must within a reasonable time (a) send to the Tribunal all documents relating to the matter, together with the reasons for its decision; and (b) allow the appellant or applicant and every party opposing the appeal or application to make copies of the documents and reasons*" (emphasis added).

21. Rule 3(2) of the Water Tribunal Rules provides for amplification of the grounds of appeal "*at any time prior to or during the course of the appeal*".

22. The purpose of providing the relevant documents under schedule 6(5)(3) (the "Record") is to enable: (1) the Appellant and the Tribunal to properly assess the lawfulness of the decision-making process; and (2) the Appellant to properly interrogate the Decision and, if necessary, supplement the grounds of the Appeal.[24]

23. The NWA's Schedule 6(5)(3) provides only for the submission of the Record to the Tribunal and the subsequent replication of thereof by the Appellant. In these circumstances the Tribunal plays a similar role to the registrar in terms of Rule 53(1) and (3) of the Uniform Rules of Court). This is so as to alleviate such issues as objections to production and disagreement as to what in fact comprises the Record,[25] and ensures that all parties are able to assess the Decision on the basis of the same information.

24. Accordingly, whilst the obtaining of information from a third party (such as the DWS) is possible under legislation such as Promotion of Access to Information Act 2 of 2000 ("PAIA"), this information as such is not considered as the Record in terms of the NWA.

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[23] See correspondence in this regard included at Annexure C hereto.
[24] City of Cape Town v South African National Roads Authority Limited and others [2015] JOL 33079 (SCA) at [36]-[37]
[25] Stevens v Swart NO 2014 (2) SA 150 (GSJ) at 155I-J.

25. Further to the DWS's failure to make the Record available to the Tribunal, and in turn, the Appellant:

    25.1. The Appellant is entitled to supplement the Appeal after the DWS has provided the confirmed set of documents on which it relied in making the Decision.[26]

    25.2. DWS's right to rely on documentation in substantiation of its Decision is undermined, as the DWS would have difficulty in relying on any such documents in argument that it has not made available to the Tribunal as the Record.

26. The submission of the Appeal and the current supplementation thereof do not absolve the First Respondent from providing the full reasons for and record of documents in respect of the Decision, and thereby allowing a comprehensive appeal in respect thereof.

27. The Appellant repeats its request that all outstanding documentation be provided and reserves its rights to supplement its appeal on receipt of the full reasons and documentation in respect of the Decision.

28. In the usual course, and as provided for by section 148(2)(b) of the NWA, a WUL is suspended pending the finalisation of an appeal against the grant thereof.

29. The rationale for such an automatic suspension provision is similar to that of an interim interdict. Its effect is to 'freeze' the position until the appeal authority decides where the right lies. It is aimed at ensuring, as far as it is reasonably possible, that the party who is ultimately successful will receive adequate and effective relief and, correlatively, that permitting the exercise of the right subject to appeal does not cause undue prejudice and/or irreparable harm prior to the resolution of the appeal process.[27]

30. ACWA's application for the upliftment of the suspension of the WUL ("ACWA's Upliftment Application"), and the Appellant's opposition thereto, are the subject of separate proceedings that do not form part of this appeal process. This notwithstanding, ACWA's Upliftment Application highlights the need for the provision of a complete record of

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[26] Further to rule 3(2) of the Water Tribunal Rules, "(t)*he grounds of appeal may be amplified at any time prior to or during the course of the appeal.*"

[27] South Cape Corporation (Pty) Ltd v Engineering Management Services (Pty) Ltd 1977 (3) SA 534 (A) at 544H–545A.

documents and reasons for the Decision, so as to allow a proper appeal process in respect thereof. The circumstances surrounding the DWS's failure to provide full reasons for the Decision and the submission of the Appeal evidence the many efforts made by the Appellant to acquire such documents and reasons in order to expedite the appeal process.

A. Non-Compliance with Section 148(3) of the NWA: Incomplete Reasons

31. The Appellant requested copies of the WUL applications and annexures, all documentation considered in the Decision, and the DG's reasons for decision on 1 March 2018, as soon as it learned of the WUL issuance. The DWS responded to the Appellant by providing the RoR in a piecemeal and incomplete manner:

31.1. Only one page (out of 45 pages) was provided on 21 June 2018, with further pages on 2 and 3 July 2018.

31.2. On 9 July 2018, the DWS provided clarification relating to the final pages 43 and 45, alleging that the pagination of the RoR omits page number 44.

31.3. The RoR incorporates various documents by reference which form part of the reasons to issue the WUL but were not attached to or included with the RoR. These include:

31.3.1 recommendations by specialist sections of DWS pertaining to groundwater, resource directed measures, civil designs, instream water use (additional water uses), geohydrology *et al* dated November 2016 to October 2017 (see page 3 and 32-35 of the RoR);

31.3.2 presentations to the Water Use Authorisation Assessment Advisory Committee dated 2 August 2017-25 October 2017 ostensibly entailing requests for further clarity and re-assessments of the application (page 3 and 32-35 of the RoR);

31.3.3 directives issued by DWS to ACWA (table 8, pages 29 - 31);

31.3.4 ACWA's response to issues and directives raised in relation to the Project, and in particular the updated master layout plan, risk assessment matrix, erosion drawing and protection of stormwater discharge, and other documents mentioned in paragraphs 3.1.2 and 3.2.4 of the ROR; as "*Aspects taken into consideration*" by the DWS (paragraph 3.1.2, table 8);

31.3.5 reports and information ostensibly assessed by the DWS with respect to the technical information for the Project comprising the IWWMP dated 2 November 2017, Geohydrological Evaluation Report dated August 2011, Stormwater Management Plan for Ash Yard dated September 2011, and Civil designs and civil design report dated August 2015 (page 5);

31.3.6 the letter of 9 October 2017 ostensibly confirming the sufficiency of water from the eMalahleni Water Treatment Plant and the lack of need for an alternate water supply for the Project (pages 9 to 11); and

31.3.7 the response of the DWS to the objections of the CER and the Appellant as "*Aspects taken into consideration*" by the DWS (paragraph 3.3.2, pages 37 and 38).

32. The list of "*reasons for recommendations and or decision in terms of section 42 of the NWA*" at section 4 of the RoR specifically incorporate the above documents and/or information (the "Omitted Documents") in concluding:

"*4.1 All administrative requirements were met (see section 3.1 of this document).*

4.2 The technical reports met the requirements and recommended for approval by the Department's specialists

4.3 Public participation: There were objections to the activities and referred to the Department."

33. Because the DWS did not supply the Omitted Documents as part of the RoR, the 'reasons' provided in respect of the Decision provided incomplete explanation or justification for the award of the WUL.

34. The Appellant has been requesting the Omitted Documents since 1 March 2018. Copies of the correspondence detailing the Appellant's attempts to obtain *inter alia*, confirmation of the issue of the WUL and the full reasons therefor from the DWS, are attached marked **Annexure C**.

35. On 10 January 2019, the DWS wrote to the Tribunal, in copy to the Appellant and ACWA, purportedly confirming those documents relied upon in reaching the Decision (the "Relevant Documents" as referred to in the "DWS 10 January Letter" that is attached as **Annexure D**). On the basis that the Relevant Documents are intended to substitute the reference to the Omitted Documents in the RoR (despite the lack of direct correlation between the two) reasons for the Decision remain incomplete because:

35.1 the DWS has not yet submitted a complete set of annexures and volumes to the June 2017 IWULA to the Water Tribunal;[28]

35.2 no annexures were appended to the DWS 10 January Letter, and as such, the Appellant has not been provided with annexure 1 - which presumably includes letters No 7, 8, 9 of 17 January 2017, referred to elsewhere in this letter;

35.3 the DWS has not yet submitted to the Tribunal documents referred to as annexure 2 to the DWS 10 January Letter;[29] and

35.4 the Appellant still has not been provided with all the documents referred to in the ROR;

36 The Water Tribunal recommended on 12 December 2018 and 8 February 2019 telephonically that the Appellant pend the filing of further papers until such time as all documents which were considered by the DWS had been submitted. The `12 December communication is reflected in CER's correspondence of 13 December 2018, which is attached as Annexure C.

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[28] The DWS' 10 January Letter requests that "*Legal Services to confirm if "Integrated Water Use Licence Application (IWULA) and Integrated Water and Waste Management Plan (IWWMP)" volumes 1 to 6 were submitted to the Tribunal as Centre of Environmental Rights has mentioned in the letter dated 25 September 2018 that partial June 2017 application was made available.*"

[29] Purportedly DWS' letter of 17 January 2017 to ACWA (raising issues in response to ACWA's initial application for a water use licence), and ACWA's response thereto of February 2017 (submitting the documents "Integrated Water Use Licence Application (IWULA) and Integrated Water and Waste Management Plan (IWWMP)", volume 1 to 3, and engineering designs) respectively.

36. This notwithstanding, the Appellant has proceeded to supplement the Appeal on the basis of the information provided thus far (and with the reservation of its rights to do so at a later stage upon the provision of the outstanding information), in order to curtail further delays and to expedite the proceedings to the extent possible

B. Non-compliance with Schedule 6(5) of the NWA: Failure to Provide all Relevant Documents

37. At the very least, the omission of the Omitted Documents and incomplete provision of the Relevant Documents proves the inadequate nature of what has been provided to the Appellant as the full Record considered when taking the Decision.

38. The need for the provision of the Record, and the confirmation that such documents do indeed comprise the Record, is exacerbated because of the seemingly complex multitude of applications submitted in respect of the authorisations for the Project.

36.1 On 26 March 2013, Anglo submitted a WUL application in respect of the NWA's section 21 (b), (g) and (h) activities in respect of 450MW plant.[30]

36.2 On 12 September 2015, the application was amended to note the change of applicant from Anglo to ACWA and to increase the capacity from 450MW to 600MW to reflect the 2015 EA amendment. The application was subsequently withdrawn.[31]

36.3 On 3 November 2016, ACWA submitted a fresh integrated water use licence application and integrated waste water management plan dated 2 November 2016 (the "November 2016 IWULA"), this time for a 306MW plant. A separate WUL application in respect of General Authorisation for the 400kV substation and power line was also apparently submitted on the same date.[32] The application for a 400kv substation was subsequently deemed to be withdrawn, as ACWA was directed to incorporate it in the full WUL application, given that the impacts of the plant and connected operations are required to be assessed in a holistic manner.[33]

36.4 It appears that additional integrated water use licence and integrated waste water management plan applications were submitted on 9 February 2017, and 8 June

[30] June 2017 IWULA Volume 4, Appendix A & B, p. 3- 7.
[31] June 2017 IWULA Volume 4.
[32] June 2017 IWULA Volume 4, and November 2016 IWULA, p. 1.
[33] ROR, paragraph XI, p 34,

2017, each with reports and annexures distinct from what was submitted in the preceding environmental impact assessment ("EIA") process and as part of the November 2016 IWULA (the "February 2017 IWULA" and June 2017 IWULA respectively). Significantly only two Specialist Studies were appended to the November 2016 IWULA, whilst the June 2017 IWULA appended approximately 11 Specialist Studies and new design reports. These further documents include, but are not limited to the May 2017 Wetland assessment report, the 2015 Wetland Delineation Report, and the Surface Water Impact Assessment Report, new designs, maps, and water uses.

39. DWS's recent explanation of these numerous applications, as set out in the DWS 10 January Letter, is that ACWA submitted the February 2017 and June 2017 IWULAs in response to the queries the DWS raised in respect of the January 2016 IWULA.[34] This is notwithstanding that the Appellant, as an I&AP and as required by the public participation process (see further below), was not informed of these further submissions.

40. Despite the DWS 10 January Letter, the DWS previously suggested (in its email correspondence of 9 July 2018 as further included at **Annexure C**) that some of the information requested by the Appellant in order to complete the Record and/or as reasons for the Decision is indeed relevant but has been deemed "confidential". Not only has the DWS provided no explanation of the alleged confidentiality but such an allegation is discordant with the DWS 10 January Letter, and potentially confuses the DWS' obligation to provide adequate explanation for the Decision.[35]

III. THE LEGAL FRAMEWORK APPLICABLE TO THE WUL

A. The Constitution

41. The environmental right enshrined in section 24 of the Bill of Rights of the Constitution provides as follows:

> "*Everyone has the right –*
> *(a) to an environment that is not harmful to their health or well-being; and*
> *(b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –*
> *(i) prevent pollution and ecological degradation;*

[34] DWS 10 January Letter pp. 1 and 2.
[35] Kiva v Minister of Correctional Services at 41.

(ii) promote conservation; and

(iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

42. Accordingly, section 24(b) imposes a positive duty on the state to secure environmental protection through "reasonable legislative and other measures".[36]

43. Related rights in the Bill of Rights include the rights to equality (section 9), dignity (section 10) and to the enforcement of rights by *"(a) anyone acting in their own interest; (b) anyone acting on behalf of another person who cannot act in their own name; (c) anyone acting as a member of, or in the interest of, a group or class of persons; (d) anyone acting in the public interest; and (e) an association acting in the interest of its members*" (section 38).

B. The National Water Act

44. The NWA read with the Water Tribunal Rules and the Water Use Licence Application and Appeals Regulations (the "Regulations")[37] directly governs the application for, and the grant and appeal of a water use licence.

45. The primary purpose of the NWA is to ensure the protection and sustainable use of and equitable access to water resources.[38]

46. The preamble to the NWA recognises that water is a "*natural resource that belongs to all people, and that discriminatory laws and practices of the past have prevented equal access to water and the use of water resources*"; that it is a "*scarce and unevenly distributed national resource*"; "*the ultimate aim of water resource management is to achieve the sustainable use of water for the benefit of all users*"; and "*the protection of the quality of water resources is necessary to ensure sustainability of the nation's water resources in the interests of all water users*".

47. Section 2 of the NWA stipulates that the purpose of this legislation is "*to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled*" in ways which take into account factors that include:

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[36] Glazewski "*Environmental Law in South Africa*", October 2017 update, 5.2.1.

[37] Published under the NWA in GNR.267 of 24 March 2017.

[38] Section 2 of the NWA and preamble.

47.1. meeting the basic human needs of present and future generations;

47.2. redressing the results of past racial and gender discrimination;

47.3. promoting the efficient, sustainable and beneficial use of water in the public interest;

47.4. protecting aquatic and associated ecosystems and their biological diversity; and

47.5. preventing pollution and degradation of water resources.

48. In awarding the WUL, the DG acts under the delegated powers of the Minister:[39]

48.1. As public trustee of the nation's water resources,[40] the Minister is charged with giving effect to the NWA.

48.2. Section 3(1) of the NWA places an obligation on the Minister to "*ensure that water is protected… managed and controlled in a sustainable and equitable manner, for the benefit of all persons and in accordance with [the National Government's] constitutional mandate*" [41].

48.3. Section 3(2) provides that the Minister is "*ultimately responsible to ensure that water is allocated equitably and used beneficially in the public interest, while promoting environmental values*".

49. The WUL awarded in the Decision authorises ACWA's undertaking of the following water use activities under section 21 read with section 22 of the NWA:

> "21 *(c) impeding or diverting the flow of water in a watercourse;…*
> *(e) engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1);…*
> *(g) disposing of waste in a manner which may detrimentally impact on a water resource;…*
> *(h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;*
> *(i) altering the bed, banks, course or characteristic of a watercourse*"

[39] WUL page 1.
[40] Section 3 of the NWA
[41] Including the right to have access to sufficient water in section 27 of the Constitution of the Republic of South Africa, 1996

50. Section 27(1) of the NWA lists the following factors that must be taken into account, together with all relevant factors, by the responsible authority when issuing a general authorisation or WUL in respect of water use activities such as those listed above (the "Compulsory Considerations"):

> *"(a) existing lawful water uses;*
> *(b) the need to redress the results of past racial and gender discrimination;*
> *(c) efficient and beneficial use of water in the public interest;*
> *(d) the socio-economic impact –*
> *(i) of the water use or uses if authorised; or*
> *(ii) of the failure to authorise the water use or uses;*
> *(e) any catchment management strategy applicable to the relevant water resource;*
> *(f) the likely effect of the water use to be authorised on the water resource and on other water users;*
> *(g) the class and the resource quality objectives of the water resource;*
> *(h) investments already made and to be made by the water user in respect of the water use in question;*
> *(i) the strategic importance of the water use to be authorised;*
> *(j) the quality of water in the water resource which may be required for the Reserve and for meeting international obligations; and*
> *(k) the probable duration of any undertaking for which a water use is to be authorised.*"

51. Account for the Compulsory Considerations is undertaken in the specific context of the NWA as the empowering legislation.[42]

52. The strategies to be considered when granting a water use licence, as incorporated into the Compulsory Considerations, entail:

52.1. The National Water Resource Strategy ("NWRS") 2[43] as established by the Minister in terms of Chapter 2 Part 1 of the NWA in order to protect, use, develop, conserve, manage and control South Africa's water resources. Section 7 of the NWA requires that "(t)*he Minister, the Director General, an organ of state and a water management institution*" give effect to the NWRS when exercising any power or performing any duty in terms of the NWA.

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[42] Fuel Retailers Association of Southern Africa v Director-General Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and Others 2007 (10) BCLR 1059 (CC)
[43] 2nd edition of June 2013.

52.2. Any catchment management strategy established in terms of Chapter 2 part 2 of the NWA, which would include any guidelines established in terms of section 10.[44]

52.3. The class and resource quality objectives ("RQOs") of the water resource.[45] The Classes and RQOs for the Olifants River Catchment (ORC) were promulgated on 22 April 2016.[46] The Upper Olifants River catchment (Upper "ORC") is classified as a Class III water resource i.e. a heavily used water resource with the overall condition of the resource significantly altered from its pre-development condition.[47] The DWS has different RQOs for different sections of the Olifants River. For example, the Olifants River at the confluence with the Steenkoolspruit, Dwars-indieWegspruit, Spooskpruit, and Boschmansfontein are to be maintained at an Ecological Category Class "C" level, meaning the river quality should reflect a "*Loss and change of natural habitat and biota [that] have occurred, but the basic ecosystem functions are still predominantly unchanged.*"[48] Other parts of the Olifants River have higher RQO class "B," which means that river quality should reflect a "*small change in natural habitats and biota may have taken place but the ecosystem functions are essentially unchanged*."[49]

52.4. The reserve in relation to that water resource: The RoR indicates a negative reserve amount in relation to the ORC in the coming years, hence abstraction was not recommended for the Project.[50]

53. The NWA imposes a general responsibility for water resources that extends beyond the responsible authority.

53.1. Section 19 of the NWA provides for a general duty of care for water resources:

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[44] Section 11 of the NWA requires that the Minister and the catchment management agency give effect to any catchment management strategy when exercising a power of duty under the NWA.
[45] Sections 12, 13 and 15 of the NWA.
[46] DWS, GN R466 in GG39943 of 22 April 2016, National Water Act, 1998 (Act NO. 36 of 1998) Classes and Resource Quality Objectives of Water Resources for The Olifants Catchment.
[47] June 2017 IWULA, p. 105.
[48] Department of Water Affairs and Forestry, "Reference Ecoclassifciation Manual for Ecostatus Determination (Version 2) Module A: EcoClassification and EcoStatus Determination," p. A2-11, http://www.dwa.gov.za/iwqs/rhp/eco/EcoStatus/ModuleA_EcoStatus/ModuleA_EcoClassification.pdf.
[49] *Ibid*.
[50] RoR p 18.

"*an owner of land, a person in control of land or a person who occupies or used the land on which – (a) any activity or process is or was performed or undertaken, or (b) any other situation exists, which causes, has caused or is likely to cause pollution of a water resource, must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring*."

53.2. The applicant for the licence may be required to give security in respect of any obligation or potential obligation arising from a licence to be issued under the NWA.[51]

54. The public participation requirements for a water use application are set out in terms of s41(4) of NWA, and at regulation 17 of the Water Use Licence Application and Appeals Regulations (the "Regulations")[52]. Section 41(4) states that the responsible authority may at any stage of the process, require the applicant to give notice in newspapers and other media, describing the licence applied for, and stating that objections may be lodged within a minimum period of 60 days. As can be seen from the foregoing paragraphs that DWS did give direction to conduct public participation to ACWA, and to respond to objections that Appellant raised.

55. Further, Regulation 17 requires that: (1) appropriate notice to interested and affected parties ("*by fixing a written notice board at a visible and accessible place to the public at the boundary or on the fence of (i) the site where the water use activity to which the application relates is or is to be undertaken; or (ii) any alternative site mentioned in the application*"); (2) advertising in a local newspaper or the Government Gazette; and (3) advertising in at least one provincial newspaper or national newspaper (if the water use is not just of local impact and there has been Government Gazette advertisement).

56. The form of the notice or advertisement must:

> *"(a) give adequate details of the application which is subject to public participation; and*
> *(b) state the following*
> *(i) that the application has been submitted to the responsible authority in terms of these Regulations as the case may be;*
> *(ii) the nature and locality of the water uses to which the application refers;*
> *(iii) the water uses;*
> *(iv) where further information on the application or water uses may be obtained;*
> *(v) the manner in which and the person to whom representations in respect of the application can be made;*
> *(vi) a specified date, no more than 60 days after the last publication of a notice, before which*

[51] Section 30 of the NWA read with the Regulations.
[52] Published under the NWA in GNR.267 of 24 March 2017.

written comments or objection may be lodged; and
(vii) an address to which written objections may be lodged."[53]

57. The applicant for a water use licence must open and maintain a register of interested and affected persons and compile a public participation report containing the *"(a) written comments or objections of interested and affected parties; (b) records of meetings; and (c) register of interested and affected parties*".[54]

58. The form of the public participation report is set out at Annexure D (8) to the Regulations.

59. Where a public participation process has already been undertaken as part of an application for environmental authorisation "*and that public participation process contains and covers <u>all issues</u> pertaining to water use activities*" (emphasis added) then the public participation process under the Regulation may be fulfilled by this preceding process "*subject to approval by the responsible authority*".[55]

60. In addition to specific requirements for public participation in the NWA and Regulations, it is trite that public participation must also conform to requirements in terms of NEMA, PAJA, and the Constitution, and this is also confirmed in recent judgments.[56]

61. Appeals in respect of decisions concerning water use authorisations (except for those relating to the authorisation of water uses for the purposes of mining, prospecting, exploration or production)[57] are heard by the Tribunal under chapter 15 of the NWA.[58]

62. An appeal to the Tribunal is that in the wide sense, in light of the following:

    62.1. Rule 7(1) of the "Water Tribunal Rules"[59] provides that such appeals take the form of a "rehearing"; and

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[53] Regulation 17(4) of the Regulations.
[54]Regulation 19(1) of the Regulations.
[55] Regulation 17(2) of the Regulations.
[56] *Werda Handel v DG: DWS and Thedza Mining Resources* 9 February 2017, WT25/03/2015; *Escarpment protection Group v DWS* JDR 2700 (GNP); *West Coast Environmental Protection Association v Minister: Department of Water and Sanitation and others* 16 November 2017, WT01/17/WC..
[57] Regulations 4 and 21 of the Water Use Licence Application and Appeals Regulations (GNR.267 of 24 March 2017), sections 41(5)((a) and 41(6) of the NWA.
[58] Chapter 15 preamble, NWA; Section 148(1)(f) NWA.
[59] Government Notice 926 in Government Gazette 28060, of 23 September 2005

62.2. The Tribunal may receive oral evidence and conduct an inspection *in loco* in order to decide the appeal.[60]

63. Accordingly, the Water Tribunal is able to review the Decision as well as determine its merits because it is not confined to the Record, and may consider new evidence and information not before the DG.[61]

C. The National Environmental Management Act

64. NEMA gives general effect to the constitutional right to an environment that is not harmful to health or wellbeing under section 24 of the Constitution, with the NWA functioning as one of the "Specific Environmental Management Acts"[62] under NEMA.

65. Section 2 of NEMA establishes principles applicable to the actions of all state organs "*that may significantly affect the environment… alongside all other appropriate and relevant considerations*"[63] to serve as guidelines for decisions in terms of any legislation "*concerning the protection of the environment*"[64] and to guide the interpretation, administration and implementation of any law "*concerned with the protection or management of the environment*" (the "Section 2 Principles").[65]

66. Accordingly, when making the Decision, the DG was obligated to consider and apply the Section 2 Principles, including that:

66.1. the relevant factors entailed in the application of sustainable development (the "Sustainable Development Principle") include consideration that "*the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised*";[66]

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[60] Rules 7(2), 12 and 13 of the Water Tribunal Rules.
[61] Tikly v Johannes NO 1963 (2) SA 588 (T)
[62] As defined under NEMA section 1.
[63] NEMA section 2(1)(a).
[64] NEMA section 2(1)(c).
[65] NEMA section 2(1)(e).
[66] NEMA section 2(4)(a)(vi)

66.2. the Sustainable Development Principle includes consideration 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*";[67]

66.3. the Sustainable Development Principle includes consideration that "*negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied*";[68]

66.4. "(r)*esponsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle*";[69]

66.5. "(t)*he participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured*";[70]

66.6. "(d)*ecisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge*";[71]

66.7. "(*d)ecisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law*";[72]

66.8. "(*g)lobal and international responsibilities relating to the environment must be discharged in the national interest*";[73]

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[67] NEMA section 2(4)(a)(vii)
[68] NEMA section 2(4)(a)(viii)
[69] NEMA section 2(4)(e).
[70] NEMA section 2(4)(f).
[71] NEMA section 2(4)(g).
[72] NEMA section 2(4)(k).
[73] NEMA section 2(4)(n).

66.9. "(t)*he environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage*";[74]

66.10. "(*t)he costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment*";[75] and

66.11. "(s)*ensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure*".[76]

67. Section 28 of NEMA places a duty of care on every person who:

> "*causes, has caused or may cause significant pollution or degradation of the environment [to] take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment*."[21]

68. This duty of care extends to all organs of state, including the Minister or her delegated representative.

69. Section 32 of NEMA confers legal standing to enforce environmental laws (including a provision of a Specific Environmental Management Act or of "*any other statutory provision concerned with the protection of the environment or the use of natural resources*") on a person or group of persons:

> *"(a) in that person's or group of person's own interest;*
> *(b) in the interest of, or on behalf of, a person who is, for practical reasons, unable to institute such proceedings;*
> *(c) in the interest of or on behalf of a group or class of persons whose interests are affected; (d) in the public interest; and*
> *(e) in the interest of protecting the environment.*"

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[74] NEMA section 2(4)(o).
[75] NEMA section 2(4)(p).
[76] NEMA section 2(4)(r).

D. International Environmental Obligations

70. Section 233 of the Constitution requires that all legislation be interpreted in a manner that is consistent with international law, whilst section 39(1)(b) of the Constitution requires that the Bill of Rights (including the right to healthy environment under section 24) is interpreted in a manner consistent with international law.

71. The Compulsory Considerations to be taken into account when deciding whether to grant a water use licence, further to section 27(1) (j) of the NWA as set out above, include that the relevant authority must consider the water quality required to meet international obligations.

72. South Africa has specific international law commitments in respect of the curtailment and management of climate change. In particular, South Africa has signed and ratified the United Nations Framework Convention on Climate Change (the "UNFCC") and its Kyoto Protocol.[77]

73. Under the UNFCC, South Africa has a number of binding obligations. Article 3(3) of the UNFCC sets out a "precautionary principle" which requires all state parties to take precautionary measures to anticipate, prevent or minimise causes of climate change. Article 4(1)(f) specifically addresses the need for impact assessments as it imposes the obligation on all states parties to —

> "*[t]ake climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change"* (emphasis added)

74. As a party to the UNFCC, South Africa participated in the 21st Annual Conference of Parties which resulted in the adoption of the Paris Agreement in December 2015.

75. The Paris Agreement is an international climate change agreement that commits parties to, *inter alia*, limit the global average increase in temperature to "*well below 2*°C *above pre-*

[77] United Nations Framework Convention on Climate Change ("UNFCC") https://unfccc.int

industrial levels" and to "*pursue efforts to limit the temperature rise to 1.5* °C *above pre-industrial levels*".[78]

76. In line with these commitments, the Paris Agreement requires each state party to formulate their goals and objectives in a nationally determined contribution ("NDC"), to report on compliance with their NDC, and to revise their NDC every five years to adopt more stringent targets.[79]

77. South Africa's NDC currently states, *inter alia*, that:

    77.1. South Africa is firmly committed to working with others to ensure temperature increases are kept well below 2°C above pre-industrial levels, which could include a further revision of the temperature goal to below 1.5°C in light of emerging science, noting that a global average temperature increase of 2°C translates to an increase of up to 4°C for South Africa by the end of the century;[80]

    77.2. There need to be near zero emissions of carbon dioxide (CO_2) and other long-lived greenhouse gases (GHGs) after 2050 to avoid even greater impacts that are beyond adaptation capability;[81]

    77.3. The timeframes communicated are 2025 to 2030; during this time, South Africa's emissions will be in a range between 398 and 614 Mt (megatons) of carbon dioxide equivalent ("CO2–eq"), as defined in national policy. This is the benchmark against which the efficacy of mitigation actions will be measured;[82]

    77.4. South Africa's GHG emissions will peak between 2020 and 2025, plateau for approximately a decade, and decline in absolute terms thereafter.[83]

78. Currently, South Africa's actions in limiting its GHGs to meet the 2℃ commitment goals under the Paris Agreement are rated "*highly insufficient*" and "*commitments with this rating fall outside the fair share range and are not at all consistent with holding warming to below*

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[78] UNFCC, Paris Agreement ("Paris Agreement") Article 2(a), https://unfccc.int/sites/default/files/paris_agreement_english_.pdf.
[79] Article 4(9), Paris Agreement.
[80] UNFCCC, South Africa's Intended Nationally Determined Contribution ("NDC"), p.1, http://www4.unfccc.int/ndcregistry/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf.
[81] *Ibid*., p. 1.
[82] *Ibid*., p. 6.
[83] *Ibid*., p. 7.

2°C let alone with the Paris Agreement's stronger 1.5°C limit. *If all government targets were in this range, warming would reach between 3°C and 4°C*".[84] According to the 2018 Brown to Green Report: the G20 transition to Green Economy Report ("the Brown to Green Report"), South Africa has the highest emission intensity in the power sector among all G20 countries, due to its lack of real actions to phase out coal.[85] (The relevant extracts of the report are attached as **Annexure E**).

79. This is particularly concerning in light of revelations in the most recent IPCC (International Panel on Climate Change) Report of 8 October 2018, that limiting temperature increase to *2°C* (which South Africa subscribes to as a signatory to the Paris Agreement) is no longer safe; and that we would need to aim for an increase that does not exceed 1.5*°C*. Further, that climate change and not meeting 1.5°C limit scenario will not only impact the climate, but will impact the economic development, food security, water scarcity, health , energy security, poverty eradication efforts, and socio-economic conditions, especially in the developing nations and Sub-Saharan region.[86] The IPCC report states that we have 12 years in which to act against the climate change in order to limit warming to 1.5°C, which requires global efforts to reduce 45 % of emissions by 2030 and to have zero emissions by 2050.[87] This, would require "*rapid and far-reaching transitions in energy"*.[88]

80. The South African government has specifically acknowledged that South Africa is extremely vulnerable to the effects of climate change, particularly as a water-scarce country. The National Climate Change Response White Paper of 2011 (the "White Paper"), the government's vision of building a long term climate resilient society, recognises that:

> "*South Africa is extremely vulnerable and exposed to the impacts of climate change due to our socio-economic and environmental context. Climate variability, including the increased frequency and intensity of extreme weather events, will disproportionately affect the poor. South Africa is already a water-stressed country and we face future drying trends and weather variability with cycles of droughts and sudden excessive rains. We have to urgently strengthen the resilience of our society and economy to such climate change impacts and to develop and*

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[84] https://climateactiontracker.org/countries/south-africa/.
[85] Brown to Green Report, 2018, page 7;
[86] IPCC Special Report on "Global Warming of 1.5 °C" http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf, pg 8-13; https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15_Chapter3_Low_Res.pdf
[87] IPCC Special Report on "Global Warming of 1.5 °C" http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf, pg 14
[88] IPCC Special Report on "Global Warming of 1.5 °C" http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf, pg 14

implement policies, measures, mechanisms and infrastructure that protect the most vulnerable."[89]

81. In particular, the White Paper recognises that water scarcity in South Africa will be aggravated by climate change:

> "*South Africa is a water scarce country with a highly variable climate and has one of the lowest run-offs in the world – a situation that is likely to be significantly exacerbated by the effects of climate change. Uniquely, South Africa shares four of its major river systems with six neighbouring countries. These four shared catchments amount to approximately 60% of South Africa's surface area and approximately 40% of the average total river flow….Based on current projections South Africa will exceed the limits of economically viable land-based water resources by 2050. The adequate supply of water for many areas can be sustained only if immediate actions are taken to stave off imminent shortages. The water sector must balance the allocation of limited water resources amongst major users (agriculture, domestic urban use and industry), whilst addressing the need to ensure fair access to water for all South Africa's people as well as a sufficient ecological allocation to maintain the integrity of ecosystems and thereby the services they provide.*"[90]

82. The NWRS2 recognises that:

> "*scenarios currently indicate that the net effect of climate change for South Africa will be a reduction of water availability, although impacts will be unevenly distributed, with the eastern coastal areas of the country becoming wetter. In the interior and the western parts of the country, climate change is likely to lead to more intense and prolonged periods of drought. In general, climate change will probably lead to weather events that are more intense and variable, such as sudden high volumes of rainfall, leading to flooding*."[91]

83. The NWRS2 also recognises that notwithstanding the legislative measures by the NWA to protect water through resource-directed measures and the classification of water resources, there has been:

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[89] White Paper, page 8

[90] White Paper, page 17. This threat of water scarcity is also acknowledged in a report published in May 2017. This report, titled "*The State of Climate Change Science and Technology in South Africa*", was undertaken by the Academy of Science of South Africa (the ASSAf Report) on behalf of the Department of Science and Technology and was endorsed by Cabinet. It highlights the key climate change challenges and impacts in South Africa over the next 30 years and notes that "*[t]he strongest impacts of climate change in South Africa in the first half of the 21st century will be on the security of freshwater supplies to industry, towns and agriculture; on crop and livestock agriculture, due to less favourable growing conditions; on human health, due to heat stress and disease spread, particularly in urban areas; and on biodiversity, due to shifting habitat suitability*" (ASSAf Report, page 15). [90]

[91] NWRS2 2013, pg 11.

> "*a demonstrable drop in the aquatic ecosystem health across the country and increased stress on water resources, leaving little buffering capacity for any coming changes and increasing water demand..[*and that*] our water resources are facing ever increasing pressures from climate change… a well managed water ecosystems can also buffer human settlements and built infrastructure against extreme events that are likely with climate change, playing a crucial and cost-effective role in disaster-risk reduction*."[92]

84. South Africa is already experiencing immense financial and economic burdens as a result of droughts and temperature increases. By way of example, on 4 December 2018, in the Parliamentary Questions (Question 3046 / NW3410E) to the Minister of Agriculture, Forestry and Fisheries, the answer revealed that government had an application from the Western Cape Province for which a total of R78 million was allocated for drought relief and response to the fires , and during the 2018/19 financial year, a funding allocation of R170 Million was approved by the National Treasury for the Western Cape Province to procure animal feed for farmers affected by drought in all affected Districts; including the Central Karoo. This affected 2200 farmers. A copy of this parliamentary Question and Answer is attached, marked as **Annexure F**.

85. As confirmed in Earthlife Africa Johannesburg v Minster of Environmental Affairs (the "Thabametsi Judgment"), handed down on 8 March 2017,[93] the climate change impacts of a proposed coal-fired power station must be thoroughly assessed and considered as a "*relevant factor*" in terms of NEMA section 24O(1)(b), before a decision can be made as to whether to grant environmental authorisation under NEMA. Because no such detailed climate change impact assessment has been submitted in respect of the Khanyisa Project, whether as part of the EA or WUL (or any other) process, the full climate impacts as a result of the proposed Khanyisa Project have not been quantified.

86. As discussed in paragraphs 104 and 288.7 below, whilst the DWS's findings on the climate change impacts on the ORC have not been made available, a report by Brad Udall (the "Udall Report"), recommended that government prepare for significant drying of ORC due to climate change, and refrain from actions which would worsen this, such as building of

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[92] NWRS2 2013, pg 37.

[93] Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others (65662/16) [2017] ZAGPPHC 58 (8 March 2017); [2017] 2 All SA 519 (GP).

long-lasting and polluting coal-fired power stations.[94] A copy of the Udall Report is annexed as **Annexure I**.

87. The Khanyisa Project would be adding to South Africa's GHG emissions long after 2030. With a life-time of between 30 and 50 years, assuming Khanyisa becomes operational in 2021, it would be emitting significant GHG emissions until 2051 or 2071. Significantly, ACWA has failed to address the climate change impacts of the proposed Khanyisa Project sufficiently, either in the June 2017 IWULA or at all.

E. The Promotion of Administrative Justice Act

88. PAJA effectively codifies the right to administrative action that is lawful, reasonable and procedurally fair in terms of section 33 of the Constitution.[95]

89. Section 3 of PAJA requires that, in order to give effect to procedurally fair administrative action,[96] and unless failure to do so is reasonable and justifiable in the circumstances. In this regard, an administrator must give any person whose rights or legitimate expectation have been materially and adversely affected:

"(i) adequate notice of the nature and purpose of the proposed administrative action; (ii) a reasonable opportunity to make representations; (iii) a clear statement of the administrative action; (iv) adequate notice of any right of review or internal appeal, where applicable; and (v) adequate notice of the right to request reasons in terms of section 5."

90. In order to give effect to such procedurally fair administrative action in matters adversely affecting the rights of the public, the administrator must:

90.1. hold a public inquiry; and/or

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[94] Udall, B. 2018 *21st Century Climate Change Impacts on the Olifants River*, p.30-31

[95] Section 33 of the Constitution guarantees everyone a right to just administrative action that is lawful, reasonable and procedurally fair, and those who have been negatively affected by an administrative action right to be given written reasons.

[96] 'Administrative Action' is defined, subject to specific exclusions, as "*any decision taken, or any failure to take a decision, by(a) an organ of state, when(i) exercising a power in terms of the Constitution or a provincial constitution; or (ii) exercising a public power or performing a public function in terms of any legislation; or (b) a natural or juristic person, other than an organ of state, when exercising a public power or performing a public function in terms of an empowering provision, which adversely affects the rights of any person and which has a direct, external legal effect*".

90.2. follow a notice and comment procedure; or

90.3. follow a fair but different procedure in terms of an empowering provision; or

90.4. follow another appropriate procedure in light of section 3.[97]

91. As set out below, it is the Appellant's case that the procedurally fair administrative action generally protected by PAJA and, specifically, in terms of the requirements of the NWA, was not effected prior to the award of the WUL.

IV. MAIN FEATURES OF THE KHANYISA PROJECT

A. Location

92. As set out above, the Amended EA for the Khanyisa Project provides that it is to be a 600MW coal-fired power station located near eMalahleni, Mpumalanga, which would remain operational for at least 30-50 years. Even though ACWA's WULA and proposed impact were only assessed in respect of 306MW plant, the effects reflected are significant - especially to the ORC and the Witbank dam.

93. Whilst the figures are not consistent in different applications and reports, it appears that the proposed power station would be on a 21 hectare (0.21km^2) site and its toxic ash dump (which would rise to 40 metres) would be located on top of an unstable 140- 150 hectare (1.4- 1.5 km^2) rehabilitated open cast mine, and next to the toxic ash dump will be a coal washing plant.[98]

94. The Khanyisa Project is to be located in the degraded airshed and declared air pollution priority area, the Highveld Priority Area ("HPA"), and along the polluted upper ORC, the main stem of the ORC.[99] Whilst not clear in the June 2017 IWULA, according to the 2015 FEIR and the relevant appendices, the Khanyisa Project is located in the eMalahleni Local Municipality, with eMalahleni itself located 10km to the north, and Ogies and Phola situated approximately 17.5km to the southwest. Some of the residential areas around eMalahleni

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[97] PAJA section 4.

[98] June 2017 IWULA, section 2.2.; 2012 FEIR, p. xii. *See*, *also*, June 2017 IWULA and IWWMP, p. 61, 77; David M Chambers, Ph.D, P. Geop, , "Professional Opinion on the site selection for the Ash Disposal Site for the proposed Khanyisa Power Station Project, Emalahleni, Mpumalanga, South Africa," 21 March 2018 ("Chambers Report"), p. 2, attached as annexure G; Evan Hansen, "Water Quality Impacts from the Proposed Khanyisa Power Station," 5 August 2018, ("Hansen Report"), sections 4.1, attached as annexure G.

[99] 2012 FEIR, p. xvii.

include Duvha Park, Tasbeth Park, Dixon AH, Highveld Single Quarters, Reyno Ridge and Clewer. There are numerous rural area/farms around these towns. The site is within 4km of the nearest residential area, 2km from Landau Primary School, and 10 km south of eMalahleni.[100]

95. Aside from the proposed Khanyisa Project, the HPA is already proliferated with 12 Eskom power stations (including Kendal (approximately 42 km to the south west), Matla (approximately 50 km to the south), Duvha (11 km to the east), and Kriel (50 km to the south)), Sasol's Synfuels operation, and many hundreds of mines; amongst multiple other polluting facilities. Despite the significantly-polluted air, new air emission licences and postponement applications to delay compliance with the MES continue to be sought and granted in the HPA. Some of the pollutants emitted by coal-fired power stations include: particulate matter (PM); sulphur dioxide (SO_2); oxides of nitrogen (NOx); mercury (Hg); and carbon dioxide (CO_2); which are all harmful to human health, and are the cause of or major contributor to several types of illnesses, some of which can be fatal. [101]

96. The Olifants River originates at Trichardt, east of Johannesburg, and initially flows northward; then curving east through the Kruger National Park and into Mozambique, where it joins the Limpopo River before discharging into the Indian Ocean.[102] The ORC provides water for ten million people and is vital to the economy and environment of South Africa and Mozambique. The Upper ORC is located primarily within the Gauteng and Mpumalanga Provinces, covering an area of 11 461 km^2, and includes the towns of Bronkhorstspruit, Delmas, Douglas, Kriel, Kinross, Ogies, Evander, Secunda, Bethal, eMalahleni, and Steve Tshwete. The Upper ORC is the most urbanised of the four sub-catchments, with a population of approximately 940 000 people, with the majority of the urban population located in eMalahleni and Steve Tshwete.[103]

97. Therefore the DWS states that some of the scenarios having the most positive impact on the Olifants Water Management Area ("WMA)" are to reduce load from: seepages from the mine, industrial and power station waste storage facilities and mining operations in the

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[100] 2015 FEIR, Annexure E:,Air Quality Impact Assessment, p. 26.
[101] https://cer.org.za/news/eskoms-latest-bid-to-continue-deadly-pollution-strongly-contested
[102] 2012 FEIR, Appendix L, Surface Water Assessment, p. 9; DWS, 2016 Development of an Integrated Water Quality Management Plan (IWQMP) for the Olifants River System: Upper Olifants Sub-catchment Plan. Study Report No. 7, p. 1.
[103] DWS, 2016 Development of an Integrated Water Quality Management Plan (IWQMP) for the Olifants River System: Upper Olifants Sub-catchment Plan. Study Report No. 7, pp. 1 & 11.

Upper Olifants sub-catchment; reducing excess mine water on the mining operations threatening to decant or starting to flood the coal reserves in the Upper Olifants sub-catchment; and reducing load from irrigation return flows in the Upper and Middle Olifants, among others.[104]

98. The ORC is one of the most polluted catchments in South Africa and is facing a water quality crisis both from a water quantity and quality perspective.[105] The upper ORC is heavily-dominated by coal mining, with an estimated 680 former and existing coal mines, and is also the location of several power plants and commercial and smallholder agricultural farms.[106]

99. The Upper ORC has particularly bad water quality, including high levels of sulphates, which is indicative of acid mine drainage ("AMD").[107] AMD forms when pyrite (iron sulphide), which is often found in rocks surrounding coal deposits, is exposed to air and water during the mining process. The pyrite reacts and forms acidic runoff with high levels of sulphates. Acidic water can mobilise metals (such as copper, lead, and mercury) from the sediment and convert sulphate to hydrogen sulphide, which is particularly toxic to aquatic life.[108] AMD can mobilise metals in the sediment during low rainfall or drought periods when sediment is exposed, and in high flow periods when sediment is suspended.[109]

100. According to the June 2017 IWULA:

> "*It is estimated that some 50 ML/day of polluted mine water (AMD) enters the Upper Olifants River catchment, resulting in local acidification and regional siltation of surface water resources. As a result, mining effluents account for a sulphate load in the order to 12,000 tonnes/annum in Mpumalanga. The DWS estimates that the volume of mine effluents seeping from defunct coal mines in the upper catchment could be as high as*

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[104] DWS, 2016 IWQMP for the Olifants River System, pp. 1 & 11.

[105] 2017 IWULA & IMMP, section 4.6.2, p. 49; see, also, 2012 FEIR, Surface Water Quality Impact Assessment, p. 14; J. Lebepe et al., Metal contamination and human health risk associated with the consumption of Labeo rosae from the Olifants River system, South Africa, African Journal of Aquatic Science 2016, 41(2): (Lebepe 2016 Study), p. 161, https://cer.org.za/wp-content/uploads/2017/09/Annexure-H-Lebepe-Marr-and-Luus-Powell-Metal-contamination-and-human-health-risk-associated-with-the-consumption-of-Labeo-rosae-from-the-Olifants-River-System.pdf; CSIR, Risk Assessment of Pollution in Surface Waters of the Upper Olifants River System: Implications for Aquatic Ecosystem Health and the Health of Human Users of the Water.

[106] G.K. Nkhonjera, Understanding the Impacts of climate change on the dwindling water resources of South Africa, focusing mainly on Olifants River basin: A review, Environmental Science & Policy 71, 20 (May 2017), http://www.sciencedirect.com/science/article/pii/S1462901116306608?via%3Dihub.

[107] The Association for Water and Rural Development ("AWARD"), "The role of the Wilge River in maintaining ecosystem integrity and associated benefits in the upper Olifants Catchment," 31, Aug. 2017 ("AWARD Report"), section 2.3, https://cer.org.za/wp-content/uploads/2017/09/Annexure-G-Role-of-the-Wilge-AWARD-Sep-2017.pdf.

[108] *Ibid.,* section 2.1.

[109] *Ibid.,* section 2.3.1.

62 million m3/annum (Oelofse, et al., 2009). In order to reduce the impact of polluted discharges on receiving water bodies, a controlled discharged scheme (CDS) was introduced in the Upper Olifants River catchment in 1997. The CDS allowed mines to discharge polluted water to the rivers during periods of high rainfall, where high runoff and water levels increases the dilution capacity in the rivers (Coleman et al., 2003).

Mine water in the catchment of the Witbank Dam and Middelburg Dam is rich in calcium, magnesium and sulphate, and is acidic. This is of major concern, as dissolved metals become insoluble at pH levels below 5.5, causing the water to become toxic to plant and fish life and corrosive to pipelines and equipment. In addition to the impact of existing mining activities on the water resources, the Olifants River catchment is also exposed to high levels of suspended solids from mining, industrial, and power generation activities within the catchment."'[110]

101. Many people and towns are reliant on the ORC; with rural communities living in the area of the ORC relying on the river for subsistence fishing, drinking, washing, and domestic small-scale irrigation. The Upper ORC feeds into the Witbank Dam, which eMalahleni residents rely on for drinking water.[111]

102. Toxic metals and other pollutants in the Olifants River are already harming communities and wildlife that depend on it. A CSIR study on the Lower Olifants River in 2014 found, *inter alia*, that the health risks predicted from the daily consumption of one litre of water in the Lower Olifants is anticipated to be in the order of 64 times that considered to be safe for a life-time exposure in South African study sites. In one South African study site, arsenic in water samples was found at levels considered to be responsible for a 1 in 1 000 chance of developing cancer based on the consumption of one litre of water per day. This is 100 times higher than the 1 in 100 000 acceptable risk recommended by the World Health Organisation (WHO).[112] Mercury levels were found to be more than 10 times the level considered to be safe for life-time consumption, based on the daily consumption of just 1 litre of water, and arsenic was found to be 20 times above the safe level.[113] Loskop dam,

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[110] 2017 IWULA and IWWMP, section 4.6.2., p. 49.

[111] See, e.g., A Addo-Bediako, et al., Human health risk assessment for silver catfish Schilbe intermedius Rüppell, 1832, from two impoundments in the Olifants River, Limpopo, South Africa, Water SA, Vol 40 No 4 (2014) ; Sipho Kings, A river of shit, chemicals, metals flows through our land, Mail and Guardian, April 2017, https://mg.co.za/article/2017-04-13-00-a-river-of-shit-chemicals-metals-flows-through-our-land; J. Lebepe, et al., Metal contamination of human health risk associated with the consumption of Labeo rosae from the Olifants River system, South Africa, African Journal of Aquatic Sciences 2016, 41(2): 161-170. CSIR, EUM, NOVA and SANParks, "Lower Olifants Community Health: Risks and Opportunities Project," 31, Mar. 2014, section 5.2, p.37-44, available at https://cer.org.za/wp-content/uploads/2017/09/Annexure-J-Final_Report_Lower_Olifants_31March2014_FINAL.pdf.

[112] See https://cer.org.za/wp-content/uploads/2017/09/Annexure-J-Final_Report_Lower_Olifants_31March2014_FINAL.pdf.

[113] Lower Olifants Community Health: Risks and Opportunities Project, 2014, section 5.2, p. 37.

which is the next major dam along the ORC after Witbank Dam, contains, for instance fish contaminated with heavy metals.[114]

103. South African Water Quality Guidelines identify constituents such as cadmium, chromium (VI), lead, mercury and vanadium to be acutely toxic, with acute and/or irreversible effects on human health, even at very low concentrations.[115] According to the International Agency for Research on Cancer as well as the Target Water Quality Guideline, some of the health impacts of these toxic contaminants, include cancer, nausea, diarrhoea and abdominal pain, with multi-organ failure, impairment of respiratory tract, central nervous system, liver, kidneys and gastrointestinal system and cancer. Contaminants such as arsenic has irreversible impacts at even once-off exposure, and whilst cadmium bio-accumulates in the food chain, with a half-life of cadmium lasting several decades.[116]

104. Climate change effects will worsen these impacts, since climate change will increase the likelihood of droughts; meaning that there would be less capacity for the river to dilute any pollution. According to the Udall Report, climate change is very likely to reduce flows in the ORC, making the water quality in the river system even worse.[117] Further, climate change impacts would also increase the frequency and severity of storm and flood events, which would result in flooding of dirty water containment systems and increase the likelihood of pollution spillage into the already-degraded ORC.[118]

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[114] In 2007, fourteen tons of fish died in an event that lasted 30 days. This event was accompanied by a strong smell of hydrogen sulphide from the water and bubbling at the water surface (Dabrowski, Chemical characteristics and limnology of Loskop Dam on the Olifants River (South Africa), in light of recent fish and crocodile mortalities, WATER SA, Vol 39, No 5 (2013).

[115] South African Water Quality Guideline: Target Water Quality Range, Domestic Use, page 23.

[116] https://monographs.iarc.fr/wp-content/uploads/2018/06/mono100C-6.pdf; https://monographs.iarc.fr/wp-content/uploads/2018/06/mono100C-8.pdf; https://monographs.iarc.fr/wp-content/uploads/2018/06/mono100C-9.pdf;

[117] Brad Udall, Senior Water and Climate Research Scientist/Scholar at the Colorado Water Institute in Colorado State University. Udall's analysis was based on projections or warming in South Africa by the Fifth Intergovernmental Panel on Climate Change (IPCC) and downscaled data from the South Africa 2017 climate change atlas featuring high resolution climate projections issued by the South African Weather Service. Udall participated as a contributing author to the 5th IPCC report, was a co-author of two United States National Climate Change Assessments (in 2009, and upcoming in 2018) and has numerous peer-reviewed publications on how climate change will impact river hydrology.

[118] The Udal Reportl, pg 30-31.Udall's analysis concluded: (1) The Olifants River catchment has warmed significantly since 1900, and will continue to warm in the 21st century, with the ultimate amount of warming directly tied to the amount of greenhouse gasses that humans emit. The warming ranges from twice the existing warming (~2°C) to nearly five times existing warming (~5°C). Both the IPCC models and the downscaled results in the SA Atlas support this finding. This finding is virtually certain; (2) Precipitation in the Olifants catchment has decreased over the last 60 years. Future precipitation in the province is very likely to decrease as the world warms, regardless of future emissions levels, with greater decreases possible with higher warming. The drying is between -5 and -25%, representing a precipitation loss of more than 100 mm/year in parts of the basin. These results are equal to the worst drying in all of South Africa shown in the SA Atlas. Thus, given the model leanings, it seems very likely that the catchment will see significant drying on an annual basis in the 21st century, with the drying proportional to the amount

"Given all of these results, South African water and infrastructure planners and government should prepare for significant Olifants River flow reductions and refrain from actions that will increase the risks of undesired outcomes…. Maladaptive actions would include increasing the demands on these already over-allocated water systems, and contributing to additional warming by increasing emissions of greenhouse gasses through the construction of long-lasting, new coal-fired power plants."[119]

105. It appears that a similar climate change study was conducted by the DWS, and whilst the CER has submitted a request in terms of PAIA on 2 November 2018, the DWS has not yet the study available. We reserve our right to further supplement our papers on receipt thereof.

106. The Vaal River is also currently experiencing severe pollution issues, which are currently being investigated by the Human Rights Commission. To give an indication of the economic implications of cleaning up the pollution, it was estimated by an expert that cleaning up the Vaal pollution would cost the government between R800 billion and R1 trillion.[120] Similarly, the enormous cost and burden of remediating the ORC would ultimately fall on the government and the public.

107. It is clear that, purely from an environmental, climate, health, and economic impact perspective, neither the HPA nor the ORC would be able to bear additional air and water polluting activities, no matter how small the footprint is claimed to be. This is irrespective of any abatement measures proposed; abatement technologies purporting only to lessen and not eradicate pollution.

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of warming. (3) Runoff is influenced by both precipitation and by temperature. The strong preponderance of scientific evidence from all recent and relevant scientific studies indicates that flows in the Olifants river will likely decline as the 21st century warms due to precipitation reductions. Even if some increases in precipitation were to occur, however, flows will still decline due to higher evaporation and evapotranspiration from rising temperatures. Simple calculations from the American Southwest suggest that modest 3□C warming would reduce river flows by about 20% and 5□C warming would reduce flows by nearly 35%. To counteract these temperature-induced flow declines, consistent yearly increases in precipitation of approximately 10% to 17% would be needed. This seems unlikely given the model results from the IPCC and especially from the SA Atlas. And were precipitation decreases to occur, river flow would drop by even more than the pure temperature-induced declines calculated above. Thus, it seems very likely that Olifants River flows will decline substantially as the 21st century unfolds, with the decline proportional to the temperature increase. This finding is considered very likely. (4) What precipitation does occur will come on fewer days, with more intensity. Indeed, in recent years, severe flash floods have been noted in the basin. Periods between precipitation will increase, thus causing drying not seen in the historical record. 'Flash droughts' may become common. This finding is very likely.

[119] Udall Report (Annexure I), p 31.

[120] https://www.thesouthafrican.com/dr-anthony-turton-vaal-river-fix-r800bn-r1tn/

108. Notably, and as further detailed below, the June 2017 IWULA lacks material information regarding the effects of the Khanyisa Project on those in the ORC including: (1) the details and number of people in close proximity to the Project; (2) the number of people reliant on the groundwater in the Upper ORC; (3) the number and economic activities of those that rely on the Witbank dam; (4) information on the downstream users in the ORC., and (5) impacts of climate change on the Khanyisa plant and the ORC. The information contained in section 4.10 to 5 of the June 2017 IWULA is insufficient for these purposes, and the data are outdated, as was submitted in the Appellant's objections of 23 January 2017 (the "Objections").

B. Technology

109. To generate power, the Khanyisa Project will use circulating fluidised bed ("CFB") boilers to combust its source fuel because they can ""*cope with high ash and high sulphur discard coal reserves, which are proposed as the fuel source for the [Khanyisa] project*" (emphasis added).[121] The proposed power station would be one of the first plants in South Africa to use CFB boiler technology.[122] Although CFB boiler technology provides the ability to burn low grade coal, because of the low calorific value of the waste coal, Khanyisa will have to burn twice as much coal per annum to generate as much electricity as a plant burning higher grade coal.[123] Consequently, CFB power plants like Khanyisa produce several times more toxic coal ash waste per megawatt of power than pulverised coal power plants. CFB plants are also particularly GHG emission—intensive.[124]

110. The 2012 FEIR states that Khanyisa would consume 3 265 000 tonnes/year of coal for a 450MW power station,[125] generating 1.4 million tonnes/year of coal ash (35 million tonnes of ash over a 25 year period).[126] Thus, nearly half a tonne of waste will be generated for every ton of coal burned (1.4 million / 3.265 million = 43%). This rate is significantly higher

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[121] June 2017 IWULA, Appendix H7.5 "Project Feasibility Study," p. 24. (Citing Khanyisa Power Station – Project Concept Report (MML) Dec. 2010) and section 2.2.7.1, p. 28. (emphasis added).
[122] 2012 FEIR, Appendix N "Waste Management Specialist Report," p. 9; See also June 2017 IWULA Volume 3, Appendix E6 Waste Management Specialist Report, p. 6
[123] Food and Agricultural Organization of the United Nations. Energy Conservation in the Mechanical Forest, (1990), Appendix IV, Table 1. Comparative heating values of various commercial fuels, *available at* http://www.fao.org/docrep/t0269e/t0269e0c.htm.
[124] https://cer.org.za/news/media-release-thabametsi-climate-impact-assessment-reveals-staggering-greenhouse-gas-emissions
[125] 2012 FEIR, p. 287. However, the Atmospheric Emissions license notes that the plant will burn 6 123 234 tonnes/year, or 698 tonnes per hour, for a 450MW configuration. Khanyisa, Atmospheric Emissions License, 09 November, 2015, p. 17.
[126] 2012 FEIR, p. 54.

than the average 29 percent ash content of ordinary coal burned in other existing South African coal-fired power plants.[127] There are no updated figures for the coal ash generation of a 600MW plant under either the IWULA or EA process. Further, no coal ash disposal is catered for beyond the 5 years of Khanyisa's operation in the WUL.

111. On the basis of extrapolating the coal ash production rate of 1.4 million tonnes a year (or 35 million tonnes for 25 years) mentioned in the 2012 FEIR for a 306MW plant, the 306MW plant would produce 952 000 tonnes per year or 2.38 million tonnes over 25 years. On the same basis, a 600MW plant would generate approximately 47 million tonnes of coal ash over 25 years, or 1.9 million tonnes per year.

112. The June 2017 IWULA does not state how much coal ash Khanyisa will produce for a 306MW plant, whilst the RoR provides an estimate of approximately 589,000 tonnes per year (presumably for a 306MW plant)- this is almost half the rate estimated in the 2012 FEIR for a 306MW plant and around one quarter of that in respect of a 600MW plant.[128]

113. Consequently, inconsistent information in the WULA and EA process make it particularly difficult to determine the full impact of the Project in light of the volume of coal produced. This volume is one of the key considerations as to whether or not to issue a water use licence as it determines whether or not: (1) the proposed site and size will be sufficient and appropriate for the management and disposal of the full volume of the coal ash; (2) the proposed liner for the waste disposal facility will be adequate for the volume of ash; (3) the amount of the waste will be adequately handled by the proposed liner, storm water and leachate management systems; and (4) any proposed mitigation measures are adequate for the volume generated.

114. It is not only the quantity but also the quality of the ash generated that is problematic. CFB boilers burn discard coal with a high ash content (approximately 50 percent) and sulphur content (approximately 2-3 percent). Because the discard coal is mixed with limestone, which acts as a sorbent and helps control air pollution at the plant,[129] it releases high

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[127] Pretorius, I., Piketh, S., Burger, R., and Neomagus, H., 2015, A perspective on South African coal fired power station emissions. Journal of Energy in South African, Volume 26, Number 3, pages 27-40.

[128] Record of RoR, p. 14. Elsewhere in the record, CCR generation is estimated based on a 300-MW plant to be approximately 25 million tonnes over 25 years, which equates to approximately 50 million tonnes over 25 years for a 600-MW plant. 2012 FEIR, Appendix L, Surface Water Quality Impact Assessment, p. 3; see also, June 2017 IWULA Volume 2 Appendix E Specialist Studies, Surface Water Quality Impact Assessment, p. 3.

[129] 2012 FEIR, p. xiv; See also June 2017 IWULA and IWWMP, p. 28.

amounts of *"[p]articulate emissions*" into the air that contain sulphur.[130] The CFB boiler emissions also release large quantities of N_2O.[131] N_2O's Global Warming Potential is 268 times higher than that of carbon dioxide ("CO_2").[132]

115. One way to reduce sulphur emissions is through Flue Gas Desulphurization, a filtering process that removes sulphur electrostatically, through scrubbing the gas, or by injecting dry sorbents such as limestone. The Khanyisa Project's use of this technology, which in itself is problematic, is not a given. The Project will be "*Flue Gas Desulphurization (FGD) ready*," meaning that Khanyisa will not be built with FGD technology right away, but rather the "*decision and timing for retrofitting the power station with FGD will be based on ambient air quality monitoring results and South African regulations*."[133]

C. Coal Ash Disposal Facility

i. Environmental implications of coal ash

116. Further to the above, the manner of coal ash disposal is fundamental to assessing the impact of the Khanyisa Project.

117. The assessment of coal ash set out below is largely with reference to: (1) the 5 August 2018 report, "Water Quality Impacts from the Proposed Khanyisa Power Station," by Evan Hansen of the United States environmental consultant service Downstream Strategies and; (2) the 21 March 2018 professional opinion provided to the Appellant by Dr David Chambers of the Montana based Centre for Science in Public Participation in respect of the site selection for the Ash Disposal Facility (the "Hansen Report" and "Chambers Report" respectively). A copy of these reports, , are attached as **Annexures G** and **H** respectively.[134]

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[130] June 2017 IWULA, section 2.2.7.1, p. 28.
[131] See for example, the Thabametsi plant, which is the other preferred bidder under the coal IPP, using the same CFB technology https://cer.org.za/news/media-release-thabametsi-climate-impact-assessment-reveals-staggering-greenhouse-gas-emissions
[131] 2012 FEIR, p.
[132] https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf
[133] June 2017 IWULA, section 2.2.7.1, pp. 28-29.
[134] Mr. Hansen has more than 20 years of experience in evaluating environmental impact assessments of coal-fired power stations, open-pit and mine-reclamation disposal of coal ash, and the associated impacts of coal ash on surface and subsurface geologic media (e.g., groundwater) in the United States of America. Dr. Chambers is a Registered Professional Geophysicist (GP #972) in the State of California, and has over 40 years of experience in the

118. Toxic coal ash or coal combustion residue ("CCR") is the non-combustible residue produced when coal is burned.[135] Consequently, coal ash has most of the same elements as the parent coal, but at much higher concentrations.[136] It often contains high, and potentially toxic, concentrations of many substances that can pollute any water that it contacts.[137] That polluted water is commonly called leachate, and it tends to be alkaline (high pH) and enriched in numerous substances including sulphate (SO_4) and boron, as well as toxic heavy metals such as arsenic, cadmium, chromium, lead, molybdenum, and selenium.[138] It is common for coal ash leachate to escape the ash and enter and contaminate natural groundwater and surface water systems if not managed appropriately.[139]

119. Further to the vast quantities of coal ash produced, historically-poor disposal practices, and widespread evidence of environmental damage from coal ash leachate to water resources, the United States Environmental Protection Agency ("EPA") recently increased regulatory requirements for ash handling, disposal, containment, remediation, and environmental monitoring, to ensure against the devastating impacts of contamination from coal ash (the "US Regulations").[140] West Virginia, Pennsylvania and other states have also taken steps to better regulate coal ash disposal.[141]

120. Numerous researchers have observed worldwide the adverse environmental impacts caused by the leaching of coal ash to groundwater and surface waters from both old and new ash deposits. [142] Leaching takes place from both old and new sites, and peak leaching of hazardous chemicals occurs many decades after disposal and can persist for hundreds

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field of mineral exploration and development, including 15 years of technical and management experience relating to mining and mineral exploration. For the past 25+ years he has advised public interest organizations and tribal governments on the environmental effects of mining projects, both nationally and internationally. He has provided technical assistance to various entities on proposed, operating, and abandoned mines in 17 states, 4 Canadian provinces, Kyrgyzstan, and Northern Ireland.

[135] Hansen Report (Annexure G), section 1.

[136] For example, for trace metals, arsenic, cadmium, chromium, lead, antimony and selenium, 97%, 97.2%, 99%, 97.5%, 97.7% and 91.5% of the total mobilisation of each of these metals, respectively, is retained and concentrated in the coal ash. Sabbioni, E., Goetz, L., and Bignoli, G.(1984). "Health and Environmental Implications of Trace Metals Released from Coal-Fired Power Plants: An Assessment Study of the Situation in the European Community." The Science of the Total Environment (40) 141-154.

[137] Hansen Report (Annexure G), section 1.

[138] Hansen Report (Annexure G), section 1.

[139] Hansen Report (Annexure G), section 1.

[140] Hansen Report (Annexure G), section 2.2.

[141] Hansen Report (Annexure G), section 2.4.

[142] *See*, Office of Solid Waste & Emergency Response, EPA, Human and Ecological Risk Assessment of Coal Combustion Wastes 2-4 (draft) (Apr. 2010) at 4-11.

of years.[143] Thus, ash disposal sites are potential sources of groundwater and surface water contamination for many decades after ash deposal has ceased.[144]

121. The major environmental harms from coal ash include: leaching of potentially toxic substances into soils, groundwater and surface waters; hindering effects on plant communities; and the accumulation of toxic elements in the food chain.[145] Many researchers have documented the negative effects of coal ash on the physiology, morphology and behaviour of aquatic organisms and the health of aquatic ecosystems,[146] as well as the potential harm from coal ash contamination in drinking water to human health (including cancer and damage to the nervous systems and other organs, especially in children).[147]

ii. Geohydrological location

122. The location of Khanyisa's proposed ash dump ("Ash site 3") is a former opencast site. The site was rehabilitated and backfilled with opencast material from the excavation.[148] Not only does this mean that the original and moderately impermeable ferricrete soil layer is no longer intact and cannot be counted on to prevent water pollution from reaching groundwater and surface water from the coal ash dump but also that the containing of coal ash pollutants are further undermined because the backfill used to rehabilitate the opencast is highly permeable.[149]

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[143] *See*, Office of Solid Waste & Emergency Response, EPA, Human and Ecological Risk Assessment of Coal Combustion Wastes 2-4 (draft) (Apr. 2010) at 4-11.
[144] Sandhu, S.S., Mills, G.I., Sajwan, K.S. (1993). "Leachability of Ni, Cd, Cr, and As from Coal Ash Impoundments of Different Ages on the Savannah River Site." In Keefer, R.F., Sajwan, K. S. [eds.], Trace Elements in Coal and Coal Combustion Residues. Lewis Publishers: Boca Raton.
[145] Rowe, L.C., Hopkins, W.A., Congdon, J.D. (2002). "Ecotoxicological Implications of Aquatic Disposal of Coal Combustion Residues in the United States: A Review." Environmental Monitoring and Assessment 80: 207.
[146] Rowe, L.C., Hopkins, W.A., Congdon, J.D. (2002). "Ecotoxicological Implications of Aquatic Disposal of Coal Combustion Residues in the United States: A Review." Environmental Monitoring and Assessment 80: 207.
[147] *See*, *e.g.*, Physicians for Social Responsibility, *Coal Ash: Hazardous to Human Health*, http://www.psr.org/resources/coal-ash-hazardous-to-human-health.html; Physicians for Social Responsibility and Earthjustice, *Coal Ash: The toxic threat to our health and environment*, September 2010, http://www.psr.org/resources/coal-ash-the-toxic-threat-to-our-health-and-environment.html.
[148] 2012 FEIR, p. xxi, 19 and 237; Chambers Report (Annexure H), at p.3; Hansen Report (Annexure G), sections 3.1, 3.3.and 4.2.
[149] Hansen Report (Annexure G), section 4.1.

123. According to the June 2017 IWULA, it is unknown whether any compaction was used during the backfilling and the remediation process, and the supporting pillars are still to be mined.[150]

124. Ash Site 3 is directly connected to underground mine voids with "*extremely high*" hydraulic conductivity[151] and which increase the risk of landfill collapse.[152] Fractures are also common in the vicinity of the proposed coal ash dump. These fractures serve as preferential flowpaths that can transport pollution quickly from the coal ash dump to groundwater and surface water.[153]

125. In relation to the fractured ground, the Hansen report finds that *"In fact, the whole area is so disturbed that the applicant abandoned a geophysical survey that was originally intended to identify possible dykes, faults, and/or fracture zones that may act as groundwater flow barriers or pathways, because "such preferred groundwater flow zones have thus been mined out/destroyed*."[154]

126. The Geohydrological Evaluation included in the June 2017 IWULA finds that:

> "*This opencast is directly upstream of the Olifants River and unless mitigated, will seep into the river as either surface or base flow. As the Olifants River feeds directly into the Witbank Dam, the impact would thus be environmentally unacceptable.*"[155]

127. Whilst the Geohydrological Evaluation refers to the mitigation of impacts through the environmental management structure set out in the reports by Mott MacDonald Consultants, it appears that the Mott and MacDonald reports were not submitted to the DWS with the WUL application and, therefore, these mitigation measures have not been forthcoming.

128. The recommendation provided by a DWS geohydrologist during the 2012 FEIR process concludes that "*<u>the site locality is regarded as a fatal flaw due to underlining and backfilling of an open cast mine</u>*" (our emphasis).[156] Further to the Groenewald Memo (Annexure B),

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[150] June 2017 IWULA, p. 24; *see*, *also*, Letter "RE: Khanyisa Coal Fired Power Station Waste License Application," from Geohydrologist Marisa Groenewald to the "DWA – National Office Pretoria Attention: M Noe," 27 November 2012 ("Groenewald Memo").
[151] Chambers Report (Annexure H), p.4; Hansen Report (Annexure G)., section 3.3.
[152] Hansen Report (Annexure G), section 4.3 and Chambers Report, p. 4.
[153] Hansen Report (Annexure G), section 3.3.
[154] Hansen Report (Annexure G), p 20; June 2017 IWULA Volume 3, Appendix E8, Geohydrological Evaluation, p. v (emphasis added).
[155] June 2017 IWULA Volume 3, Appendix E8, Geohydrological Evaluation, p. xiii-xiv (emphasis added).
[156] Groenewald Memo Annexure B, at p.4

if the supporting pillars of the underlying mine are still to be mined, this may cause the ground to cave, thereby compromising the integrity of the proposed liner for the Ash Disposal Facility.

129. Following the Groenewald Memo, a request for further information concerning the need for kinetic leach testing, DWS engineer approval of liners, the pillars still to be mined, geochemical studies, the monitoring of gypsum and mercury *et al* was made by the then Director-General of DWS to the DEA in a letter dated 29 November 2012Anenxure B.

130. Because the current groundwater level in the mining area has been artificially lowered by pumping that allows access to active underground and opencast mines in the area, groundwater levels are expected to rise when this pumping ends, potentially leading to wetting of the opencast backfill from below.[157] The Record omits material details in this regard: (1) it does not state the elevation that groundwater will return to after pumping stops; (2) it does not compare any projected elevation with the elevation of the partially-buried coal ash in the coal ash dump; and (3) it does not recognise that the coal ash dump will continue to hold ash after the active life of the landfill. The Record merely states that "*groundwater rebound is unlikely to affect the backfill during the design life of the landfill*",[158] with the June 2017 IWULA noting that:

> "*The groundwater is not expected to rebound in the lifetime of the landfill and the maintenance period of the landfill, given that the mining operations in the surrounding areas will continue for an additional 60 years. Although this is likely to happen after the active life the landfill, it is imperative to mitigate against groundwater pollution*."[159]

131. The effect of this geographical instability on the proposed ash dump facility is underscored in the 2012 FEIR:

> "*It is not easily possible to overcome geotechnical constraints of this type (undermining) with readily available and affordable but appropriate geotechnical measures and thus no specific mitigation measures are applicable or discussed herein*."[160]

132. The placement of CFB coal ash in opencast coal mines has been shown in the United States to cause adverse environmental impacts. The United States National Academy of Sciences determined the practice to be potentially unsafe and concluded that "*the presence of high*

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[157] 2017 IWULA, p. 61; Hansen Report (Annexure G), section 4, Chambers Report (Annexure H), at p. 3-4.
[158] 2011 Conceptual Storm Water Management Plan, p. 23.
[159] June 2017 IWULA, p. 61.
[160] 2012 FEIR, p. 227.

contaminant levels in many [coal ash] leachates may create human health and ecological concerns at or near some mine sites over the long term."[161]

133. Serious contamination has been documented at numerous opencast mine sites in the United States where CFB coal ash has been disposed. In a multi-year study of 15 coal ash minefills in Pennsylvania, researchers found that coal ash made water quality worse at 10 of the 15 mines.[162] (At the remaining five sites, there was not enough monitoring data to determine whether adverse impacts were caused by the coal ash.)[163]

134. Recently promulgated federal regulations in the United States prohibit the construction of coal ash landfills in unstable areas:

> "*An existing or new CCR landfill…must not be located in an unstable area unless the owner or operator demonstrates…that recognized and generally accepted good engineering practices have been incorporated into the design of the CCR unit to ensure that the integrity of the structural components of the CCR unit will not be disrupted. The owner or operator must consider all of the following factors, at a minimum, when determining whether an area is unstable: (1) On-site or local soil conditions that may result in significant differential settling; (2) On-site or local geologic or geomorphologic features; and (3) On-site or local human-made features or events (both surface and subsurface)*."[164]

135. The environmental risk associated with storing toxic coal ash in former opencast mines is high. This stems from the large volume of waste placed in these mines and the ash's contact with water.[165] Since groundwater or mine pools at mine sites are often highly acidic due to AMD, the interaction of the alkaline (high pH) ash with the acidic (low pH) mine water can mobilise hazardous chemicals from the ash. In addition, the production of contaminated leachate in the mine environment often leads to uncontrolled off-site flows of polluted water.[166] Opencast mines present a highly fractured underground environment where the

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[161] Hansen Report (Annexure G), section 4.3; Comm. on Mine Placement of Coal Combustion Wastes, National Academy of Sciences, Managing Coal Combustion Residues in Mines 4 (2006) (emphasis in original).
[162] Clean Air Task Force, Impacts on Water Quality from Placement of Coal Combustion Waste in Pennsylvania Coal Mines vi (July 2006). Hansen Report (Annexure G), section 2.4.2.
[163] A review of the mine sites where coal ash was disposed revealed that: (1) levels of contaminants, including manganese, aluminium, arsenic, lead, selenium, cadmium, chromium, nickel, sulphate and chloride, increased in groundwater and/or surface water after coal ash was disposed of in the mines; (2) contaminants increased from background concentrations (measured after mining) to levels hundreds to thousands of times in exceedance of federal drinking water standards; and (3) pollution was found downstream from coal ash disposal areas and sometimes well outside the boundary of the mines (Hansen Report (Annexure G), section 2.4.2.).
[164] U.S. Code of Federal Regulations § 40-257.64.
[165] Hansen Report (Annexure G), section 4.8; Chambers Report, p. 3.
[166] Hansen Report (Annexure G), section 4.8; Chambers Report, p. 3

travel of leachate is facilitated by the cracks and voids in the subsurface environment.[167] Thus contamination at highly fractured mine sites – such as Ash Site 3 – can often be severe and very difficult to remediate due to the massive quantities of overburden and multiple pathways for the flow of pollution.[168]

iii. Dimensions and life-span of ash disposal facility

136. Ash Site 3 measures 3,500 by 600 metres, or approximately 210 hectares.[169] As set out above, the Record provides different estimates of the dimensions, exact location and life-span of the Ash Disposal Facility:

136.1. The 2012 FEIR and 2011 Surface Water Quality Impact Assessment estimate that 140 hectares of the 210-hectare site will be required to handle 25 years of coal ash disposal from a 450-MW plant[170], with 93 ha for a 300 MW plant,[171] and 186 hectares required to handle 25 years of coal ash disposal from a 600-MW plant.[172]. The scoping report estimates that 140 hectares will be required for a 450-MW plant, 93 hectares for a 300-MW plant and 252 hectares (i.e. an area larger than Ash Site 3) for a 600-MW plant.[173] The June 2017 IWULA and ROR notes that 140 hectares would be required for a 306MW plant,[174] and elsewhere the June 2017 IWULA also states that "*ash disposal site will be designed for a capacity of approximately 5 years and cover approximately 284 000m²*", which is about 28 hectares.[175]

136.2. the June 2017 IWULA notes that the distance between the plant and Ash Disposal Facility as 5 km, while previous documents note it as 2.7km.[176] (The latter estimate is more consistent with the distance as it appears on maps such as that below, and the June 2017 IWULA does not explain why it amended the distance to 5 km from previous documents).

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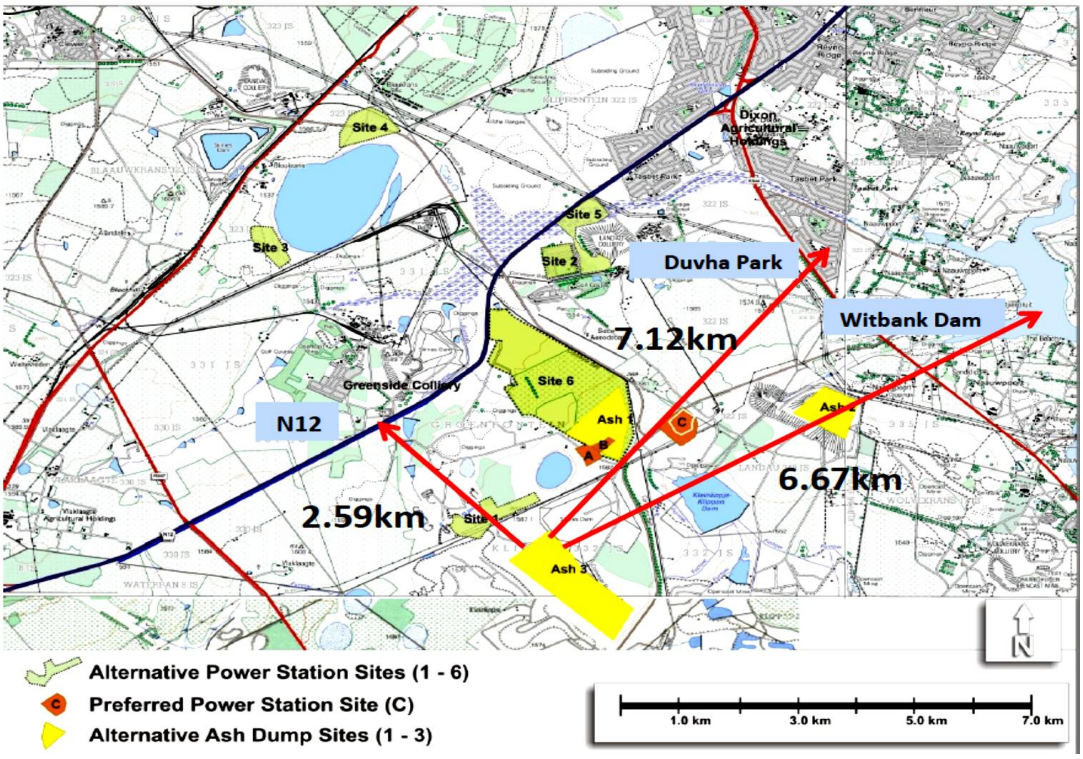
[167] Hansen Report (Annexure G), section 4.8; Chambers Report, p. 3
[168] Hansen Report (Annexure G), section 4.8; Chambers Report, p. 3
[169] 2012 FEIR, p. 59.
[170] 2012 FEIR, Appendix L, "Surface Water Quality Impact Assessment," p. 3; 2012 FEIR, p. 53; See also, June 2017 IWULA, p. 77; June 2017 IWULA Volume 2, Appendix E Specialist Studies Surface Water Quality Impact Assessment, p. 3.
[171] 2012 FEIR, Appendix L: Surface Water Quality Impact Assessment, p. 3
[172] 2012 FEIR, p. 53; *see*, *also*, Hansen Report (Annexure G), section 4.6.
[173] Final Scoping Report, pg 67-68.
[174] Record of Recommendation, p. 13.
[175] June 2017 IWULA, p. 79.
[176] June 2017 IWULA, p.24. *See*, *also*, 2012 FEIR.

136.3. Whilst it is projected that the final height of the compacted ash dump will rise 40 metres,[177] the authorised and/or envisaged lifespan of the Project is unclear: According to the June 2017 IWULA, whilst the Ash Disposal Facility will be designed to accommodate 28 000 000m^3 with a capacity of 5 years only, Khanyisa is expected to operate for at least 30 years, with the WUL issued for 20 years.[178] ACWA proposes to divide the Ash Disposal Facility into individual cells, each with a footprint of approximately four hectares.[179] The 2012 FEIR notes that each cell accommodates 1.4 million tonnes of waste, on average; the 20 cells accommodating a total of 28 million tonnes.[180] According to the 2012 FEIR, each cell would have the capacity to accommodate one year of ash, suggesting that this design is meant to accommodate 20 years of coal ash generation based on a 450-MW power station.[181] The 2016 Ash Disposal Site Storm Water Management Plan describes the Ash Disposal Facility as having 30 cells to accommodate a 30-year lifetime of a 300-MW plant, but with no estimate of coal ash generation.[182]



[177] June 2017 IWULA and IWWMP, section 2.2 and p. 24.
[178] June 2017 IWULA and IWWMP, section 2.2 and p. 24.
[179] 2012 FEIR, p. 72.
[180] 2012 FEIR, p. 108.
[181] 2012 FEIR, p.72.
[182] June 2017 IWULA Volume 5, Appendix H4, "Ash Disposal Site Storm Water Management Plan," p. 2.

iv. Proposed mitigation measures: Liner and leachate collection system

137. Excess water from spraying for dust control and stormwater will seep through the ash and create a toxic leachate runoff. It is proposed that a liner and leachate collection system would direct and pump the leachate from the Ash Disposal Facility to an ash water recovery pond.[183] The June 2017 IWULA envisages the building of eleven ash water recovery ponds[184] with the dirty runoff reused in controlling dust at the ash dump.[185] In addition to the coal ash contaminated leachate collection system, Khanyisa proposes to employ a clean storm water management system at the ash dump site to collect runoff from the peripheral drainage built around the closed ash dump cells.[186] Runoff collected from these areas will be directed to several ponds to be reused as clean water.[187] It is unclear whether/how the clean and dirty water systems will be separated and disposed of or reused (including whether stormwater will be entirely free of any polluting material)this should have been made clear in the application.

138. The liner and leachate collection system proposed for the Ash Disposal Facility includes a series of primary and secondary layers designed to prevent leachate from leaking into groundwater and to detect leaks should they occur.[188]

139. The liner system and leachate collection system is detailed in the 2012 FEIR and June 2017 IWULA as follows:

> "*The basal lining system is to be anchored at the top of a minimum 1.5m high perimeter bund, with internal and external slopes of 1(v):3(h). The proposed basal lining system comprises the following elements in the following succession from top to bottom:*
>
> - *300mm Leachate Collection Layer;*
> - *150mm Soil Protection Layer (or Protective Geotextile);*
> - *1 No. layer of 2mm FML /HDPE Geomembrane (double textured);*
> - *1 No. layer of Geosynthetic Clay Liner (GCL);*
> - *<u>100mm</u> thick silt /sand support layer;*
> - *1 No. layer of Protective Geotextile (Geotextile Layer);*
> - *150mm Leakage Detection and Collection Layer;*

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[183] June 2017 IWULA, p 79; GE April 2016 Ash Disposal Site Storm Water Management Plan, pp. 2 and 4.
[184] June 2017 IWULA, p. 25.
[185] *Ibid*.
[186] June 2017 IWULA, p. 80; GE 2016 SWMP, p. 4.
[187] *Ibid.*
[188] 2012 FEIR, pp. 210 and 215; Hansen Report (Annexure G), section 4.3. The primary system would use perforated, smooth bore, high-density polyethylene or polypropylene pipes embedded in the upper 300 mm-thick leachate collection layer; a collection sump; and a side-slope riser. The secondary system would be similar to primary system, but with a smaller side-slope riser.

- *1 No. layer of Geosynthetic Clay Liner (GCL);*
- *150mm Base Preparation Layer; and*
- *In situ Soil (OCCS backfill material).*"[189] (Emphasis added)

140. In addition, a report by G. Bhebhe of DWS dated 18 July, 2017 (the "Bhebhe Report" as annexed marked **Annexure J**) observed that:

> "*The ash disposal is to be located on rehabilitated ground, which was formally an opencast site. The compaction during backfilling cannot be confirmed, therefore the suitability of the rehabilitated area as a disposal site is uncertain, which could compromise the integrity of the barrier system below the ash dump.*"[190]

141. Both the Chambers (Annexure H) and Hansen Reports (Annexure G) conclude that the existence of underground mine voids beneath the site and backfill would cause the ash dump to collapse and rupture the liner, making the site unacceptable for use as a toxic landfill.

142. According to Dr. Chambers:

> *"If there is any possibility that underground workings still underlie any of the area where a liner will be placed, then Site 3 cannot be used for ash disposal. It is common in both underground metal and coal mines for mine collapse to cause surface subsidence. A collapse of the underground workings after the liner is in place would almost certainly create enough subsidence to rupture the liner, and the associated piping system, to allow contaminated water to enter the underground workings, leading to further groundwater pollution*."[191] (emphasis added)
>
> *"The modelling done to support the conclusion that no damage would occur to the liner assumed that the liner would be placed on mine backfill, not over underground workings (Annexure H 2012, p. 12, Response 2).*
>
> *There is no question that collapse of remaining underground workings could cause liner rupture to happen. Unless it can be conclusively determined that there is no possibility of underground workings remaining, Site 3 cannot be used for ash disposal."*[192] (emphasis added)

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[189] 2012 FEIR, p. 215; Hansen Report (Annexure G), section 4.3; *see*, *also*, June 2017 IWULA Annexure H, PDF page 407, Ash Disposal Liner, Typical Lining Details and Stormwater Drainage Details

[190] G. Bhebhe, Civil Design Comments (2) and Recommendations, 18 July, 2017, Signed off by F. Ngombe, p. 2 (Section 3 "Observations").

[191] Chambers Report, p. 3 (emphasis added)

[192] Chambers Report, p. 3.

V. WATER RESOURCES PERTAINING TO THE KHANYISA PROJECT

A. Surface Water

143. The Khanyisa plant falls within the B11G quatemary catchment, which drains into the Upper Olifants River through the Noupoortspruit tributary. The Ash Disposal Facility falls within the B11F quatemary catchment which drains into the Tweefonteinspruit tributary of the Upper Olifants River. The Khanyisa plant is located approximately 3.5km of Noupoortspruit, and 5km west of the Olifants River.[193] The Upper ORC is the main stem of the ORC.[194]

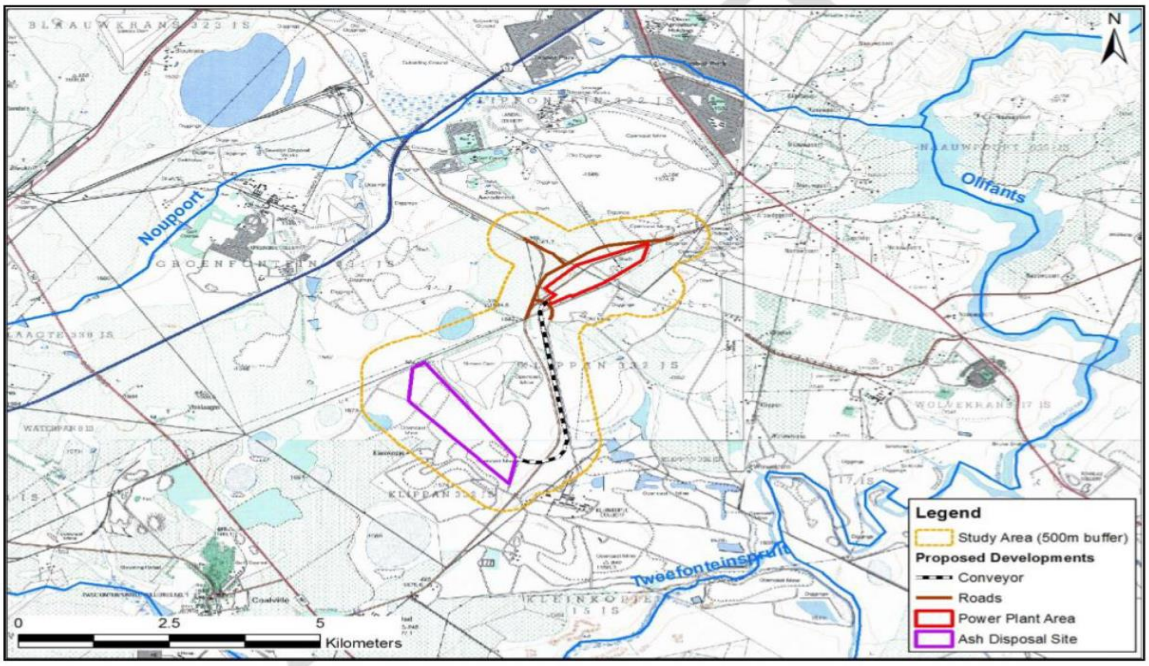

Figure 2. Map showing the regional location of the ACWA Power Khanyisa IPP Project study area.

Figure 1: Map showing the regional location of Khanyisa in relation to the surface water bodies.

144. The Project proposes to use reclaimed mine water from the eMalahleni Water Reclamation Plant ("EWRP"), the supplier of potable water to the eMalahleni residents "*for all required purposes and will therefore not place any burden on the regions municipal and groundwater resources*."[195] However, both the FEIR and IWULA processes omit material details in this

[193] June 2017 IWULA, pg 48.
[194] 2012 FEIR, p. xvii.
[195] 2012 FEIR, p. xxxix; *see*, *also*, June 2017 IWULA, p. 18.

regard. They fail to consider: (1) the exact amount the Project intends to source per annum from the EWRP; (2) how the Project's water usage will impact or diminish EWRP's ability to supply existing users; (3) if there is insufficient supply to meet the needs of Khanyisa (and its other users), whether the EWRP would have to abstract from the ORC; and (4) how upward population trends may exacerbate competing needs for water from the EWRP.[196]

145. Additionally, whilst Khanyisa's FEIR state that the Project will need to build a new wash plant (apparently to be located next to the Ash Disposal Facility) to wash 60% of the discard coal that Khanyisa consumes.[197] Further, that "*the Ash Dump, possibly the* ***coal washing plant and also the coal discard from the washing plant will be located in a previously disturbed mining area*** *and therefore the EMPR of the host mine must be updated to incorporate the new infrastructure and identify the environmental impacts and also to mitigate those impacts*." [198] (emphasis added). Much like the 400kv substation, coal washing plant is integral to the whole operation and, as such, a detailed environmental impacts should have been addressed in the IWULA. This responsibility falls on Khanyisa (as opposed to the host mine), since the operation of the Ash Disposal Facility and the coal wash plant will occur on Khanyisa's property. There is, however, no assessment or mention of a coal washing plant in the 2017 IWULA main report whilst the Annexure H4 layout design for the Ash Disposal Facility clearly indicates that there will be a coal washing plant.[199]

146. Despite the coal wash plant being operated on disturbed land, neither the FEIR not the IWULA analyses the full environmental impacts, and these reports also do not refer to the amount of water required for this and whether the EWRP will be sufficient to supply the new wash plant. Documents such as the contracts between ACWA and EWRP, and the EWRP WUL, are missing various pages and/or contain insufficient details regarding this factor. The 9 May 2017 letter from ACWA to DWS as referred in page 9-11of ROR, pertaining to the water availability, has been deemed confidential by the DWS, and has not been made available. The impacts of the coal washing plant have also not been adequately considered in the IWULA or the WUL.

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[196] 2012 FEIR, p. xxii-xxiii; *see*, *also*, June 2017 IWULA p. 69-70.
[197] 2012 FEIR, pg 19, 92
[198] 2012 FEIR, pg 19. 92
[199] June 2017 IWULA, Appendix H4

147. ACWA's reports also do not analyse sufficiently the water use requirements and implications of emission abatement equipment, which may be required for the reduction of emissions.

148. Whilst the June 2017 IWULA omits vital information in respect of the surface waters relating to Khanyisa, the specialist reports annexed to this IWULA make the following findings:

140.1 The Wetland Specialist Report notes:

> "*Contaminated surface water runoff from the ash dam or water seeping out of the ash dam or the pollution control dams will result in water quality deterioration in receiving water resources. Overflow of pollution control dams could also occur and impact on water quality within receiving systems, which will ultimately be the Olifants River*."[200]

140.2 The Wetland Specialist Report concludes that the most significant impacts to wetlands expected from Khanyisa include: "*Water quality deterioration due to seepage of contaminants out of the ash dam entering adjacent watercourse and being transported downstream to the Olifants River*."[201]

140.3 According to the Geohydrological Report, the Project site drains to the southeast or to the east toward the Olifants River via non-perennial streams and that any polluted water that discharges into the opencast below the coal ash dump would migrate toward the south and southeast, reaching the Olifants River within 20 years (see Figure 2 below).[202] The Geohydrological Report explains:

> "*Based on the modelling results* ***which depict the worst case scenario of a leaking liner****, it is interesting to note that the pollutants from all ash dams, and even the power plant site, will eventually end up in the south-eastern opencast, designated 2A at this stage. This opencast is directly upstream of the Olifants River and unless mitigated, will seep into the river as either surface or base flow. As the Olifants River feeds directly into the Witbank Dam, the impact would thus be environmentally unacceptable.".*[203]

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[200] June 2017 IWULA, Volume 3, Appendix E9: Wetland Assessment Report, section 8.3.1.5, p. 41.
[201] *Ibid*., section 10, p. 56.
[202] Note, however, that surface water runoff may run to the southwest towards the Kleinkopje-Klippan dam. FEIR, Annexure H, Issues and Response Report, p. 11 ("The natural drainage from the IPP site appears to be in a south-westerly direction, towards the Kleinkopje-Klippan Dam. Any surface water runoff not intercepted by the various interception systems described below would most likely drain towards the dirty water dam.")
[203] Geohydrological Evaluation, p. xiii-xiv, emphasis in original. This notwithstanding, according to the FEIR, Annexure H, Issues and Response Report, p. 11, "*The natural drainage from the IPP site appears to be in a south-westerly direction, towards the Kleinkopje-Klippan Dam. Any surface water runoff not intercepted by the various interception systems described below would most likely drain towards the dirty water dam."*

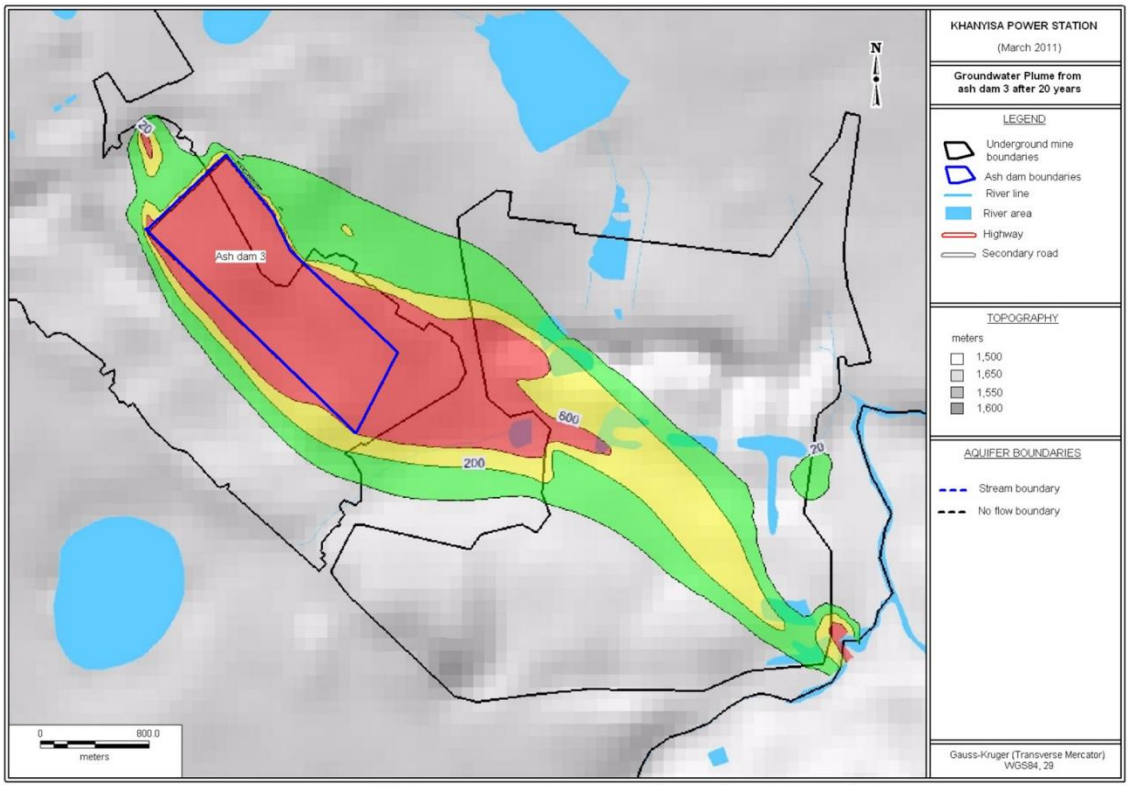

Figure 2: Pollution plume after 20 years; Source: Geohydrological Evaluation, Figure 15.

132.1 The Surface Water Quality Impact Assessment Report shows several waterbodies and wetlands in close proximity to the proposed coal ash dump site and flowing towards the Olifants River.[204]

149. The comments of local residents in respect of the draft EIR also refer to the potential effects of the Khanyisa Project on surface water:

> "*When Kleinkopje started their opencast on the northern side (adjacent to some farms owned by PJ du Plessis, A Lombaard, WJ du Plessis and again PJ du Plessis and HC du Plessis) they approached PJ du Plessis (Natie) [to] sign off that they can mine through a fountain that was feeding the stream following through the mentioned properties, . . . This stream joins up with Witbank dam. Any uncontrolled runoff from the proposed IPP site could pollute the whole stream right into Witbank dam, as well as the boreholes on these farms. WHAT MEASURES CAN BE TAKEN to avoid this? Your report is silent on this issue!*".[205]

[204] 2012 FEIR, Appendix L, Surface Water Quality Impact Assessment, p. 5-6, Figures 3.2 and 3.4.
[205] 2012 FEIR, Annexure G "Comments received on the DEIR," p. 2.

B. Ground Water

150. Whilst three distinct super-imposed groundwater systems are present at the Project's site (the upper weathered Ecca aquifer, the fractured aquifers within the un-weathered Ecca sediments and the aquifer below the Ecca sediments),[206] former mining activity around and below the proposed coal ash site in particular has greatly disturbed these distinct groundwater systems.

151. As set out above, the key factor for predicting the pathway of pollution from the coal ash dump to groundwater and, ultimately to surface water, is the proposed placement of the dump on top of a rehabilitated opencast, which is above underground mining voids. Siting the ash dump here present insurmountable problems related to water pollution from the dump site.

152. Figure 3 which is copied directly from ACWA's Geohydrological Report clearly illustrates the disturbed groundwater system. ACWA recognises that siting the ash dump on a rehabilitated opencast is a "*complicated situation*":[207]

> "*The mined areas are situated in fractured Karoo Bedrock with a very low hydraulic conductivity. Borehole yields in this formation are 1 litre/second at most, and statistically the majority of boreholes will be dry. In contrast, the* ***hydraulic conductivity of rehabilitated opencast areas is very high and pump tests will barely result in measurable drawdown, even at maximum practical extraction rates****. In addition,* ***the opencast areas are directly connected to the remaining underground mine voids; with extremely high conductance, comparable with large diameter pipes rather than typical aquifer materia****l. The ash itself is expected to be of intermediate hydraulic conductivity, somewhat between the bedrock and the backfilled opencast material, probably closer to the bedrock.*
>
> *Thus, flow of water (and associated pollutants) is expected to be slowly vertical through the ash.* ***From the water level in the opencast area, flow will mostly be horizontal at an accelerated velocity as the larger flow regime is joined, until an underground mine structure is entered****. In other areas the flow infiltrating into the bedrock can be expected to flow mostly vertically until an underground section is reached, from where flow would be horizontal down gradient*."[208] (Emphasis added)

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[206] June 2017 IWULA, p.58.
[207] 2017 IWULA and IMMP, p. 67.
[208] *Ibid.*, p. 67 (emphasis added).

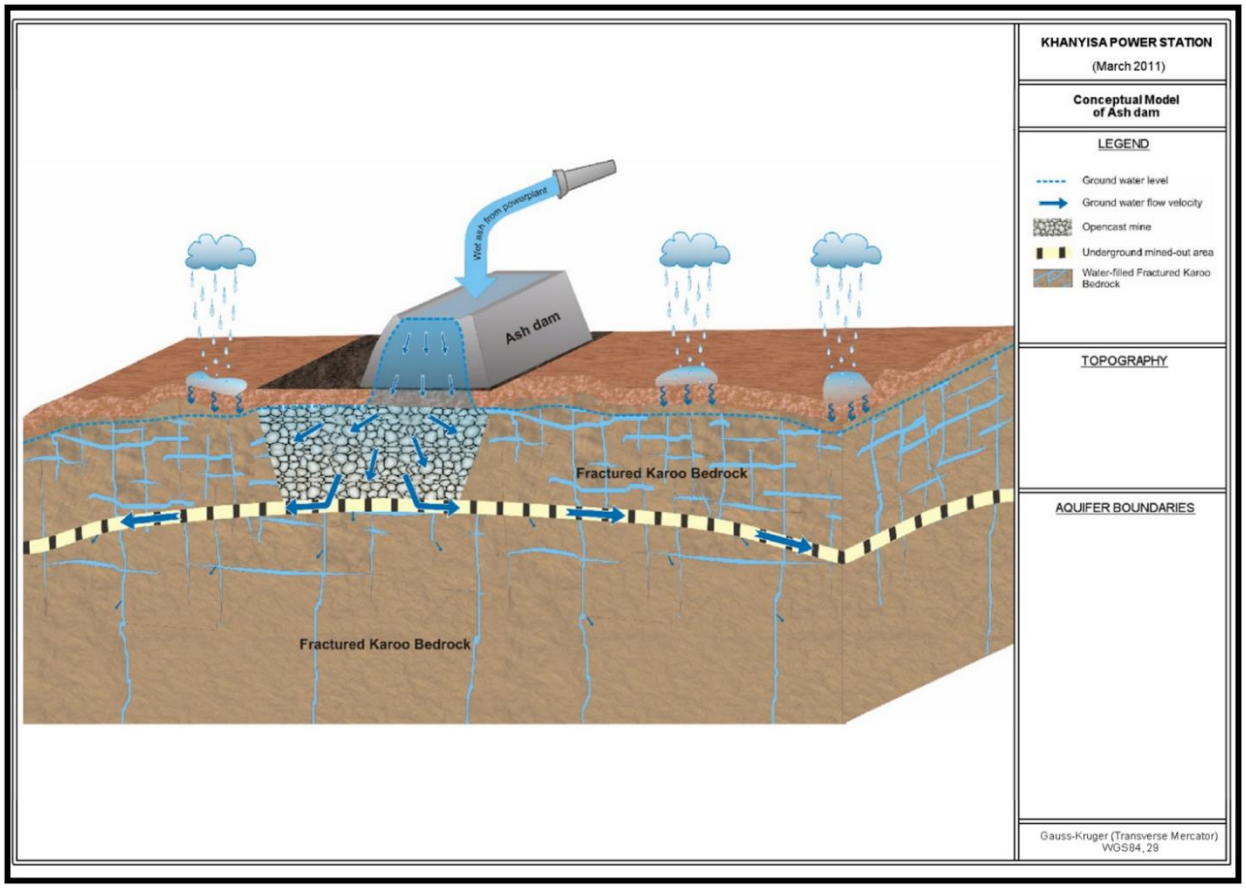

Figure 1 Conceptual model of water and pollutant flows from the coal ash dump. Copied from Geohydrological Evaluation, Figure 4. Note: The coal ash dump is referred to as an "ash dam" in this figure.

153. As shown above in Figure 3, the coal ash would be partially buried beneath the existing restored level of the opencast backfill, but most waste would be placed above the restored level like a traditional landfill.[209] The rehabilitated opencast mine is directly below the proposed Ash Disposal Facility. Because the hydraulic conductivity of the rehabilitated opencast is very high, if polluted water reaches the opencast (for example, through a leak in the liner), it will then travel very quickly through the opencast because the moderately impermeable ferricrete layer, found elsewhere in the area, is not found at the Ash Disposal Facility and therefore does not restrict the infiltration polluted water into the ground.[210]

154. In addition, as mentioned, the current groundwater level in the mining area has been artificially lowered by pumping during mining excavations. ACWA does not refer to: (1) the

[209] Hansen Report (Annexure G), section 4.1.
[210] *Ibid*.

elevation that groundwater will return to after pumping stops and whether groundwater would inundate the partially-buried coal ash; (2) plans to mitigate against pollution from the ash dump site after groundwater elevations would rise; and (3) implications of the ash dump continuing to hold toxic pollutants long after Khanyisa's design life.[211]

155. ACWA gathered data about groundwater quality and levels in the rehabilitated opencast under the proposed coal ash dump and under the proposed power station site from five existing boreholes—GUW002, KKW05, KKW13, KKW14, and KKW42—identified during a hydrocensus, and seven additional boreholes drilled in July 2011 (See Figure 4 section 7.7 of 2012 FEIR and Table 1).[212] Measurements were only taken on July 7, 2011.[213]

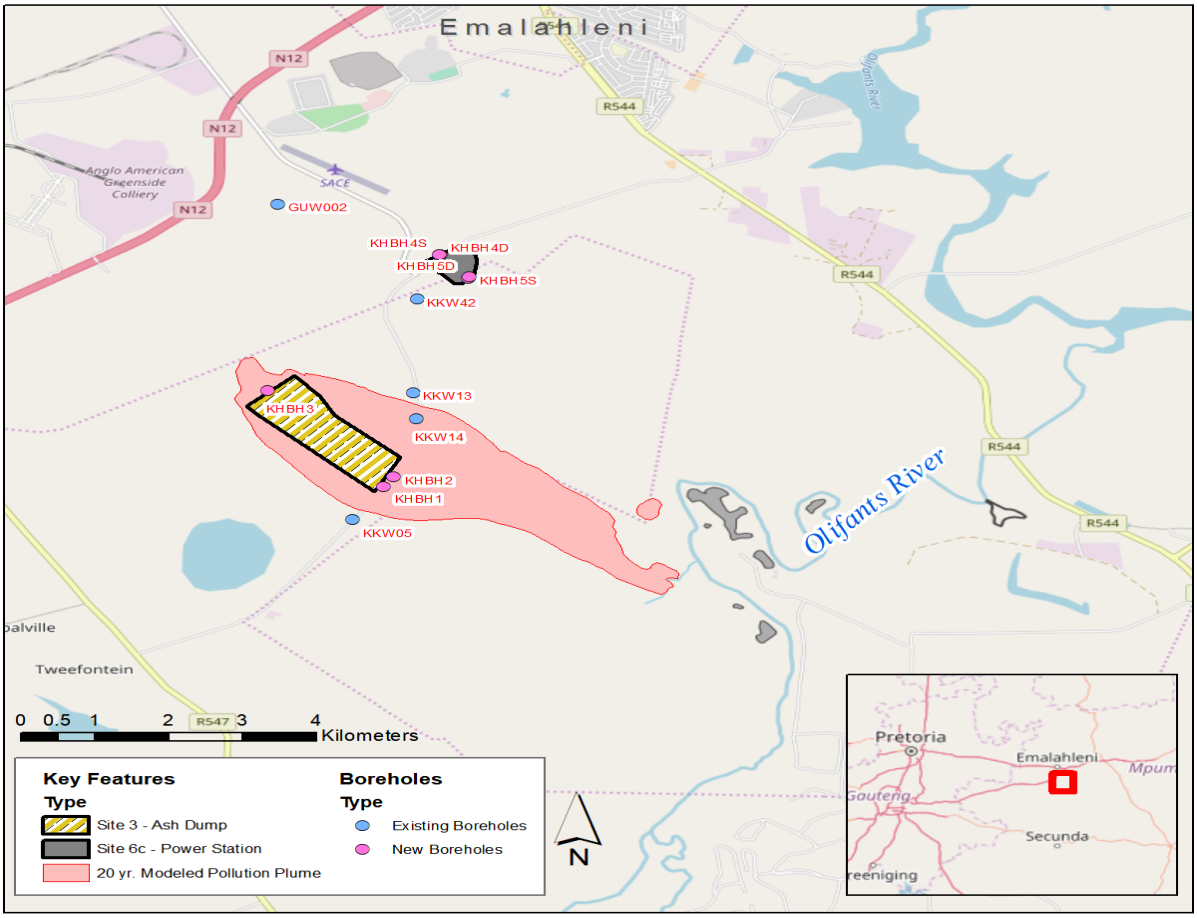

Figure 2: Existing and newly drilled boreholes

[211] June 2017 IWULA, pp. 59, 60-61, Table 16.
[212] 2012 FEIR, p. 210, Figure 7-7; *see, also*, June 2017 IWULA, p. 86; Hansen Report, section 3.8.
[213] 2012 FEIR, p. 207; Hansen Report, section 3.8, p. 14; June 2017 IWULA, p. 61.

156. ACWA summarises the groundwater quality results as follows:

- "*The wide range of values indicates that the groundwater in certain areas has been affected by underground and/or opencast coal mining.*

- *Except for boreholes **GUW002, KKW42 and KHBH4D** all of the sampled boreholes exceed the maximum allowable SABS drinking water standards. The remaining boreholes can be classified as Class II water (maximum allowable concentration for short term use only). None of the boreholes can be classified as Class I.*

- *The impact of mining operations cannot clearly be seen on boreholes **GUW002, KKW42, KHBH4D and KHBH5D & S**. Although water originating from borehole **GUW002** is drilled into old underground workings, it seems largely unaffected by the mining operations. The reason could be that the workings were flooded shortly after mining in this area ceased, leaving little time for pyrite oxidation to take place.*

- *Boreholes **KKW05, 13 and 14** are clearly affected by mining operations (low pH, high concentrations of SO4 and Mn/Fe).*[214]

VI. FUNDAMENTAL DEFICIENCES WITH KHANYISA'S WUL AND WULA PROCESS

A. Inadequate Assessment of Baseline Groundwater Quality

157. As mentioned above, ACWA assesses groundwater quality and elevations using a network of twelve boreholes on the proposed project site and took samples on only one day in July 2011. This network of boreholes is not adequate to evaluate the geologic complexity and hydrogeologic conditions for such a large area. Ash Site 3 is approximately 210 hectares, and the area is too large and hydrologically complex to be characterised with twelve boreholes—especially because only a single borehole, KHBH3, is located upstream from the Coal Ash Disposal Facility.[215]

158. ACWA uses its flawed borehole network to make claims about the predevelopment "background" quality of groundwater at the proposed power plant and Ash Disposal Facility, even though no monitoring results have been reported since 2011 and no effort has been

[214] June 2017 IWULA, p. 64.
[215] Hansen Report, section 3.8.

made to establish seasonal variability for most boreholes.[216] Insufficient data have been collected from the twelve boreholes upon which to characterise water quality.[217] Water quality data were not collected from four of the twelve boreholes, and for four of the other boreholes, water quality data were only collected once during the driest season in 2011.[218] Without sufficient data collected in different years and seasons, variations in groundwater elevations or pollution concentrations may not be observed.[219] Even so, exceedances of Class I and/or Class II thresholds were documented for certain parameters for all eight boreholes that were monitored.

159. The Hansen Report concludes:

> "*that the borehole data provided by Khanyisa to regulatory authorities may not characterize the true extent of the contamination presently emanating from the proposed ash dump site, and any decisions about licensing the ash dump would therefore be based on insufficient evidence*."[220]

B. Inadequate Projection of Groundwater Level

160. Groundwater in the vicinity of the Ash Disposal Facility is currently pumped from underground coal mines to make the coal seams accessible. Whilst this pumping will cease at some stage (even if 20 or more years hence), the IWULA process makes no reference to the subsequent impact on the integrity of the liner and leachate collection system of the Ash Disposal Facility.[221]

161. Rising groundwater levels create additional risks of interactions with the coal ash itself, or with the leachate leaking from the Ash Disposal Facility, and can mobilise additional coal ash-related pollutants and quickly transport those pollutants off-site.[222] This risk of interaction is compounded because, at this stage, the coal ash would be partially buried beneath the existing restored level of the opencast backfill:[223]

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[216] Hansen Report, section 3.8.
[217] Hansen Report, section 3.8.
[218] Hansen Report, section 3.8.
[219] Hansen Report, section 3.8.
[220] Hansen Report (Annexure G), section 3.8.
[221] Hansen Report (Annexure G), section 4.4.
[222] Hansen Report (Annexure G) section 4.4.
[223] Hansen Report (Annexure G), section 4.4. The depth of burial is not provided in the record (or, at least, it was not found in legible form within the materials found in the record).

"the record raises important unanswered questions regarding the impact of groundwater levels on water quality. The applicant does not state the elevation that groundwater will return to after pumping stops, nor does it compare that elevation with the elevation of the partially buried CCR in the coal ash dump. And the applicant, while acknowledging the problem of AMD decanting from the opencasts, does not propose a mitigation method. These issues require additional, careful study before this project should be approved. Based on the facts in the record, together with the unanswered questions, it is my opinion that it would be risky and dangerous to allow the coal ash dump to be built in the proposed location."[224]

C. Inadequate Groundwater Monitoring

162. ACWA's proposed groundwater monitoring program is to be implemented via the boreholes described above, with the recognition that the groundwater monitoring network should be expanded in the future if pollutants are migrating through the aquifer, infrastructure is expanded, or pollution sources are added.[225]

163. Table 1 below summarises the parameters to be tested; major and minor constituents are to be tested quarterly.

Table 1: Monitoring programme proposed by the applicant; source 2017 IWWMP/IWULA Report, section 5.4.2.

Parameter	Frequency	Notes
Physical		
Static groundwater level	Monthly	
Rainfall	Daily	
Groundwater abstraction rates	Monthly	If present
Chemical		
Major parameters	Quarterly	Ca, Mg, Na, K, NO_3, SO_4, Cl, Fe, Mn, B, Alkalinity, pH, EC, TPH
Minor constituents	Quarterly	Cr, Cr^6, Ni, As, Cu, Pb, Cd, Zn
Other stable isotopes	Ad hoc	

164. While the groundwater monitoring programme includes some coal ash-related parameters, it is missing antimony, barium, beryllium, cadmium, cobalt, mercury, molybdenum, selenium, silver, and thallium. If these parameters are omitted, the monitoring programme may fail to monitor certain harmful pollutants known to be associated with coal ash, which may threaten human health and the environment.[226] DWS's Groenewald Memo(Annexure B) concludes that gypsum and mercury should be added to the list of parameters.[227]

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[224] Hansen Report (Annexure G), section 4.4
[225] *Ibid*., pp. 86-87.
[226] Hansen Report (Annexure G) section 4.5.
[227] Groenewald Memo, p. v.

165. Further, additional boreholes are needed to establish a reliable long-term monitoring network. As illustrated in Figure 4 above, the boreholes are generally located in an arc in close proximity to Site 6c and Ash Site 3, and all but one borehole are to the east or southeast of the Ash Disposal Facility.[228] If pollutants migrate from the Ash Disposal Facility into groundwater, ACWA's own modelling suggests that a plume of pollution will travel toward the southeast toward the Olifants River.

166. According to Mr. Hansen, additional boreholes located further south and southeast of Ash Site 3 should be drilled and monitored in order to establish baseline conditions in the expected pathway for the plume of pollution to travel from the Ash Disposal facility toward the Olifants River.[229] This is critical to ensure that pollution is not migrating off Ash Site 3 toward the Olifants River (should elevated pollutant concentrations be found at KHBH1 or KHBH2).[230] Additional boreholes to the north, south, and west of the Ash Disposal Facility should also be drilled and monitored, to ensure that pollution does not migrate in directions not predicted by ACWA's model.[231]

167. Government officials have shared similar concerns. The Groenewald Memo(Annexure B)'s assessment denied there was an "*Acceptable monitoring program presented*," submitting the "*need to relocate the Ash dam*."[232]

D. Incorrect and Grossly Underestimated Quantification of Coal Ash Generation

168. As mentioned in paragraphs 110 to 113 above, the Record includes different estimates of the amount of coal ash that will be produced by the Khanyisa Project.

169. Even the (relatively higher) amount of coal ash production estimated in the 2012 FEIR appears significantly lower than the global production rates. The estimates of the 2012 FEIR correspond to a coal ash production rate of 0.36 tonnes coal ash per MWh.[233] In

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[228] Hansen Report (Annexure G) section 4.5.
[229] Hansen Report (Annexure G) section 4.5.
[230] Hansen Report (Annexure G) section 4.5.
[231] Hansen Report (Annexure G) section 4.5.
[232] Groenewald Memo (Annexure B), p. iii.
[233] *Ibid*., section 4.6. This calculation assumes a capacity factor, or dispatch factor, of 100% (2012 FEIR).

comparison, the average coal ash production rate at CFB plants in the United States is almost twice that quantity at 0.76 tonnes coal ash per MWh.[234]

170. The inconsistent information in the WULA and EA process makes it particularly difficult to determine the full impact of the Project in light of the volume of coal produced. As indicated above, this volume is one of the key considerations as to whether or not to issue a water use licence as it determines whether or not: (1) the proposed site and size will be sufficient and appropriate for the management and disposal of the full volume of the coal ash; (2) the proposed liner for the waste disposal facility will be adequate for the volume of ash; (3) the amount of the waste will be adequately handled by the proposed liner, storm water and leachate management systems; and (4) any proposed mitigation measures are adequate for the volume generated.

E. Failure to Update the Coal Ash Disposal Facility in respect of an 600-MW Power Station

171. According to the updated documents provided for the 600MW plant in the EA process, the Coal Ash Disposal Facility was not redesigned to handle the total toxic CCR produced following the burning of coal at a 600MW plant:

> *"Increasing the power station capacity will also increase the amount of ash to be disposed of. The capacity of the ash disposal facility must therefore be increased in order to not minimise the lifespan of the facility."*[235]
>
> *"The ash disposal facility has been designed to accommodate the amount of waste produced throughout the lifespan of the 450MW power station. Increasing the capacity of the power station to 600MW will result in ash disposal facility having insufficient capacity at some stage during the operational phase of the project. <u>Increasing the capacity of the power station will therefore have quite a significant impact on the ash disposal facility if the size of the facility is not increased.</u>"*[236] (Our emphasis)

172. ACWA is clear that the proposed ash dump cannot handle the additional ash created by a 600-MW plant:

> *"The potential impact of increased quantity of ash produced through the increased generation capacity (450MW to 600MW) of the station is expected to be the most significant. The increased generation capacity is expected to reduce the planned life of the ash disposal facility by approximately 30%, should the capacity of the ash*

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[234] *Ibid*. This calculation is based on data reported to the U.S. Energy Information Administration for fluidized bed combustion plants that report both fly ash and bottom (bed) ash from fluidized bed combustion units.
[235] June 2015 Amended EA, p. 43.
[236] *Ibid*., (emphasis added)

facility not be similarly increased. Therefore, an extension of the currently planned ash disposal facility will be required prior to the end of life of the power station."[237]

173. In the EA process, ACWA attempts to accommodate the increased expectations on the Ash Disposal Facility as follows:

> *"Should the capacity of the ash facility not be increased, the expected life span of the ash disposal facility will be reduced by 30%. An extension of the currently planned ash disposal facility will be required prior to the end of life of the power station. This can be done at a later date, as the current design of the ash disposal facility will be sufficient to cater for the nature of the ash produced by a 600MW power station (albeit not for the volume)."*[238]

174. However, Mr. Hansen concludes that the extension of the Ash Disposal Facility at a later stage is inappropriate as it could undermine the integrity of the liner:

> "*It would be inappropriate to permit this site if it is known at the outset to be undersized, with the hope that the ash dump can be extended in the future. An insufficiently sized coal ash dump that cannot handle the additional CCR could lead to failure of the liner and leak detection system, in which case trace elements and other pollutants would discharge from the coal ash dump into groundwater and surface water, threatening human health and the environment.*"[239]

175. Dr. Chambers supports this conclusion by warning that the increased footprint and/or height of an expanded Ash Disposal Facility exacerbates the risk that the permeable land underlying the facility will subside and undermine the integrity of the liner:

> "*If this site needs to be expanded to hold additional ash, that would mean either covering a larger area, which might also be undermined, or raising the height of the facility, which would put more pressure on the basal area of the disposal site. Additional weight on the footprint of the ash facility could exacerbate subsidence issues, and would need to be carefully analyzed*."[240]

176. In addition to the above, in a memo by instream Water Use indicated on page 33 of the RoR, it was recommended that ACWA present ash disposal measures beyond the 20 years of operation. However there is no indication that this was adhered to prior to the WUL issuance, nor is this indicated in the WUL.

177. The correct recommendation should be that there should be an indication of where the ash will be placed for at least 20 years in respect of a 600MW plant, and this should have been

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[237] *Ibid*.., p. 45.
[238] *Ibid*., p. 49.
[239] Hansen Report (Annexure G), section 4.7.
[240] Chambers Report (Annexure H), p. 4.

addressed prior to the WUL issuance, to determine whether the water use activities should be authorised. Currently, there is no indication of ash disposal beyond 5 years, and as such the WUL should not have been issued.

178. Because the June 2017 IWULA does not state how much coal ash Khanyisa will produce even for a 306MW plant, whilst the RoR refers to a gross underestimate of this amount, even if Khanyisa is to remain a 306MW plant,[241] the IWULA process and RoR do not entail any consideration of the effects of the increased size of the plant on the Ash Disposal Facility.

F. Failure to Meet the South African Minimum Requirements for Waste Disposal by Landfill.

179. ACWA's FEIR refers to the 'Minimum Requirements for Waste Disposal by Landfill (MR)' (DWAF, 1998b), requiring consideration of the following criteria when selecting a site for a coal ash dump:

- "*Areas in proximity to significant surface water bodies;*
- *Sensitive ecological and/or historical areas;*
- *Catchment areas for important water resources such as dams;*
- *Areas overlying or adjacent to important or potentially important aquifers;*
- *Areas overlying or adjacent to major fault zones;*
- *Areas with highly permeable soils;*
- *Areas associated with steep slopes; and*
- *An area in close proximity to land uses which are incompatible with waste disposal*."[242]

180. The FEIR sets out that none of the three sites considered for the Ash Disposal Facility, including the selected "Ash Site 3":

> "*are near to significant surface water bodies, sensitive ecological and/or historical areas, steep slopes, highly permeable soils, land uses which are incompatible with waste disposal or in areas important for water resources such as dams, overlying or adjacent to important or potentially important aquifers, or overlying or adjacent to major fault zones*."[243]

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[241] Record of Recommendation, p. 14. Elsewhere in the record, CCR generation is estimated based on a 300-MW plant to be approximately 25 million tonnes over 25 years, which equates to approximately 50 million tonnes over 25 years for a 600-MW plant. 2012 FEIR, Appendix L, Surface Water Quality Impact Assessment, p. 3; see also, June 2017 IWULA Volume 2 Appendix E Specialist Studies, Surface Water Quality Impact Assessment, p. 3.
[242] 2012 FEIR, p. 57; Hansen Report, section 4.2.
[243] 2012 FEIR, p. 58.

181. However, as highlighted in this Appeal and directly contradicted by the FEIR's description of Ash Site 3, this is incorrect because Ash Site 3 comprises highly permeable opencast backfill and underground mining tunnels close to the Olifants River and wetlands. Thus, Ash Site 3 fails many of the criteria that should guide selection of an appropriate site.[244]

182. As set out above, the Groenewald Memo (Annexure B) concludes that "*the site locality is regarded as a fatal flaw due to underlining and backfilling of an open cast mine*" (our emphasis).[245] Further to the Groenewald Memo (Annexure B), if the supporting pillars of the underlying mine are still to be mined, this may cause the ground to cave, thereby compromising the integrity of the proposed liner for the Ash Disposal Facility.

183. Additionally, the DWS's Bhebhe Memo (Annexure J) recognised that because compaction during backfilling cannot be confirmed, the suitability of the rehabilitated area underlying Ash Site 3 is uncertain and, accordingly, the barrier system of the Disposal Facility could be compromised.[246]

184. Local residents expressed concerns about Ash Site 3 as far back as 2011:

- *"As far as placing the preferred dump on rehabilitated land, we are seriously concerned about the real possibility of contamination of our underground water. We are not convinced that this pollution can be avoided. The lack of current sites in similar situations against which this can be benchmarked is of great concern.*

- *How can we be sure that the proposed lining can withstand the pressure if it is constructed on rehabilitated land?*

- *How can we be sure that, whatever method is implemented is maintained during this whole period? This is vital because in our experience as neighbours of Anglo American (Amcoal), we found that they are willing to compromise on many issues in their pursuit of profit.*

- *Our health is of no concern to them*."[247]

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[244] *See*, Hansen Report (Annexure G), section 4.2.
[245] Groenewald Memo, at p.4
[246] Civil Design Comments (2) and recommendations
[247] 2012 FEIR, Annexure G, p. 2.

G. Liner's Lack of Conformation with Global Standards

185. The liner of the Coal Ash Disposal Facility creates the barrier between the coal ash/leachate and the underlying porous rock which would carry water and pollutants quickly through the rehabilitated opencast, via underground mine voids, to ground- and surface water. The long-term integrity of the liner is vital to the mitigation of the detrimental impact of the Coal Ash Disposal Facility because this facility will continue to hold toxic pollutants decades after the operating life of the plant.

186. The 2012 FEIR and June 2017 IWULA refer to the conclusion of the Technical Design Report that "*the proposed lining system is unlikely to be compromised during the life of the landfill and the environment is therefore sufficiently protected*."[248] However, the Technical Design Report of the 2012 FEIR appears to be missing key sections, including that titled "Inherent Fatal Flaws," and therefore cannot be independently verified.[249] It is further unclear why different designs were submitted in the FEIR and the IWULA. ACWA should clarify this aspect and make the designs submitted with the FEIR, as well as any flaws which were identified during the EIA process available to the Water Tribunal. Furthermore, the Groenewald Memo (Annexure B), concludes further to the Technical Design Report that the mine pillars underlying the Ash Disposal Facility are still to be mined out and will cause subsidence, which will in turn damage the liner of this facility.[250]

187. Realistically, because there is an increasing risk of a liner failing over the life-span of the toxic ash dump,[251] it is more appropriate to describe a leaking liner as a 'reasonably likely scenario'.[252] Accordingly, the US Regulations (referred to at paragraph 119 above) require monitoring to continue for 30 years after landfill closure.[253]

188. As set out at paragraphs 122 to 142 above, the integrity of the liner and leachate collection systems for the Ash Disposal Facility face additional risk from subsidence due to *inter alia* the collapse of the underlying mining voids, a potentially-rising groundwater level, and from flaws in the liner design.

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[248] 2012 FEIR, Appendix L, Surface Water Quality Impact Assessment, p. 15; June 2017 IWUL Volume 3, Appendix E, Geohydrological Evaluation, p. 49
[249] Hansen Report, section 4.3.
[250] Groenewald memo, v.
[251] Hansen Report (Annexure G), section 4.3.
[252] Hansen Report (Annexure G) section 4.3.
[253] Hansen Report (Annexure G)., section 4.3.

189. The proposed liner design is significantly sub-standard to that widely accepted in the United States: It includes a layer that is only 100 millimetres, or 0.33 feet, thick below the geotextile liner, instead of the minimum 2 feet (609 millimetres) thickness required in the United States.[254]

H. Unclear and Outdated Storm Water Management Plans

190. Four different storm water management plants ("SWMP"s) are mentioned or found in the record so as to prevent water contamination by the Project.[255] As set out below, these SWMPs fail to provide clarity in respect of the appropriate measures, are outdated and do not address the increase in capacity of the proposed power station to 600MW and, therefore, the substantially larger amount of coal ash that the dump would receive from a 600-MW plant:[256]

190.1. The first SWMP, appended to the 2012 FEIR, was written in 2011 and before the size of the plant was increased to 600MW (the "2011 Conceptual Storm Water Management Plan").[257] A set out in the Objections, because the climatic conditions described in this SWMP are based on data over 25 years old, the floodlines, and runoff volumes have not been properly determined.

190.2. The second SWMP was included as Annexure I to the Environmental Authorisation Amendment Report and was published in 2015. This SWMP recognises that the capacity of the power station is to be increased to 600MW, but (as set out below) is not adapted to account for this increase on the basis that the size of the Ash Disposal Facility would remain unchanged:

> "*The purpose of this report is to present a review of the adequacy of the Conceptual Storm Water Management Plan (SWMP) for the Khanyisa Power Station prepared by Mott MacDonald Limited in 2011,*[258] *in view of the proposed increase in power generation capacity from 450MW to 600MW. The review output will be available for the purposes of the intended amendment of the environmental authorisation*. *<u>It is understood that the present size of the ash dump facility will not be changed and therefore there</u>*

[254] Hansen Report, section 4.3.
[255] Hansen Report, section 4.8.
[256] *Ibid*.
[257] 2012 FEIR, Volume 4, Appendix O.
[258] Environmental and Social Impact Assessment, Vol. 4 of 4 October 2011, Annexure O, Matt MacDonald, Preliminary Technical Design Report, Appendix F "Storm Water Management Plan, Ash Disposal Site, August 2011.

was no need to re-evaluate the proposed storm water system draining that section of the proposed development."[259] (Emphasis added)

190.3. The third SWMP, from 2016, appears to be an annex to the November 2016 IWULA and is written for a 300MW project. This plan appears to provide that the storm water collection pond will be filled with ash, and therefore removed from service, at some future stage with the storm water from the Ash Disposal Facility to be treated as "*clean*" after the dump is closed, without any scientific support for this assertion or any plans to monitor pollutants associated with coal ash to ensure that storm water discharges are, in fact, clean:[260]

> "*When it comes to the later stage of ash yard operation, the pond will be occupied by ash as well. And finally, after closure of this section of ash yard, storm water will be regard (sic) as clean storm water*."[261]

190.4. A fourth SWMP, also from 2016, was written by General Electric for a 300-MW plant (the "GE SWMP"), and attached to the June 2017 IWULA as Appendix H.4.1. Because the GE SWMP references the 2012 FEIR for the design of the dump site, it is again based on data over 25 years old (see paragraph 190.1 above).[262] In particular because climate change is likely to affect the impact of increased flood events, it is imperative that accurate and up to date climatic information be provided (including recent rainfall patterns) to determine floodlines and implement adequate measures to handle the dirty water system.[263] This is underscored by an email by the Environmental Assessment Practitioner (EAP) to the DWS on 13 July 2017 (attached marked as **Annexure K**) which states that "*there will not be a continuous discharge of clean storm water as most of the stormwater will be discharged into evaporation ponds. In the event of a heavy storm or if the water is not evaporated, the stormwater will overflow into the nearby wetland*" (our emphasis).

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[259] June 2015 Amended EA, Annexure I, Storm Water Management Plan (Plant Drainage Re-Evaluation), March 2015, p. i.
[260] Hansen Report, section 4.8.
[261] November 2016 IWULA, China Chengda Engineering Corporation Co., Ltd., Conceptual Storm Water Management Plan, 8 September 2016, p. 5.
[262] GE SWMP, section 2.1.
[263] As set out in the Objections, outdated climatic data implies that floodlines and expected maximum precipitation volumes have not been determined and is likely to affect various technical and expert reports annexed to the November 2016 IWULA.

190.5. The GE SWMP, when read together with the June 2017 IWULA/IWWMP and its accompanying drawings, is unclear and contradictory.[264] Whilst the GE SWMP and section 5.2.1.2. of the June 2017 IWULA state that dirty storm water from the ash dump will be pumped to "*one ash recovery pond*", page 25 of the June 2017 IWULA refers to about eleven dirty storm water ponds, and does not mention anything about pumping. In addition, none of the documents, including the June 2017 IWULA, explain whether Khanyisa's eleven storm water catchment ponds will have liners and/or what kind of liner/s will be used. Whilst the June 2017 IWULA states that *"(t)he ash disposal area will be lined with an HDPE lining to avoid underground water contamination*",[265] it is not clear whether the catchment ponds fall within this area.[266] Even a detailed engineering drawing that includes information about liners and the storm water catchment ponds fails to clarify whether a liner will be installed under each pond.[267]

I. Failure to Comply with Public Participation Requirements

191. The public participation requirements of an application for a WUL, in particular the notification and advertisement obligations, are set out at paragraphs 54 to 59 above

192. This notwithstanding, the Appellant was not informed at the time of Anglo's initial submission of the WUL application on 26 March 2013, and the subsequent amendment of this application (to change the name of application to ACWA and to increase the capacity of the plant to 600MW) on 12 September 2015.

193. On 3 November 2016, the Appellant was given email notification by the EAP, as an I&AP, of ACWA's resubmission of a WULA for the Khanyisa Project. No notification or advertisement was placed in this regard and only a 30 day public participation period was provided. (A separate WUL application in respect of General Authorisation for the 400kV substation and power line was also apparently submitted on the same date).[268]

194. On 7 November 2016, CER submitted an objection to the DG and the EAP regarding the inadequacy of the 30 day public participation, a minimum of 60 days being required by the

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[264] Hansen Report, section 4.8.
[265] June 2017 IWULA, p. 25.
[266] Hansen Report, section 4.8.
[267] *Ibid*.; *see*, *also*, June 2017 IWULA Annexure H, PDF page 407, Ash Disposal Liner, Typical Lining Details and Stormwater Drainage Details.
[268] June 2017 IWULA Volume 4, no page number; *see*, *also*, 2 November 2016, IWULA & IWWMP, p. 1.

NWA. Subsequently, on 18 November 2017 the EAP advised that that the public participation would be extended until 23 January 2017, and that such comments should be addressed directly to the DWS. A copy of the CER's letter and EAP's response letter is included at **Annexure C.**

195. On 23 January 2017, the Appellant submitted its "Objections" within the 60 day period envisaged in terms of regulation 17(4)(a)(vi) of the NWA, and by agreement with the EAP, to the DWS, copying in the EAP.

196. Nevertheless, the Appellant was not informed of the additional February 2017 and June 2017 IWULAs, each with reports and annexures distinct from what was submitted in the EIA process and as part of the November 2016 IWULA, including but not limited to:

196.1. At least 11 additional water use activities under section 21(a),(b),(c),(g) and (i);[269]

196.2. Appendix H comprising a voluminous number of technical reports including: storm water management plan; rehabilitation plans; water balance information at the Ash Disposal Facility; civil designs reports;

196.3. Appendix E comprising: of at least 11 new specialist reports including but not limited to May 2017 Wetland Assessment Report; 2017 Ecological and Avifaunal Assessment Report;

196.4. The identification and expansion of further affected quatemary catchment from B11F to B11F and B11G;[270] and

196.5. Reference to an additional coal washing plant in Annexure H4.

197. It is evident from the RoR[271] and Aurecon's letter dated 16 June 2017, as well as the DWS 10 January Letter, that it is common cause that ACWA did not notify the public and I&AP of

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[269] June 2017 IWULA, p. 5-9 read with November 2016 IWULA & IWWMP, p.4-5. New water uses included s21a activity for Rainwater harvesting; s21b activity for the Clean Stormwater Basin; 6 new water uses for s21c (impeding or diverting the flow of water in a watercourse) and s21(i) (altering the bed banks and course or characteristics of a watercourse) activities for the proposed road crossing of a hillslope seepage wetland, Ash conveyor crossing wetland, ash disposal site, proposed power plant within a hillslope wetland, eleven stormwater pond/attenuation ponds, and power plant within 500m buffer of wetlands; s21(g) activities (i.e disposing of water that detrimentally affect the water resource) for various activities including for 11 separate stormwater ponds /attenuation ponds around the ash disposal area, with specified capacities for each; s21(e) activity (engaged in controlled activity) for irrigation of land with treated sanitary effluent.

[270] June 2017 IWULA p. 5-9 read with November 2016 IWULA & IWWMP, p.4-5.

[271] Pp. 36-37.

this further application process. DWS's recent explanation of further applications, as set out in the DWS 10 January Letter, that ACWA submitted the February 2017 and June 2017 IWULAs in response to the queries the DWS raised in respect of the January 2016 IWULA, further underscores the materiality of the information submitted during these later processes.[272]

198. Simultaneously, and after submitting the Objections, the Appellant requested various information relevant to the IWULA from the EAP, including the status and progress of the WUL. These requests included access to EIA annexures (particularly Annexure O) which revealed information on the Khanyisa plant and ash disposal sites, design drawings and co-ordinates, coal ash and water impacts, management plans, progress on the IWULA, and access to the IWULA and annexures. However the EAP refused to provide any meaningful information, including the subsequently-revealed February 2017 and June 2017 IWULAs. It also, inexplicably and unlawfully refused to advise whether or not a WUL had been issued to Khanyisa (see **Annexure C**). Nor did ACWA respond to the Objections, as required under Annexure D to the Regulations.

199. It is common cause that no advertisement or notification, as required by the public participation requirements, took place during the WUL application process:

199.1. As set out in the June 2017 IWULA "*no newspaper advertisements were placed for the WULA process, however, this was done as part of the EA amendment and BA [basic assessment] process notifying the public of the availability of the reports*."[273]

199.2. On 28 October 2016, the EAP maintained that "*the public participation for the IWULA was done together with the EA application in 2010. It's the same process which has been ongoing since then*." A copy of the EAP's letter dated 28 October 2016 is included at **Annexure C**.

200. However, no IWULA was ever made available during the EA process. The newspaper advertisements placed as part of the 2010 EIA Basic Assessment process simply referred to water uses in respect of section 21 (a), (f), (g) and (h) activities, without further details as to which specific activities would result in these section 21 activities.[274] No reference to the

[272] 10 January Letter pages 1 and 2.
[273] June 2017 IWULA, p. 82.
[274] June 2017 IWULA, p. 82.; RoR, p. 45.

availability of the IWULA is provided in the advertisement, and no IWULA was attached to the EA application. Further, this reference was not in respect of all the section 21 activities authorised in the 2017 IWULA.

201. Conversely, various independent reports attached to the 2012 and 2015 FEIR (such as the Proposed 600MW Khanyisa Power Station Waste Management Specialist Report, Mott & Mac Donald 2015 Storm Water Management Plan (Plant Drainage Re-Evaluation) Report, the Appendix O: Mott & MacDonald Preliminary technical report (pertaining to the ash liner design, and stormwater management for the ash and power island site and technical drawings) whilst relevant to the IWULA in outlining the fatal flaws of the water use and providing material on which the Geohydrological Report were based, were not utilised for the 2016-2017 IWULA process.

202. During the 2012 FEIR process, the DWS was required to advise on whether the water use would be recommended. The recommendation was never made available to the public, and only became available through the EA litigation process on 16 May 2018.[275]

203. On 7 November 2016, CER therefore addressed a letter (included at **Annexure C**) to the then Minster of DWS, copying the EAP, stating that the public participation process conducted in 2010 in respect of the EA was wholly inadequate and unsuitable to fulfil the public participation requirements for the 2016 IWULA. This letter attaches correspondence from DWS to CER in respect of another WUL application (for the Colenso IPP) confirming that the public participation and commenting period in terms of s41(4)(a)(ii) of the NWA should be no less than 60 days and that "*the* ***documentation that will be submitted as a WULA must be the same documentation that will be made available for public comment***." (emphasis added).

204. In the Annexure G of the November 2016 IWULA, confirms that the only public consultation it conducted was an email on 3 November 2016 to selected I&AP, notifying them of the November 2016 application.[276] As indicated in the preceding paragraphs, the November 2016 IWULA only included 2 specialist reports, and did not include the further 11 reports which were attached to the February and June 2017 WULA. It also did not include all water

[275] See Annexure B {Groenewald Memo] attached.
[276] November 2016, IWULA &IWWMP, Volume 1 p. 76 & Volume 2 "Public Consultation"; November 2016 IWULA, Volume 2 Appendix G

uses, co-ordinates, maps, design reports, 400kV substation and its impacts, all which was necessary for WUL issuance.

205. The DWS appears to concur that the 2010 public participation is outdated and therefore a new one is necessary for the IWULA, and that the February 2017 and June 2017 public participation report and response (which entailed no advertisement) were insufficient. The RoR refers to "*the Department requested the applicant on a letter dated 22 February 2017 to conduct Public Participation process in terms of s41(4) for a minimum period of 60 days receiving objections*" (emphasis added).[277] Further to a letter from DWS to ACWA of 4 July 2017 (see **Annexure C**), whilst the supporting documents of the public participation reports are included in the February 2017 IWULA (which included public participation in respect of 2010 EIA), ACWA is still required to submit the minutes of the meetings with I&APs other than the DWS, its response to the Appellant's objections, and copies of newspaper advertisements.

206. EAP presentation slides dated 5 September 2017 reveal that DWS had queried that the advertisements placed during the EIA process did not include all water uses. ACWA, in response, states that all water uses were included in the November 2016 IWULA. However, as set out above, not only was the notification process in respect of the November 2016 IWULA inadequate but the June 2017 WUL application differs significantly from the November 2016 application and includes additional water uses, reports, designs, co-ordinates, rehabilitation reports, etc, to which the public was not alerted prior to the issue of the WUL. In relation to the DWS's query pertaining to whether the EAP had responded to the Appellant's objections, EAP presented to the DWS that it had, when in fact, the Appellant had not received such a response.

207. On 7 December 2017, the DWS issued the WUL to ACWA but did not notify the Appellant thereof, despite being required to do so in terms of section 42(a) of the NWA. The Appellant only became aware of the issue of the WUL when the NERSA provided the CER with a copy on 28 February 2018.

208. As soon as possible thereafter (from 1 March 2018), the CER addressed numerous correspondence to the DWS to obtain *inter alia*: a formal notification for the Decision; all documents that DWS considered in issuing the WUL (including the 2017 applications and

[277] RoR, p. 36.

supporting documents); and the reasons for the Decision. This was done in terms of section 42 of the NWA, Section 5 of PAJA, as well as the PAIA provisions read together with the DWS PAIA manual. The CER objected to the lack of transparency and objectivity by the EAP during the WUL application and not being notified by the DWS in terms of s42(a) of the WUL. (See **Annexure C**)

209. On 21 June 2018, CER received (for the first time) around 8000 pages of the February 2017 and June 2017 IWULAs, and new appendices and annexures comprised of technical reports, designs, and annexures to these applications.

210. Khanyisa's WUL application and issuance process were unreasonable and procedurally unfair due to the lack of public participation and access to information, and therefore violated the provisions related to procedurally fair administrative action and public participation process guaranteed in the Constitution, PAJA, PAIA, NEMA and the NWA. Due to the actions of both the DWS and EAP, the Appellant was prevented from effectively and meaningfully participating in the decision-making process around the Khanyisa IWULA.

211. As set out above, it is only if a public participation process has already been undertaken as part of an application for environmental authorisation "*and that public participation process contains and covers <u>all issues</u> pertaining to water use activities*" (emphasis added) that the public participation process under the Regulations may be fulfilled by this preceding process "*subject to approval by the responsible authority".*[278] This was clearly not the case.

J. Material Deficiencies in the WULA Process

212. In addition to the issues set out above, the Appellant's Objections in respect of the November 2016 IWULA outlined serious deficiencies in the IWULA. These Objections, which are incorporated by reference within this Appeal, and marked as **Annexure K** include:

212.1. That only one specialist study (the 2011 Geohydrological Study) was signed by the person who compiled it, and there is no indication in this study of the areas expected to be significantly affected by the Khanyisa Project.

212.2. The use of dated information is misleading and subjective- the socio-economic assessment is based on data more than 10 years old, reference to climatic conditions

[278] Regulation 17(2) of the Regulations.

is based on data more than 25 years old (leading to incorrect assessment pertaining to floodlines and maximum precipitation), the surface water quality assessment is almost 10 years old; and the FEIRs and IWULAs evaluate groundwater quality from samples measured in 2011 against the South African Water Quality Standards (SANS 241) of 2006 instead of the SANS 241:2015 standards.

212.3. There is no information on current water management strategies.

212.4. The soil study is undated, and there are no biodiversity assessment or provincial plans related thereto.

212.5. There is no detailed assessment of employment implications, including from where it will be sourced, what skillsets are required at which stages of the Project, and the potential income to be generated.

212.6. There is no identification of specific water uses.

212.7. There are inadequate risk assessment and mitigation measures due to poor baseline data – the monitoring measures suggested in the FEIR do not constitute mitigation measures in respect of water usage.

212.8. There is no overall conclusion on the positive and negative impacts, and no necessary recommendations in respect of the Project.

213. As set out in the Objections, the critical flaws and gaps in the November 2016 IWULA are so fundamental that the IWULA fails in its entirety as a decision-supporting document. Nevertheless, and as set out above, there was no response to these Objections from ACWA (or the DWS) despite ACWA's obligations to respond under Annexure D to the Regulations. The lack of response to and/or consideration of the Objections is clear from of the RoR which records that ACWA provided no response to the Objections "*as the letter was addressed to the Department of Water and Sanitation. The letter to Groundwork will be written by the Department in relation to their objection on the content of IWULA/IWWMP*."[279]

214. The reasons for the Decision provided in the RoR make no reference to the issues raised in these Objections, using a general reference to the technical reports subject to such

[279] RoR p.37.

Objections in support of the Decision.[280] The RoR repeats language almost exactly as it appears in ACWA's June 2017 IWULA, suggesting that the DWS undertook no independent analysis.

215. In addition to the above, the lack of consideration of the implications of a 600MW plant, or even the operation of 306MW plant for the full period, under either the November 2016 IWULA or WUL, substantively undermines the WULA process. This is even more so because, following the oblique references to the power output of the Project in the RoR, it is possible that no public participation or amendment of the WULA conditions will be entailed in the expansion of the plant to a 600MW output.

K. Inadequate WUL Conditions

216. Although DWS should not have issued a WUL for Khanyisa in light of the significant risk of harm from the power plant on water resources, the conditions required by DWS for the operation of the power plant and its coal ash dump are also inadequate.

216.1. Generally, these conditions comprise references to the water uses being in line with the (erroneous) reports submitted to the DWS.[281]

216.2. The WUL conditions generally require compliance with all documents submitted in the IWULA process. Given that numerous applications were submitted with vast number of expert reports and contradictory information provided in the reports, enforcement of compliance in this regard is impossible.

216.3. Many conditions in the WUL relates to the 1:100 year flood lines being determined. However, as per groundWork's initial objections, most recent rainfall patterns (which would indicate recent weather pattern changes as a result of climate change) necessary to determine these flood lines were omitted.

216.4. There is no indication that the DG or DWS made any effort to independently assess or evaluate the information presented by Khanyisa.

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[280] RoR p.44.
[281] WUL, p.7 Condition 1.2.

216.5. There is no indication that the coal washing plant was assessed for a full environmental impact assessment. As such, there is no condition attached to the operation of this plant.

216.6. The limits for measuring compliance and enforcing exceedances for some of the pollutants (such as sulphates, manganese, iron, copper etc) are described as "traces". It is impossible to enforce exceedances if the limits are unspecified amount.[282]

217. Many of the specific WUL's conditions are deficient or problematic. For example, the WUL was issued with numerous strategies or design elements outstanding or yet to be designed, thus not allowing providing adequate information to or allowing the opportunity for comment from the DWS or public about the adequacy of these designs. For example, the WUL specifies: "*A monitoring program to determine compliance with the ground water quality reserve on the property/properties must be designed in consultation with the affected parties*."[283]

218. Other conditions are vague. For example, the WUL requires: "*Compensation measures for damage to and or mitigation measures must be recommended if avoidance or minimisation of the impacts of the proposed development is not possible or if mitigation measures fail to adequately protect the in-stream and riparian habitat*."[284] This standard does not ensure that compensation would be adequate in the event that the liner would fail.

219. The WUL conditions do not address many of the concerns identified by Mr. Hansen and Dr. Chambers. For example, the WUL requires that monitoring take place through the surface and groundwater points identified by ACWA. As mentioned, Mr. Hansen found that these points were insufficient.

220. In addition, prior to issuing the WUL, various internal staff and DWS recommended granting Khanyisa a WUL, subject to conditions that it does not appear ACWAhas complied with prior to receiving the WUL. For example, on 8 December 2016, Dr. Wietsche Roets, whilst recommending the application for registration as a General Authorisation, recommended that "*(t)he Risk Assessment Matrix, for the proposed substation, must be certified by a*

[282] WUL, p 20-23.
[283] WUL Appendix II, conditions 1.4, 4.7
[284] WUL Appendix II, condition 1.7.

suitable qualified SACNASP professional and submitted with the registration documents."[285] There is no evidence in the Record that ACWA complied with this condition. Similarly, DWS civil engineers recommended on 18 July 2017 that "*Drawings and reports that are signed by a registered engineer … must be submitted to the Department for approval prior to implementation*."[286] Yet, the Record does not indicate that ACWA has submitted any such drawing and reports.

VII. THE GROUNDS OF APPEAL

221. The significant pollution and contamination which will result (irrespective of any mitigation measures) to the ORC as a result of the location of the Ash Disposal Facility on fractured and unstable land should have been sufficient to refuse the WULA. This insurmountable obstacle will be further exacerbated by climate change impacts with negative socio-economic impacts on South Africa's vulnerable communities. Further, public participation was not conducted, and there was procedural unfairness throughout the WULA consideration process.

222. Therefore, in issuing the WUL, and authorising water use of the Khanyisa Project in violation of numerous national and international legal provisions, the DG has undermined the Constitution, failed in its duty as public trustee of South Africa's water resources under the NWA, and acted contrary to the requirements of the NWA for issuing licences.

223. Based on the information currently available to the Appellant, its Appeal against the WUL is on the following grounds, each of which is further detailed in the sub-sections below:

223.1. The Decision is in violation of the constitutional right to an environment not harmful to health or wellbeing and the duties of care entrenched in section 19 of the NWA and section 28 of NEMA.

223.2. The DG failed to take proper account of the relevant factors, as required in terms of section 27 of the NWA, when awarding the WUL.

223.3. The Decision undermines the duty of the DWS to act as public trustee of South Africa's water resources to *"ensure that water is protected, used, developed,*

[285] RoR, p. 35
[286] RoR, p. 32-33.

*conserved, managed and controlled in a sustainable and equitable manner, for the benefit of all persons and in accordance with its constitutional mandate" a*s required in terms of section 3 of the NWA *et al.*

223.4. The Decision undermines the national resource water and catchment management strategies and is therefore in breach of the obligations of the DG in terms of sections 7 and 11 of the NWA to give effect to these strategies when exercising any duty or performing any power under the NWA.

223.5. By endangering the reserve, the Decision is in breach of the DG's obligations in terms of section 18 of the NWA to give effect to the reserve when exercising any duty or performing any power under the NWA.

223.6. The Decision contravenes the NEMA Section 2 Principles, in particular but not limited to consideration of the precautionary principle,[287] the polluter pays principle,[288] the promotion of public participation,[289] and the principles generally pertaining to sustainable development.[290]

223.7. The Decision violates the right to procedurally fair administrative action in terms of section 33 of the Constitution, and section 3 of PAJA, as well as the provisions of NEMA,[291] in that *inter alia*:

223.7.1. there was inadequate notice of the nature and purpose of the application for the WUL;[292]

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[287] 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*" (NEMA section 2(4)(a)(vii)).

[288] That "(*t)he costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environmen*t" (NEMA section 2(4)(p)).

[289] In terms of NEMA section 2(4)(f), "(t)*he participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured*."

[290] In terms of NEMA section 2(4)(f), *"(t)he participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured*."

[291] Further to NEMA section 1(5) "*Any administrative process conducted or decision taken in terms of this Act must be conducted or taken in accordance with the Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000), unless otherwise provided for in this Act."*

[292] PAJA section 3(2)(b)(i).

223.7.2. there was no reasonable opportunity to make representations in respect of the application of the WUL;[293]

223.7.3. the Decision is irrational;[294]

223.7.4. the Decision is as a result of an account for irrelevant considerations and a failure to account for relevant considerations;[295] and/or

223.7.5. the Decision was taken arbitrarily or capriciously.[296]

A. The Khanyisa Project will Cause Unacceptable Water Pollution in Violation of the Constitution, the NWA and NEMA

224. As set out in detail above, the Khanyisa Project is to be located in the HPA's degraded airshed and declared air pollution priority area, and along the polluted upper ORC.

225. It is highly likely that the Khanyisa Project, by virtue in particular of the lack of regulation in relation to the size, capacity, and longevity of its Ash Disposal Facility as well as the instability of the underlying ground, inadequacy of mitigation measures and proximity to water resources of this facility, will release toxic pollution plumes into the Upper ORC and hence into the Witbank dam relied on by residents in the area - causing widespread and long-lasting harm, including increasing the exposure of communities to dangerous contaminants such as arsenic, chromium and cadmium.

226. Approval of the WUL in such circumstances is accordingly not only in violation of the constitutional right of everyone to an environment not harmful to health or well-being[297] but also in breach of the positive duty on the state to secure environmental protection through "*reasonable legislative and other measures"* in terms of section 24(b) of the Constitution. Similarly, the Decision comprises a breach of the duties of care in terms of section 19 of the NWA to prevent pollution from an activity or situation that "*has caused or is likely to cause pollution of a water resource"* and section 28 of NEMA on every person who "*causes, has*

[293] PAJA section 3(2)(b)(ii).
[294] PAJA section 6(2)(f)(ii).
[295] PAJA section 6(2)(e)(iii).
[296] PAJA section 6(2)(e)(vi).
[297] Constitution section 24(a).

caused or may cause significant pollution or degradation of the environment [to] take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment."[21]

227. As further substantiated below, the negative water and air pollution impacts arising out of the Khanyisa Project will also impact on the constitutional rights to dignity and equality of the nearby residents and downstream users who will be impacted by the pollution.

B. The Factors under Section 27 of the NWA as applied to Khanyisa should have resulted in the DG (Acting) denying the WUL.

228. Section 27 of the NWA requires the DG's consideration of all relevant factors when deciding whether to authorise a water use, including (but not limited to) the Compulsory Considerations detailed under each subheading below. As set out in Makhanya NO and another v Goede Wellington Boerdery (Pty) Limited[298] these considerations comprise a "*nonexhaustive list of several factors that have to be taken into account when issuing a licence*".

229. The summary reasoning provided in the RoR in respect of these section 27 considerations is that:

> "*The catchment is stressed which implies that the proposed may impact negatively on the water resources in terms of section 27(1)(f). However, the applicant has determined the potential impact measures and mitigation measures for avoidance or minimisation of impacts on the water resources. The electricity generated will be fed to the national grid meeting the requirements of section 27(1)(c).*"[299] (Emphasis added)

230. The specific section 27 considerations referred to in the RoR are "*the efficient and beneficial use of water in the public interest*" (section 27(c)) and "*the likely effect of the water use to be authorised on the water resource and on other water users*" (section 27(f)). It is clear from this Appeal (and, in particular, as set out below) that a reasonable assessment of these

[298] [2013] JOL 29918 (SCA).
[299] RoR p.44, section 4.5.

considerations, as well as all other relevant considerations, cannot provide justification for the issue of the WUL in the Decision.

i. Section 27(1)(a): Existing lawful water uses

231. According to the June 2017 IWULA, this "*application is for a new development, therefore there are no existing lawful water uses. Process water for the operation of the Khanyisa power station will be sourced from the EWRP, which is already in possession of a valid WUL.*"[300] The RoR similarly states that there are no existing law water uses because the application is for a new development.[301].

232. ACWA and the DWS incorrectly interpret the section 27(1)(a) NWA requirement as being confined to existing lawful water uses by the applicant and/or in respect of similar development. It was clearly the intention of the legislature to ensure that:

217.1 the cumulative impact of the proposed water uses are taken into account, i.e. what the combined impact of the proposed water uses would be on water resources when taking into consideration other existing water lawful water uses that are already impacting negatively on these resources; and

217.2 the impact of proposed water uses on existing lawful water uses in the area is properly gauged and factored into decision-making.

233. The interpretation suggested by ACWA and the DWS is nonsensical because the applicant's existing lawful water uses require no further licensing or general authorisation under the NWA and, therefore, do not fall to be assessed under section 27 of this act. Existing lawful water uses are relevant only to the extent of their impact on the relevant resource.

234. It is clear that the DWS did not adequately take into account the potential impact of the proposed project's water uses on the existing lawful water uses in the area, and their cumulative impact, and that the item in section 27(1)(a) of the NWA was therefore not adequately taken into account.

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[300] June 2017 IWULA, section 7.3.1., p. 106
[301] RoR, p. 3, section 3.3.1(a).

235. Proper consideration in terms of section 27(1)(a) would account for the many people and towns reliant on the ORC for subsistence fishing, drinking, washing, and domestic small-scale irrigation.[302] As set out at paragraph 101 above, the Upper ORC feeds into the Witbank Dam, on which eMalahleni residents rely for drinking water.

236. Because the ORC has no assimilative capacity to take on any more pollution and because of the likelihood of the pollution of this resource by the Khanyisa Project, proper consideration of this factor can only weigh against the issue of the WUL.

ii. Section 27(1)(b): The need to redress the results of past racial and gender discrimination

237. It is likely that the effects of the Khanyisa Project will diminish the access to water by previously disadvantaged or marginalised communities reliant on the ORC.

238. The Project proposes to use reclaimed mine water from the EWRP, the supplier of potable water to the eMalahleni residents "*for all required purposes and will therefore not place any burden on the regions municipal and groundwater resources*."[303] As set out from paragraph 144 above, both the FEIR and IWULA processes omit material details in this regard. They fail *inter alia*: (1) to describe the exact amount the Project intends to source per annum from the EWRP; (2) to consider how its water usage will impact or diminish EWRP's ability to supply existing users; (3) if there is insufficient supply to meet the needs of Khanyisa (and its other users), whether the EWRP would have to abstract from the ORC; and (4) how upward population trends may exacerbate competing needs for water from the EWRP.[304]

239. The oversight visit in 2015 by the Parliamentary Portfolio Committee on Human Settlement, Co-operative governance and Traditional Affairs, indicates that the eMalahleni Municipality is struggling to supply water to its residents (with specially identified areas being Ogies and Phola, which according to SA Statistics have predominantly African residents) and that the

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[302] See, e.g., A Addo-Bediako, et al., Human health risk assessment for silver catfish Schilbe intermedius Rüppell, 1832, from two impoundments in the Olifants River, Limpopo, South Africa, Water SA, Vol 40 No 4 (2014) ; Sipho Kings, A river of shit, chemicals, metals flows through our land, Mail and Guardian, April 2017, https://mg.co.za/article/2017-04-13-00-a-river-of-shit-chemicals-metals-flows-through-our-land; J. Lebepe, et al., Metal contamination of human health risk associated with the consumption of Labeo rosae from the Olifants River system, South Africa, African Journal of Aquatic Sciences 2016, 41(2): 161-170. CSIR, EUM, NOVA and SANParks, "Lower Olifants Community Health: Risks and Opportunities Project," 31, Mar. 2014, section 5.2, p.37-44, available at https://cer.org.za/wp-content/uploads/2017/09/Annexure-J-Final_Report_Lower_Olifants_31March2014_FINAL.pdf.

[303] 2012 FEIR, p. xxxix; *see*, *also*, June 2017 IWULA and IWWMP, p. 18.

[304] 2012 FEIR, p. xxii-xxiii; *see*, *also*, June 2017 IWULA and IWWMP, p. 69-70.

water quality supplied is not fit for consumption.[305] Because eMalahleni also does not have sufficient water supply, it is supplemented by the EWRP. Accordingly, the Khanyisa Project would be competing for water supply with eMalahleni which is already struggling to supply its residents.

240. There is no evidence provided to show how placing a coal-fired power plant that would produce large amounts of toxic pollution could redress the results of past racial and gender discrimination in an air- and water-shed that is already heavily polluted. This is strongly disputed. The many disadvantaged and marginalised communities reliant on the ORC would be most harmed by Khanyisa's pollution of this water resource.

241. In seeking to show compliance with the section 27(1)(b) criterion, the June 2017 IWULA states that "*the proposed development will have a definite positive impact on the quality of life of the local residents*"[306] and that *"the developer will maximise the use of local labour and service providers where possible*".[307] The June 2017 IWULA further states that: "*As the local municipality is reliant on the private sector for development initiatives to assist with the alleviation of poverty, ACWA will ensure that the job opportunities created during the construction and operational phases will benefit the people from historically disadvantaged groups*."[308] The RoR used this exact language to justify meeting this criterion, with no apparent interrogation of the validity of this claim.[309]

242. The more comprehensive analysis of the social impacts associated with the Khanyisa Project, as presented in the Social Impact Assessment appended as Annexure E to the June 2017 IWULA, is not adequately reflected in the summary in paragraph 4.10 of the main report. The Social Impact Assessment Report states that it was <u>estimated</u> during the peak construction period (6-8 months) that approximately 1200 people will be employed with an estimated 900 people during the overall construction period (4 years) and 120 during operation. However, as a large number of the population have limited skills, during the construction phase the labour force is likely to be "*specialist contractors that will bring in a number of their own staff, given the specialist nature of the work.* <u>*Opportunities for local*</u>

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[305] https://census2011.adrianfrith.com/place/868017; https://census2011.adrianfrith.com/place/868019.
[306] June 2017 IWULA, section 7.3.2., p. 107.
[307] *Ibid*.
[308] *Ibid.*
[309] RoR, p. 39, section 3.3.1(b).

labour will therefore be limited to work that does not require specialised skills"[310] (Emphasis added). Estimates of the unskilled workforce required for the Khanyisa Project are not provided. There is a risk that women will be overlooked in the process, since there is a perception that they cannot do manual labour. Whilst employment of local labour was recommended, it is indicated that during the construction period there will also be in-migration of construction workers. In-migration is expected to have negative repercussions such as the burdening of local resources, and increase in pregnancies, sexually transmitted diseases, community conflict, the breakdown of traditional systems.[311]

243. As will be shown below, the introduction of unnecessary and expensive coal plants such as the Khanyisa Project into the electricity sector will increase the cost and price of electricity. This price increase will most severely impact households at the lower end of the economic spectrum. In addition, the climate change impacts of another coal-fired power station (see further below) will negatively impact the economy, agriculture, water availability and food production, in particular in relation to the most vulnerable groups of the population. Further, as mentioned above, climate change impacts are likely to exacerbate the devastating pollution impacts from Khanyisa operations. This means that those who rely on the ORC (particularly in terms of health) for subsistence farming and fishing will be negatively impacted. This is contrary to redressing the past racial and gender discrimination.

244. It is likely that Khanyisa's pollutant effects will deplete government – and thus the taxpayers'– resources, which should otherwise be used for social development in historically-disadvantaged communities. As will be set out more fully below, the DWS has not required Khanyisa to provide financial security for its proposed water uses in terms of section 30 of the NWA. Owing to the significant potential impact of Khanyisa's proposed power station and Ash Disposal Facility on unstable and fractured ground, and the possibility of Khanyisa becoming a 'stranded asset', financial security would be necessary in order to protect increasingly scant water quantity and quality.

iii. Section 27(1)(c): Efficient and beneficial use of water in the public interest

245. In seeking to show compliance with this criterion, both the June 2017 IWULA and the RoR refer to the feeding of the generated electricity "*to the national grid, which is constantly*

[310] Annexure E: Social Impact Assessment Report, 2011, pg 45, 62-63.
[311] June 2017 IWULA Annexure E: Social Impact Assessment Report, 2011, pg 45-46.

under pressure. This will assist in terms of meeting the national power demands across the country and will assist local government to providing basic services (i.e. electricity)."[312] The June 2017 IWULA/IWWMP states that the "*Motivation for the Project*" is related to "*electricity supply in South Africa [that] has been under immense strain since 2008*" and "*load shedding [that] was implemented to stabilise the electricity system when energy capacity was not sufficient*."[313]

246. The June 2017 IWULA and the RoR further claim that "*(a)ll contaminated effluents from the system will be isolated to prevent impact on the clean catchment area; hence the public will not be affected*."[314]

247. As discussed throughout this Appeal, it is highly unlikely that the contaminants from the Khanyisa Project will be isolated. The fatal flaws of Khanyisa's Ash Disposal Facility will inevitably lead to the deterioration of water quality in the already heavily polluted Olifants River, even with the mitigation system proposed (and in terms of which the separation of the clean and dirty water systems is unclear). Climate change will only exacerbate this situation.

248. References to the supplementation of the national electricity grid in support of the Decision are inaccurate. In January 2017, Eskom confirmed that it had a surplus of 5 600MW at peak and could meet any increase in demand until 2021.[315] In a statement of August 2017 by the then Eskom Chief Executive Officer, Johnny Dladla, it was said that "*[w]hereas security of power supply was the key concern two years ago, the focus has now shifted to managing surplus capacity*".[316] Eskom's Medium Term System Adequacy Outlook for October 2017, concludes that "*the system is adequate in the short- to medium-term to meet demand from 2017 to 2022 in all the scenarios studied*".[317] South Africa's electricity demand has drastically reduced and Eskom currently has excess capacity.[318] Current

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[312] June 2017 IWULA, section 7.3.3., p. 107.; RoR p. 40, section 3.3.1 (c).
[313] June 2017 IWULA, p. 10.
[314] June 2017 IWULA, section 7.3.3., p. 10; ROR p. 40, section 3.3.1(c).
[315] See http://www.eskom.co.za/news/Pages/Jann24.aspx.
[316] See http://www.eskom.co.za/news/Pages/Augg10.aspx.
[317] See section 6, page 12 at http://www.eskom.co.za/Whatweredoing/SupplyStatus/Documents/MTSAO_Oct2017Report.pdf
[318] *See*, Energy Resource Centre, "An assessment of new coal plants in South Africa's electricity future The cost, emissions, and supply security implications of the coal IPP programme" (ERC IPP Study), (May 2018), https://cer.org.za/wp-content/uploads/2018/05/ERC-Coal-IPP-Study-Report-Finalv2-290518.pdf, p. 12.

outages experienced is as a result of Eskom's mismanagement and lack of maintenance to its current fleets, and not as a result of lack of installed capacity.[319]

249. In any event, the most recent research reveals that energy from coal is no longer required for long term energy requirement, nor is it cost effective or beneficial for the country as a whole- additional coal fired power station would impact negatively on the economy, and the job sector (quite apart from their devastating impacts on human health and well-being, air quality, the environment – including water and land, and the climate).

250. The 2010 Integrated Resource Plan for Electricity ("IRP") of the Department of Energy ("DOE"), sets out South Africa's electricity plans for the period 2010 – 2030, and it currently 'governs' South Africa's current electricity planning.[320] It is intended to be a "living *plan*" that would continuously be revised and updated as necessitated by changing circumstances.[321] The 2010 IRP however is outdated and does not reflect the current energy needs for South Africa. The IRP is currently being revised, and the most recent draft 2018 IRP, published on 27 August 2018, indicates that:

250.1. "*[w]ithout a policy intervention, all technologies included in the promulgated IRP 2010–2030 where prices have not come down like in the case of PV and wind, cease to be deployed because the least-cost option only contains PV, wind and gas*"[322]

250.2. "*Adopting no annual build limits on renewables or imposing a more stringent GHG emission reduction strategy implies that <u>no new coal power plants will be built in the future unless affordable cleaner forms of coal to power are available</u>*"[323]

250.3. *<u>"The carbon budget GHG emission mitigation strategy and the removal of annual build limits on renewables imply that no new coal units will be commissioned up to 2040</u>*"[324] (Emphasis added).

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[319] See for example https://www.fin24.com/Economy/eskom-everything-you-need-to-know-about-load-shedding-as-sa-enters-unchartered-territory-20190212
[320] Electricity Regulations on the Integrated Resource Plan 2010 -2030, published as Government Notice R400 in *Government Gazette* 34263 on 6 May 2011.
[321] Para 11, IRP 2010 – 2030.
[322] Draft 2018 IRP, pg 37.
[323] Draft 2018 IRP, pg 34
[324] Draft 2018 IRP, pg 49

251. In September 2018, the University of Cape Town's Energy Research Centre ("ERC") published a study into a just energy transition, which includes the decommissioning of Eskom's stations (the "Coal Transition Report").[325] The Coal Transition Report considers the cost and decommissioning of Eskom's fleet. It details the cost to consumers in electricity as a result of the Khanyisa and Thabametsi Projects (the "Coal IPPs") going ahead, and also the cost of not adequately transitioning from coal, and concludes *inter alia* that coal transitions are affordable for energy consumers because the transition away from coal is now the least-cost option for South Africa.

252. Minister of Energy, Jeff Radebe, was quoted in an article on 1 October 2018, stating that consumers would pay R1.90/kWh on top of the projected electricity tariff hike of R1.19 by 2030 if the two Coal IPPs go ahead, with a total cumulative cost of R23 billion- "*In the case of the two projects* [i.e. Khanyisa And Thabametsi], *they are expected to raise approximately R40-billion to build the power plants, which will be paid for by the consumer through the tariff.*"[326]

253. An ERC study in May 2018 (the "ERC IPP Report")[327] looked at the economic costs, emissions and energy security implications of having the Khanyisa and Thabametsi IPP projects, and concluded that:

> "*The result of the assessment of new coal IPPs has shown that these plants are not necessary to meet demand, and, further, that their inclusion in South Africa's electricity system will substantially raise costs in the electricity sector, and substantially increase GHG emissions over their lifetimes.*"[328]

254. In support of its conclusions, the ERC IPP Report found, *inter alia*, that:

254.1. In all modelling scenarios, new coal is not needed to meet energy demand at lowest cost;[329]

254.2. "(*T)he implications of these findings are clear. South Africa is currently facing a large surplus in generation capacity, in particular inflexible base supply capacity. Eskom*

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[325] Available at https://coaltransitions.files.wordpress.com/2018/09/coal_synthesis_final.pdf.
[326] http://www.miningweekly.com/article/radebe-outlines-additional-cost-of-coal-ipps-to-consumers-2018-10-01/rep_id:3650
[327] Energy Resource Centre, "An assessment of new coal plants in South Africa's electricity future The cost, emissions, and supply security implications of the coal IPP programme" (ERC IPP Study), (May 2018), https://cer.org.za/wp-content/uploads/2018/05/ERC-Coal-IPP-Study-Report-Finalv2-290518.pdf.
[328] ERC IPP Report, p. 37.
[329] ERC IPP Report, p. 3.

is facing a financial crisis and rising electricity prices will drive consumers away from the utility. Investments that unnecessarily increase costs in the electricity sector should be avoided."[330]

254.3. Completion of the two Coal IPPs would burden the South African consumers with additional costs of between R16.4 billion and R 27.99 billion.[331] The Khanyisa Project alone would add additional cost of R5.72 billion to R12.56 billion.[332]

254.4. *"Not only are the coal IPPs not required to meet demand, and not only do they raise costs, and increase emissions, but they also result in increasing pressure on Eskom. Building new coal plants in a situation of low demand means reducing the output of Eskom's fleet, potentially accelerating the 'utility death spiral' in which Eskom already finds itself and putting the electricity supply industry – and thus the South African economy – at risk."*[333]

254.5. "*When the coal IPPs are forced into the electricity build plan, this results in decreased use of existing coal plants (which are also cheaper than the coal IPPs), which puts raises (sic) costs overall and puts Eskom at risk.*"[334]

254.6. Including the two Coal IPPs in the electricity system will increase GHG emissions by Project proposes to use reclaimed mine water Megatons (Mt) of CO2 equivalent greenhouse gases in the best case scenario, by 205.7 Mt in the reference case scenario, and by 218 (Mt) in worst case scenario over the 30-year period between 2022 and 2052 [335] Khanyisa's contribution would be 75.9Mt CO2-eq in the reference case scenario.[336] The increase of 205.7 Mt in the reference case scenario "*amounts to a negative carbon price of R96/t CO2-eq; that is, this is the price per ton that South Africans will pay for the extra emissions if the coal IPPs are built*."[337]

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[330] ERC IPP Report, p. 5.
[331] ERC Coal IPP Report, page 4. https://cer.org.za/wp-content/uploads/2018/05/ERC-Coal-IPP-Study-Report-Finalv2-290518.pdf
[332] ERC Coal IPP Report, page 4
[333] ERC Coal IPP Report, p.8.
[334] ERC Coal IPP Report, p. 17.
[335] ERC Coal IPP Report, p. 4.
[336] ERC Coal IPP Report, p. 27.
[337] ERC Coal IPP Report, p. 4.

255. The ERC IPP Report has clarified that Khanyisa would contribute significant GHG emissions for up to 50 years[338] at a time when South Africa and the rest of the world must take urgent measures to tackle climate change. Adding new and unnecessary coal power in this context would be against the public interest.

256. The ERC's most recent 2019 report, titled "Least-cost integrated resource planning and cost-optimal climate change mitigation policy: Alternatives for the South African electricity system." ("Alternate IRP Report"), also confirms that Khanyisa is being forced into the model, and that further coal fired power station is not required in the 2018 IRP or any future energy mix for South Africa.[339] "*Renewable energy plus flexibility provides the least cost pathway for the electricity sector. No new coal or nuclear power plants feature in South Africa's electricity future, and their inclusion would require subsidies from consumers*."[340]

257. South Africa's Climate Change "White Paper", as referred to at paragraphs 80 and 81 above, acknowledges that South Africa is extremely vulnerable to the impacts of climate change; which will disproportionately affect the poor.[341] The most recent IPCC report (see paragraph 79) reveals that South Africa is a hotspot for experiencing climate change impact.

258. If Khanyisa is permitted and enabled to emit GHGs as anticipated up until 2050, this will take South Africa beyond the 'peak plateau decline' trajectory set out in its nationally determined contribution under the Paris Agreement, as emissions are required to decline from 2035, and "*near zero*" emissions are required by the second half of the century. [342]

259. Based on the above, there is a very real risk that current and proposed future coal projects will become stranded assets, unable to operate for their full anticipated lifespan. A 2016 study by the ERC titled 'The Impact of Stranding Power Sector Assets in South Africa' finds *inter alia*, that:

> "*(g)iven that the recently negotiated outcome of the UNFCCC's Paris Agreement will require commitment even from developing countries to reduce their greenhouse gas*

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[338] 2012 FEIR, p. 385.
[339] ERC Alternate IRP report, 2019 http://www.erc.uct.ac.za/sites/default/files/image_tool/images/119/Papers-2019/Alt%20IRP%20final%2007022019_2.pdf
[340] ERC Alternate IRP report, 2019, pg 8-9 http://www.erc.uct.ac.za/sites/default/files/image_tool/images/119/Papers-2019/Alt%20IRP%20final%2007022019_2.pdf
[341] National Climate Change Response White Paper, p8
[342] Climate Act Tracker rates South Africa's targets as "highly insufficient" see http://climateactiontracker.org/countries/southafrica.html.

emissions, continued investment in high-emitting infrastructure may create costly risks for South Africa in the future … Investing in new coal-fired assets in the short-term may well prove costly in the longer-term, as the risk associated with not recouping those investments due to policy shifts or technology changes grows higher, especially for plants built after Medupi."[343] (Emphasis added)

260. If Khanyisa is allowed to proceed, at a time when South Africa is committed and legally obliged to meaningfully and timeously reduce its emissions, the DWS would be authorising water use for a power plant that would be one of the worst GHG emitters in the country (and in the world),[344] and with no means of reducing these emissions.

261. In summary, there are no long-term capacity constraints on the national grid and, in any event, no need for any new coal capacity to meet South Africa's electricity needs in the long term. In fact, it would cost ordinary South Africans billions to have the Khanyisa Project. Since Khanyisa's electricity would be sold to Eskom, which is currently in a desperate financial situation, it would also add to Eskom's burden. Although these costs are passed onto consumers, the ERC IPP Report (addressed above) explains the financial impacts of the coal IPPs on Eskom .

262. On the other hand, there are real risks that Khanyisa's Ash Disposal Facility will pose significant threats to the water resources, and those that are reliant on such resources, and exacerbate greenhouse gas emissions in a time when South Africa and the rest of the world needs to take urgent action to address climate change. Additionally, completion of Khanyisa is likely to result in further job losses, and negative economic implications as consumers will bear the burden of paying for expensive electricity.

263. Accordingly, Khanyisa's water use would not be efficient or beneficial, nor would it be in the public interest.

iv. Section 27(1)(d): The socio-economic impact of the water uses

264. ACWA alleges that the Project would "*expand the transmission and distribution network to address historical imbalances, provide access to electricity for all, and support economic*

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[343] P4, http://www.erc.uct.ac.za/sites/default/files/image_tool/images/119/Papers-2016/2016-Burtonetal-Impact_stranding_power_sector_assets.pdf.
[344] P19, https://www.ipcc.ch/pdf/special-reports/srren/SRREN_FD_SPM_final.pdf.

development.[345] *In addition, the project would create approximately 1500 people during the construction period, and "approximately 120 permanent employment opportunities*."[346]

265. The June 2017 IWULA further states that:

> "*This water use would provide basic services and generate income, with economic benefit to the larger community. Economic benefits will be directly through salaries being paid to employees and the purchasing of equipment and goods locally and indirectly through taxes payable to the Government. Failure of authorisation of this water use would therefore result in service not provided, loss of income and economic opportunities to the community and government and loss of job opportunities.*"[347]

266. The RoR uses the same language as the June 2017 IWULA/IWWMP to justify meeting this criteria.[348] These figures have not been verified or questioned by the DWS, despite ACWA acknowledging that they are "*an estimation as the final numbers will be known or decided upon closer to the bid*."[349]

267. Further to paragraph 242 above, the more comprehensive analysis of the social impacts associated with the Khanyisa Project presented in the Social Impact Assessment is not adequately reflected in the summary in paragraph 4.10 of the main report of the June 2017 IWULA. Even the Social Impact Assessment Report provides that, during the construction phase *"Opportunities for local labour will therefore be limited to work that does not require specialised skills*",[350] with no estimates of the unskilled workforce required.

268. The main report in the June 2017 IWULA ACWA does not detail the negative socio-economic impacts of this employment at the Khanyisa Project including the negative repercussions of in-migration.[351] No mention is given to the harm to the health and the livelihoods of communities who depend on the ORC – and the broader economic and other implications of these impacts - as well as the irreversible harm to the environment.

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[345] June 2017 IWULA, pp. 107-8.
[346] *Ibid.*
[347] *Ibid*.
[348] RoR, p. 40. Section 3.3.1 (d).
[349] June 2017 IWULA, p. 108.
[350] June 2017 IWULA Annexure E: Social Impact Assessment Report, 2011, pg 45, 62-63.
[351] *See, 2012* FEIR, pp. xxxiii-xxxiv. According to the June 2017 IWULA Anenxure E: Social Impact Assessment Report pp 45-46 negative impacts include an influx of foreign skilled workers and other construction teams; a high unnatural growth rate in an area where municipal services are lacking and unemployment is high; unavailability of accommodation for workers and local transportation, which will in turn affect an increase in informal settlements and also negatively impact on local roads.

269. Renewable energy also has opportunities for creating jobs, and the capacity to address socio-economic issues in South Africa. Recent data on job creation in the renewable energy sector, collected by the International Renewable Energy Agency ("IRENA"), shows that there are more than 8.1 million people worldwide employed by the renewable energy industry, with China, Brazil and India leading the way.[352] The IRENA found that: "*the total number of jobs in renewables worldwide continued to rise, in stark contrast with depressed labour markets in the broader energy sector.*"[353] By way of a further example, there are 30% more jobs in a fleet comprising solar photovoltaic (PV) and wind farms than in an energy-equivalent coal fleet. This appears from a study in the DoE's Integrated Energy Plan on the job-intensity of different power-generating technologies.[354]

270. Accordingly, transitioning away from coal is not only favorable, but affordable, achievable, and least cost. The Coal Transition Report makes it clear that building new coal plants, and locking South Africa into expensive, dying infrastructure would be contrary to sustainable socio-economic development. It will also negatively affect the coal workers and unemployed not to swiftly transition towards sustainable energy systems and to support them in doing so: rather than subsidising a dying and polluting coal industry, support should go to the workers to assist the transition.[355]

271. The DWS did not consider the potential harm to health from Khanyisa's toxic air emissions, which would create significant socio-economic costs. An assessment using epidemiological data recently commissioned by the Appellant shows that Eskom's existing coal fleet results in 2,239 attributable deaths per year as well as a heavy burden of illness. The monetised costs of death and disease add up to around R33 billion ($2.4 billion) per year. This does not include the impact of the coal mines that supply Eskom. These costs are borne by the state and ultimately by South Africans. This is a prime example of the environmental injustice which is prevalent in many parts of South Africa, and of the additional health and socio-economic impacts that would result from another coal-fired power station in the Mpumalanga Highveld.[356] Additional research on the health impacts of air pollution from

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[352] International Renewable Energy Agency, *Renewable Energy and Jobs – Annual Review 2016*, http://www.irena.org/menu/index.aspx?mnu=Subcat&PriMenuID=36&CatID=141&SubcatID=2729.
[353] Ibid.
[354] http://www.engineeringnews.co.za/article/opinion-are-there-really-more-jobs-in-coal-than-in-renewables-2019-02-12/rep_id:4136
[355] See paragraph 251 above.
[356] A copy of this report is available at https://lifeaftercoal.org.za/wp-content/uploads/2017/04/Annexure-A4.pdf and can also be made available on request.

coal-fired power generation in South Africa is underway and the Appellant reserves its right to supplement the appeal with such information once it is complete.

272. Finally, ACWA does not address the potential harm from excess water from the EWRP being directed towards Khanyisa, which could be used for other more beneficial uses.

273. Khanyisa's so called socio-economic benefits (such as the unsubstantiated number of jobs to be created, and upliftment of previously disadvantaged groups) are far outweighed by the negative socio-economic impacts which will be borne by all South Africans. These include the increase in the cost to the energy system of some R20 billion (for both IPPs); which will be passed on to the consumers – despite the Khanyisa Project providing electricity that is not needed. In addition: (1) public healthcare costs will be borne by taxpayers as a result of the Khanyisa Project's air and water pollution; (2) additional pollution as a result of coal-fired power generation is likely to result in diminished well-being and quality of life for those in the HPA and reliant on the ORC, due to polluted air and water; (3) there may be a loss of livelihood by all those that are reliant on the ORC to make a living; (4) building the coal IPPs will make it much more difficult for South African to meet its international commitments to reduce GHGs- increased climate change will result in costs, burdens, and impacts of extreme weather events such as droughts, destruction of property and houses from flooding and extreme weather events; and (5) building the Khanyisa Project will delay the urgent need for South Africa to transition to cleaner technologies and associated job creation.

v. Section 27(1)(e): Any catchment management strategy applicable to the relevant water resource

274. The June 2017 IWULA notes that the catchment management strategy for the Olifants River WMA has not been developed; however, it recognises a " a *number of studies and planning initiatives have been undertaken by the DWA for this area*, "[357] including:

274.1. Development of a Water Quality Management Plan for the Witbank Dam and Middleburg Dam Catchments (1993);

274.2. Ecological Water Requirements Assessment for the Olifants River (2001);

[357] 2017 IWULA, p. 108.

274.3. Validation study for the Olifants WMA (2006);

274.4. Development of a Reconciliation Strategy for the Olifants WMA;

274.5. Classification of significant water resources in the Olifants WMA (project commenced 2011)

275. In relation to this criterion, the RoR provides that "*The proposes water use is in line with the National Water Resource Strategy (first edition, 1996) and the Internal Strategic Perspective for the Olifphant's WMA.*"[358]

276. The 1996 NWRS was revised in 2013 by the NWRS2. Yet, it appears from the ROR and WUL that the DWS only considered the NWRS1. When looking at the NWRS2, the water use for coal-fired power stations in South Africa does not accord with the principle in the NWRS2 that "*the water energy connection should receive more attention to ensure that policies that transition to a sustainable, low-carbon South African economy are achieved.*"[359] The NWRS2 envisages the target to transition into low-carbon economy by 2030, and requires that authorities give due consideration to climate change in their decision-making. The NWRS2 stresses the importance of giving due regard to building resilience and reducing vulnerability, since the poor, particularly the rural poor, are the most vulnerable to climate change: "*there is a particular imperative on water institutions to ensure the protection of the poor in relation to water, both through management systems and through appropriate infrastructure choices*."[360]

277. The NWRS2 recognises that protection of water resources is paramount, and lists the order or hierarchy of priorities to be considered when issuing a water use authorisation: (1) In line with the Constitution and the NWA, the "*highest allocation priority is afforded to water for the purposes of the Reserve*", and to make sure that all people have equitable access to water; and to sustain the aquatic ecosystem; (2). meeting international water requirements in terms of the agreements with riparian countries; (3) allocation of water for poverty eradication, improving livelihoods of the poor and marginalised, and uses contributing to racial and gender equity; (4) allocation of water for uses strategically important to the national economy including water transfer between management areas, and continued

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[358] RoR, p. 41.
[359] National Water Resources Strategy II (2nd edition) (June 2013), p55
[360] National Water Resources Strategy II (2nd edition) (June 2013), p78

availability of water to be used for electricity generation throughout the country; (5) water used for general economic purposes, which includes commercial irrigation and forestry. [361]

278. Accordingly, the NWRS2 places electricity generation as the fourth priority to be considered when issuing a water use authorisation.

279. The Integrated Water Quality Management Plan (the "IWMP"), comprising 13 reports, should be adhered to and should influence the Decision as a guideline to and framework for the water quality component of the catchment management strategy.[362] However, there is no indication that the DG considered these reports in reaching the Decision.

280. The first report of the IWMP, the 2016 Integrated Water Quality Management Plan for the Olifants River System: Inception Plan or "The Inception Plan", provides the framework for developing the catchment management strategy. The Inception Plan recognises that water resources in the Olifants River are becoming more stressed from both a water quantity and water quality point of view, due to an accelerated rate of development and the scarcity of water resources.[363]

281. The fourth report, the "Scenarios Analysis Report", was published in June 2017 and considers the need to address the main sources of pollution and intervention to address the "*Reduced load due to seepages from the mine, industrial and power station waste storage facilities and mining operations in the Upper Olifants sub-catchment*".[364] It addresses the need to reduce load from excess mine water threatening to decant or starting to flood the coal reserves in the Upper Olifants sub-catchment.[365] The Scenario Analysis Report recognises that the number of mines and the mining operations have grown significantly in the last 15 to 20 years, resulting in growth increases in excess mine water that needs to be managed, and that the river systems do not have any assimilative capacity for further salinity

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[361] National Water Resources Strategy II (2nd edition) (June 2013), p47.

[362] Sections 10 and 11 of NWA; National Water Policy, pg 52, http://www.dwa.gov.za/Documents/Policies/nwpwp.pdf; A conceptual introduction to the nature and content of the water quality management and assessment components of a catchment management strategy, http://www.dwa.gov.za/Dir_WQM/docs/INTRO%20TO%20CMS_FINAL.pdf; A guideline to the water quality management component of a catchment management strategy, p 38 http://www.dwa.gov.za/iwqs/wrmais/other/GUIDELINE_WQ_CMS_V04.pdf

[363] Inception Report, pg ix.

[364] Scenario Analysis Report, p30, http://www6.dwa.gov.za/iwqmp/Documents/Scenarios%20Analysis%20Report_Final_Edition%201_version%203_January%202018.pdf

[365] Scenario Analysis Report, vii, http://www6.dwa.gov.za/iwqmp/Documents/Scenarios%20Analysis%20Report_Final_Edition%201_version%203_January%202018.pdf

pollutant loads. In addition, the water reconciliation and dam system operation and effects of the prolonged drought are such that there is no water available in the dams to provide dilution water to maintain the salinity in the downstream rivers at a suitable level.[366]

282. The first edition of the seventh report, entitled the "Integrated Water Quality Management Plan for the Olifants River System: Upper Olifants Sub-catchment Plan ("Upper ORC Plan")" was published in August 2017. The Upper ORC Plan records that "*elevated levels of metals were recorded in the Loskop Dam water and sediment (Watson, 2001) at levels that may impact aquatic health as well as endocrine functions in human health. The river systems do not have any assimilative capacity for further salinity pollutant loads*."[367]

283. The first edition of the 13th report, entitled "Overarching IWQMP for the Olifants River System", was published in October 2017 and sets out four main goals for the management of the ORC, namely: (1) protecting water resources to maintain the goods and services that are accrued from functioning ecosystems; (2) developing water resources to support social and economic growth; (3) managing water quality and associated risks to underpin resilience; and (4) governing to ensure cooperative water resource management and development.[368] The first goal comprises two parts and envisages that "*the majority of riverine and wetland systems are maintained with the intent to improve the status of the ecosystems wherever possible*"; [and] "*water in, or from, water resources in the Olifants WMA is fit for use*."[369]

284. Consideration of the above weighs against the issue of the WUL, notwithstanding that no relevant catchment management strategy is yet in place.

vi. Section 27(1)(f): The likely effect of the water use to be authorised on the water resource and on other water users

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[366] Scenario Analysis Report, pg 11, http://www6.dwa.gov.za/iwqmp/Documents/Scenarios%20Analysis%20Report_Final_Edition%201_version%203_January%202018.pdf

[367] Upper ORC Plan, pg 14, http://www6.dwa.gov.za/iwqmp/Documents/Upper%20Olifants%20Sub-catchment%20IWQMP__Final_Edition%20%201_version%203_Jan%202018.pdf

[368] Overarching IWQMP for the Olifants River System, p 37, http://www.dwa.gov.za/projects/iwqmp/Documents/Overarching%20IWQMP%20for%20the%20Olifants%20WMA_Edition%201_Version%202_O.pdf

[369] Overarching IWQMP for the Olifants River System, p 38 http://www.dwa.gov.za/projects/iwqmp/Documents/Overarching%20IWQMP%20for%20the%20Olifants%20WMA_Edition%201_Version%202_O.pdf

285. In support of this consideration, both the June 2017 IWULA and RoR state that ACWA "*has carefully selected the appropriate location for the power plant taking into account different environmental aspects, and most importantly the detrimental impacts on watercourses and other water users*",[370] that the "*water use will not have severe negative impacts on the resource, the environment or other users as no contaminated effluents will be disposed into the environment*," and that the developer is "*also committed to adhering to the licence conditions and to implement monitoring and management measures to minimize any potential pollution from site*."[371]

286. This notwithstanding, as explained in detail above, ACWA has selected a location for its Ash Disposal Facility that presents insurmountable obstacles to its operation without substantial pollution of already highly stressed water resources. Due, in particular, to the unstable nature of Ash Site 3 from past mining, no licence condition can guard against the failure of the liner of this facility or prevent the rapid distribution of contaminants through the underlying porous soil and aquifer system. The DWS's own experts have raised significant concerns with the fatal flaw of the Ash Disposal Facility at Ash Site 3.[372] The June 2017 IWULA's failure to confirm the compacting of the ground underlying the site creates further uncertainties about the stability of the underneath soil to support the liner system.

287. In addition, the June 2017 IWULA and the RoR fail to assess the use of water from the EWRP on other water users of this facility.

288. The Wetland Specialist Report, which was not made available during the WULA process (nor made available for public comment) and was only obtained by the Appellant in late June 2018 (and made available to the Water Tribunal in February 2019), indicates significant further impacts as a result of the Khanyisa Project including the following:

288.1. The activities of the Khanyisa Project will affect six wetlands. It is only two out of the five that are said with certainty to "*not be impacted by the proposed project*".[373]

288.2. In relation to the construction of the plant and ash disposal site (when Zero Liquid Effluent Discharge (ZLED) designs have not yet been constructed), "*approximately*

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[370] June 2017 IWULA, p. 108; RoR, p. 41, Section 3.3.1 (f).
[371] June 2017 IWULA p. 108-9; RoR p. 41, Section 3.3.1 (f).
[372] See the Groenewald Memo and Bhebhe Report as referred to above.
[373] June 2017 IWULA, Appendix E: Wetland Specialist Report p. 22-26.

2.6 ha of wetland habitat will be directly affected" which will result in loss and disturbance of the wetland habitat.[374]

288.3. Stripping the vegetation will increase volumes and velocities of surface runoff, increasing erosion risk in the downslope receiving wetlands. Therefore *"a construction stormwater management plan must be developed and implemented prior to the commencement of large scale vegetation activities or construction activities and be maintained until the end of the construction phase. Such a plan should aim to minimise the transport of sediment off site as well as prevent the discharge of high velocity flows into downslope wetlands*….." As far as we are aware, no such plan has been submitted, and the construction will be unmitigated, resulting in unnecessary impacts.[375]

288.4. "During the construction phase, as activities are taking place within and in close proximity to wetlands, there is a possibility that water quality can be impaired".

288.5. During the operational phase "*Contaminated surface water runoff from the ash dam or water seeping out of the ash dam or the pollution control dams will result in water quality deterioration in receiving water resources. Overflow of pollution control dams could also occur and impact on water quality within receiving systems, which will ultimately be the Olifants River*."[376]

288.6. The most significant impacts to wetlands expected from the Khanyisa Project include: "*Water quality deterioration due to seepage of contaminants out of the ash dam entering adjacent watercourse and being transported downstream to the Olifants River*."[377]

288.7. As mentioned above, the Udall Report indicates that climate change impacts will reduce the flow of the ORC, and exasperate the pollution in the already polluted ORC. The Udall Report also indicates that law and decision makers should refrain from action and decision (such as building la long lasting Khanyisa coal power station) which would worsen the climate change effects.

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[374] Wetland Specialist Report p. 55.
[375] Ibid at p. 38.
[376] Ibid at p.41.
[377] Ibid at p.56.

288.8. Further, because the full socio economic impacts (as opposed to social impacts) as a result of the Khanyisa Project were never assessed or submitted, the impacts to downstream user and the identity of these downstream users were not submitted by ACWA, and therefore DWS could not have properly assessed this issue.

289. The above mentioned impacts weighs heavily against the issue of the WUL in the Decision.

vii. Section 27(1)(g): The class and resource quality objectives of the water resource

290. The June 2017 IWULA recognises that:

290.1 "*as per the classification study the Upper Olifants Catchment is classified as Management Class III, which is defined as heavily used (the water resource is heavily used and the overall condition of that water resource is significantly altered from its pre-development condition)*."

290.2 "*Water quality monitoring will also be implemented as a management tool in order to detect any negative quality impacts as a result of the proposed mining project. Where impacts are detected, mitigation measures will be implemented to reduce and prevent further impacts*." [378]

291. The RoR does not discuss why Khanyisa would not threaten the class and RQOs of the water resource, but instead includes a table presenting RQOs.[379]

292. As set out above, Mr. Hansen and Dr. Chambers, as well as experts from the DWS, dispute the reliability and adequacy of any proposed mitigation measures to prevent pollution of ground- and surface water and the Olifants River due to the many fatal flaws associated with the Ash Disposal Facility and, in particular, its location at Ash Site 3. Such pollution would lead to the violation of the RQOs listed in the RoR.

293. The DG, acting under the delegated powers of the Minister as trustee of water resources and in light of his obligations to give effect to the Constitution as well as to uphold the Section 2 NEMA Principles, is required *inter alia* to apply the Precautionary Principle when

[378] 2017 IWULA and IWWMP, p. 109.
[379] RoR, pp. 41-2, Table 15, Section 3.3.1 (g).

assessing this risk and, hence, to uphold "*a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions*".[380]

294. The upholding of such obligations, and application of such considerations, can only weigh against the issue of the WUL.

viii. Section 27(1)(h): Investments already made and to be made by the water user in respect of the water use in question

295. The June 2017 IWULA states that ACWA has "*invested in applying for all the necessary environmental authorisations prior to the commencement of the proposed activity*"[381].

296. ACWA has not yet commenced construction of the Khanyisa Project. Accordingly, its current investment risk is the normal risk taken by all IPP bidders, of which ACWA was aware before going through the bidding process. This is also made clear in the Request for Proposals ("RFP") in the bidding process. Any project proponent must factor-in the risks associated with not getting all required approvals, and here, ACWA has assumed this risk and must bear the costs associated with seeking to authorise its project. For ACWA and the DWS to use this as a justification for issuing a water licence would severely undermine the objectives of the NWA. In addition, if the Khanyisa Project does ultimately proceed, any investment will be paid for by the consumers through the significant increase in electricity tariffs. As set out above, this investment and project are not needed, are unnecessarily expensive compared to other electricity supply options, and will negatively impact on the economy, environment, climate, Eskom, and the people of South Africa.

297. The Khanyisa Project is one of two preferred bidders under the DOE's Coal Baseload Independent Power Producer Procurement Project. At no stage, however, is the DOE obliged to sign any agreement or to continue with the project, even after the preferred bidder is appointed or where expenditure has been incurred, since the bidders are all aware throughout the bidding process that the risk of the bidding process falls solely on the bidder's shoulders. For instance, the RFP makes clear that the DOE reserves the rights to: *amend,*

[380] Section 2(4)(a)(vii) of NEMA
[381] ROR, p 42.

modify or withdraw 1) the RFP or any part of it,[382]*; 2) terminate or amend the procedures, procurement processes or requirements detailed in this RFP during the conduct of the Coal Baseload IPP Procurement Programme;*[383] *or 3) terminate or amend the Coal Baseload IPP Procurement Programme".*[384] *These rights can be exercised "at any time without prior notice and without liability compensate or reimburse any person pursuant to such amendment, modification, withdrawal or termination"*,[385] and without *liability to compensate or reimburse any person pursuant thereto.*[386] "*no bidder, its members, contractors, or its lenders shall have any claim against the Department* ***…"***[387]

298. Preferred bidders, however, must reach commercial[388] and financial close[389] within 6 months after the announcement of the preferred bidder status, and the Khanyisa Project was announced a preferred bidder on 6 October 2016. In order to complete the process and reach commercial and financial close, the bidder must - at least one month before the scheduled commercial close - provide the DOE with the approval of all outstanding environmental consents such as a WUL, provisional atmospheric emission licence ("PAEL");[390] a generation licence from the NERSA;[391] and proof of the resolution or settlement of any appeals and/or reviews which may have been lodged or instituted against a decision to grant any environmental consent for the project[392] . Further, before a power purchase agreement (PPA) is concluded, the DOE must ensure that the PPA that is to be signed is "value for money", as required in terms of regulation 9(1) and (2) Electricity Regulation on New Generation Capacity, 2011.[393]

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[382] RFP Part A,p11, clause 1.8
[383]RFP Part A,p10, clause 1.3.
[384] RFP Part A,p10, clause 1.4
[385] RFP Part A, p10, clause 1.3.
[386] RFP Part A, p10 clause 1.3, 1.4.
[387] RFP Part A, p11, clause 1.8.
[388] "Commercial Close" is defined in the Request for Proposals, Part A as "the Effective Date as defined in the Implementation Agreement", p18. The Implementation Agreement is the agreement to be entered into between the Seller and the DOE, p28.
[389] "Financial Close" is defined in the Request for Proposals, Part A as "…the date on which the Seller, as the Borrower under the Financing Agreements, has received confirmation that all suspensive conditions to the Financing Agreements have either been met to the relevant Lender's satisfaction or have been appropriately waived by the Lenders", p27.
[390] section 5.2.2, volume 2, part 5, Request for Proposals.
[391] section 5.5.8, volume 2, part 5, Request for Proposals.
[392] section 5.2.3, volume 2, part 5, Request for Proposals.
[393] Government Notice R399 in Government Gazette 34262, dated 4 May 2011, as amended.

299. Currently, in addition to its WUL being the subject of an appeal, Khanyisa's EA is under review at the Pretoria High Court; the transfer of its PAEL is the subject of an appeal; and its NERSA electricity generation licence was opposed and remains outstanding.

300. Both the June 2017 IWULA and the RoR provide that the "*estimated investment of R15 billion into the Khanyisa Power Station project is a large investment in infrastructure and upliftment of the area. As a result various new enterprise developments will have an opportunity to develop within the local community*.""[394]

301. The vast majority of the supposed R15 billion investment would not go back into the community or be put towards upliftment. Nor is there any support for the assertion that "*various new enterprises*" will develop in the local community as a result of the Project or a discussion of the potential cost to the local community and ecosystem due to the highly likely water and air pollution from the power plant and associated ash dump.

302. Accordingly consideration of this factor cannot support the issue of the WUL.

ix. Section 27(1)(i): The strategic importance of the water use to be authorised

303. In relation to this factor, the June 2017 IWULA and RoR state that:

> "*The proposed project will have positive social and economic benefits that will be experienced on a local, provincial and national scale including:*
>
> - *Treated mine water from the EWRP is used for the power generation process, adhering to the DWS and NWA's principle of pollution prevention and re-use;*
> - *Security of employment and subsequent contribution to stimulating economic activity in the area;*
> - *An increased use of existing infrastructure; and*
> - *Production and supply of needed resources and basic services*."[395]

[394] 2017 IWULA, p. 109. RoR, p. 42, Section 3.3.1 (h).
[395] 2017 IWULA and IWWMP, p. 109.

304. As noted above, ACWA's submissions around South Africa being in a situation where supply is under "*constant pressure*" and the need of additional electricity capacity from coal are false and incorrect. Khanyisa would add to this burden, since Eskom would be forced to buy expensive electricity from Khanyisa. as opposed to other cheaper sources, which in turn would add to further financial and other pressures on and risks for Eskom. (Eskom at Khanyisa's NERSA hearing, therefore did not support these inflexible coal IPP projects.)[396] This does not entail dispute of the significance and necessity of South African households having increased access to reliable, affordable and sustainable energy -it is because South Africans must have access to affordable, reliable and sustainable energy that the Khanyisa Project should not go ahead, as the Project would not meet any of these requirements.

305. The ERC IPP Report (paragraphs 253-255 above) demonstrates that the Khanyisa Project would be an exceptionally costly source of energy and that the "*optimised least-cost build plan includes no new coal-fired power plants in the investment horizon to 2050*."[397] Moreover, electricity from coal is now far more expensive than that from renewable energy, and Khanyisa would delay the rollout of sustainable, renewable energy sources (assuming that the government has not capped renewable expansion). As the ERC IPP Report notes: "*The coal IPPs therefore not only replace investments in gas, solar, and wind in the 2020s, but because of their long-lived PPAs, also replace new, much cheaper, generation capacity in the 2040s*."[398]

306. As set out above, transitioning away from coal is not only favourable, but affordable, achievable, and least-cost. Such transition is already underway, including in South Africa. The Coal Transitions Report makes it clear that building new coal plants, and locking South Africa into expensive, dying infrastructure would be contrary to sustainable socio-economic development. It will also negatively affect the coal workers and unemployed not to swiftly transition towards sustainable energy systems and to support them in doing so: rather than subsidising a dying and polluting coal industry, support should go to the workers to assist the transition.

307. The Khanyisa Project's so called socio-economic benefits (such as the unsubstantiated number of job creation, and upliftment of previously-disadvantaged groups) will be

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[396] https://cer.org.za/wp-content/uploads/2018/03/5.-IPP-Public-Hearing-Presenation270218_final.pdf
[397] ERC IPP Report, p. 24.
[398] *Ibid*., p. 26.

completely negated and overshadowed by the extremely negative socio-economic impact which will be borne by all South Africans if the Project goes ahead. These negative impacts include the increase in the cost to the energy system of some R20 billion (for both IPPs); which will be passed on to the consumers – despite the Khanyisa Project providing electricity that is not needed. In addition: (1) public healthcare costs will be borne by taxpayers as a result of the Khanyisa Project's air and water pollution; (2) additional pollution as a result of coal-fired power generation is likely to result in diminished well-being and quality of life for those in the HPA and reliant on the ORC due to polluted air and water; (3) there may be a loss of livelihood by all those that are reliant on the ORC to make a living; (4) building the coal IPPs will make it much more difficult for South Africa to meet its international commitments to reduce GHGs as increased climate change and will result in costs, burdens and impacts of extreme weather events such as droughts, destruction of property and houses from flooding and extreme weather events; and (5) building the Khanyisa Project will delay the urgent need for South Africa to transition to cleaner technologies and associated job creation.

308. Accordingly, consideration of this factor also weighs against issuing the WUL.

x. Section 27()(k): The quality of water in the water resource which may be required for the Reserve and for meeting international obligations

309. The June 2017 IWULA provides that:

> "*This water use applied for would not negatively affect the quality or quantity of the water resource or international obligations, since the water to be used will be obtained from a water reclamation plant that treats contaminated mine water. The management measures in place will ensure that the clean water run-off is separated from the dirty water run-off and that no polluted water will reach natural water resources*."[399]

310. The RoR states that the "*reserve is outstanding. There are no international obligations on this quaternary catchment*."[400]

[399] 2017 IWULA, p. 110.
[400] RoR, p. 42.

311. The allocation of the reserve must ensure that there is sufficient availability of water for human consumption and to maintain the ecosystem with the water to be of sufficient quality for this to be effective.[401]

312. In terms of quality, as described by Dr. Chambers and Mr. Hansen (and confirmed in the Groenewald Memo and Bhebhe Report), the mitigation measures proposed at the Ash Disposal Facility to prevent pollution will not be effective, in particular because of the insurmountable problems associated with the Ash Site 3. Because of the risks associated with collapse of this site due to the highly permeable nature of the soil and aquifer, pollution from the Ash Disposal Facility poses a significant threat to the Olifants River, which is operating under extreme stress due to existing pollution and cannot afford to absorb additional pollutants.

313. In terms of quantity, the eMalahleni municipality is currently struggling to supply its residents with water - the eMalahleni Local Municipality's Briefing on 14 June 2017 (the "Briefing") indicates that the municipality has had ongoing and severe issues in supplying water to its residents.[402] Many of the issues underlying this deficient supply appear to be infrastructural, but one of the problems include lack of supply from reclamation plant. The Briefing states that "*our water supply is supplemented with 16 ML a day, (15% of our daily consumption) from a reclamation plant at Greenside. Supply from that source has been inconsistent and on average not more than 6ML a day, with a number of days zero, were received, further contributing to the shortage*."[403] Although uncertain, it is likely that the above statement refers to the EWRP (ACWA has not disclosed in the application the competing interest for the EWRP water supply).

314. The specifics of the amount of water to be abstracted by the Khanyisa Project from the EWRP were not included in the WULA process and the WUL does not allow for any water abstraction. The draft supply agreement between the EWRP and ACWA does not specify this amount, the relevant pages are missing from the June 2017 IWULA, and ACWA has not provided confirmation in this regard. According to the letter from Anglo American to ACWA, dated 16 July 2015, Anglo American had apparently undertaken to make available

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[401] NWA section 1.
[402] https://www.emalahleni.gov.za/online2/index.php/news/35-press-release/174-briefing-on-the-current-water-challenges-in-the-emalahleni-municipal-area
[403] https://www.emalahleni.gov.za/online2/index.php/news/35-press-release/174-briefing-on-the-current-water-challenges-in-the-emalahleni-municipal-area

water in the amount of 1 752 000m^3/annum to the Khanyisa Project. Page 3 of the RoR refers to a 9 October 2017 letter from ACWA confirming that the EWRP's supply, but the Appellant has not had sight of this letter.

315. Accordingly, based on the information provided, this factor does not weigh in favour of issuing the WUL.

xi. Section 27(1)(l): The probable duration for any undertaking

316. The June 2017 IWULA states that "*Authorisation for this water use is applied for a period of 40 years (from the date of approval) based on the estimated lifespan of the plant. All the infrastructure associated with the plant will be permanent or will operate until the plant is decommissioned*"[404] (Emphasis added).

317. The RoR also states that authorisation for "*this water use is applied for period of 40 years based on the estimated lifespan of the plant*"[405] (Emphasis added).

318. However, the WUL is issued for a period of 20 years to be reviewed every 5 years.[406]

319. As noted above, throughout the EA and IWULA process, ACWA has presented contradictory information concerning the size of the ash dump, the amount of coal ash to be processed, and the length of time it would designed to operate.

320. In addition to the figures set out at paragraphs 316 to 317 above, the carrying capacity of the Ash Disposal Facility appears to be designed for a shorter period. According to the June 2017 IWULA, the Ash Disposal Facility will be designed for a capacity of 5 years only despite recognising that the plant would operate for up to 40 years.[407] In addition, the June 2017 IWULA states that "*ash disposal site will be designed for a capacity of approximately 5 years and cover approximately 284 000m^2*", which is about 28 hectares[408] According to these figures, it would mean that Ash Disposal Facility is designed for a capacity of only around a fifth of the ash that it may actually produce, even if the Project entails only a

[404] IWULA, p. 109.
[405] RoR, p. 42.
[406] WUL, p.2, section 4.1.
[407] June 2017 IWULA, section 2.2.
[408] 2017 IWULA, p. 79.

306MW plant (the WUL conditions will need to be significantly altered if the Plant has a the larger footprint required for a 600MW output).

321. There is no indication that the liner and mitigation measures will be in place for any duration to address potential pollution after the Project ceases to function. Nor is there any indication that these measures will be adequate to deal with groundwater levels rising to inundate the ash dump site once artificial pumping in the area ceases. Because the Ash Disposal Facility is likely to be a source of groundwater and surface water contamination for many decades after ash deposition has ceased, avoiding these impacts would require pumping the contaminated water in perpetuity.

322. Accordingly, there is no confirmation that the Coal Ash Facility has the capacity and/or is authorised for the Project's projected lifespan over the significant period of 40 years. Of perhaps even greater concern is that the impacts from Khanyisa's water uses will remain long after the project has been decommissioned – many of them being irreversible.

323. For all the above reasons, consideration of the Compulsory Considerations listed under section 27 of the NWA (together will relevant factors) weighs heavily against the issue of the WUL in the Decision. Whilst climate change considerations feed into these factors, such climate change considerations could also be deemed a stand-alone relevant factor which, as with the considerations specifically listed under section 27, could not support the issue of the WUL.

C. The Director-General Has Failed in its Duty as Public Trustee of South Africa's water resources

324. As the public trustee of South Africa's water resources, the DG, as the Minister's delegate, was required to make the Decision in the public interest to "*ensure that water is protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner*".[409]

325. In the case of Mostert v The State,[410] the Supreme Court of Appeal confirmed that water, running in a river or stream, is to be classified as *res communes* and is "*incapable of being owned*".[411] To the extent that the state does not comply with the constitutional and statutory

[409] NWA section 3(1).
[410] *Mostert v The State*, case number: 338/2009, (SCA).
[411] Ibid, para 23.

duties of public trusteeship in respect of water resources, the courts are empowered to review state conduct and ensure compliance.[412]

326. It has been clearly demonstrated above that Khanyisa's proposed water uses and activities – which will significantly harm sensitive water resources – are not in the public interest.

327. Given that there is in fact no need for the Khanyisa Project, there is no reason that can be given to justify a project with impacts of this magnitude on South Africa's precious water resources, specifically the Upper Olifant River.

328. As such the DG has failed in his mandate as trustee of water resources, by issuing the WUL to Khanyisa.

D. The Director-General Failed to Give Effect to the National Water Resource Strategy, and Catchment Management Strategies in terms of sections 7 and 11 of NWA

329. As set out at paragraphs 274 to 284 above, the DG did not adequately consider the management strategies in place for the ORC and upper ORC and failed to give effect to existing strategies.

E. The Director-General Failed to Adequately Consider the Reserve in terms of section 18 of the NWA

330. As mentioned at paragraphs 144-147, 238-240, 274-284, and 309 - 315 above, the DG did not adequately consider the management strategies in place for the ORC and upper ORC and also failed to consider relevant factors in relation to the Reserve. As such, the DG failed to adequately consider and give effect to the Reserve.

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[412] Two instances were cited where the courts have intervened in matters where the state has failed to comply with its duties of trusteeship. See judgement of 29 June 2007 *Meepo v Kotze* , case number: 869/2006 (NCHC) and judgement of 30 November 2010, *Bengwenyama Minerals Pty Ltd v Genorah Resources,* case number: 39/10 (CC).

F. The Decision Contravenes the NEMA Section 2 Principles

331. The NEMA Section 2 Principles to be applied in deciding whether to issue the WUL are set out at paragraphs 64-69 above.

332. The Decision contravenes the Sustainable Development Principle[413] - in line with the Fuel Retailers Case,[414] considerations of sustainable development entail social, economic, and environmental factors and must include consideration of the potential impact - including cumulative effects - of the activity and its alternatives on socio-economic conditions, the significance of that potential impact, and the impact on the environment of the proliferation of the project – particularly in the HPA as well as the ORC - as well as the impact of the project on existing Projects. Not only did the Decision take little account of these impacts but, a proper consideration of such factors (as set out above) could only result in the refusal to issue the WUL.

333. More specifically, the Decision is a direction contravention of:

333.1 the risk-averse and cautious approach required by NEMA, which all organs of state must apply when making decisions that may significantly affect the environment ("the Precautionary Principle");[415]

333.2 the principle that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment ("the Polluter Pays Principle");[416]

i. The Precautionary Principle

334. Given the significant and irreversible risks that the Khanyisa Project poses for the hydrologically-sensitive ORC by storing millions of tons of toxic waste on an unstable open

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[413] NEMA section 2(4)(a).

[414] Fuel Retailers Association of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and Others 2007 (6) SA 4 (CC), in particular at pars [76] – [96].

[415] NEMA section 2(4)(a)(vii).

[416] NEMA section 2(4)(p).

cast mine above underground mine voids, a risk-averse and cautious approach would require the DG to have erred on the side of caution and refused the WUL.

335. In addition, Khanyisa's WULA did not adequately consider the impacts of climate change on the ORC which would only heighten the potential risk of the Project's pollution of the river system. As set out above, the White Paper confirms South Africa's vulnerability to the impacts of climate change, particularly in respect of water resources. The DEA's Draft 3rd National Communication to the UNFCC, confirms projected changes in rainfall for the northern interior of South Africa, which includes the Olifants River. It states that "*projections indicate general drying (but with possible slight wetting) … this is an area of considerable uncertainty*".[417]

336. The Thabametsi Judgment confirms that climate change impacts are relevant considerations for purposes of an environmental impact assessment for a proposed project with potentially significant climate impacts. Climate change considerations would, likewise, be relevant factors to be considered before deciding whether to issue an authorisation in terms of NEMA's section 27. The failure of the DG to take these impacts into account is not in line with the risk-averse and cautious approach required by NEMA's section 2.

ii. The Polluter Pays Principle

337. In line with the Polluter Pays Principle, the cost of remedying pollution and other adverse effects, failing a valid transfer of this legal liability, remains the responsibility of ACWA.

338. However, the WUL conditions fail to account for the adverse effects which will inevitably result if the necessary remediation is not undertaken. Further, as already stated, Khanyisa has not been required to provide financial security to the DWS despite the obvious risk posed to the national fiscus by the proposed Khanyisa Project. Accordingly, the state, and therefore the South African taxpayers, will have to fund the rehabilitation of the site of Khanyisa's proposed power station if Khanyisa abandons the site without conducting rehabilitation - or if the entity or entities are liquidated in future. This risk is heightened because, given the drop in prices of renewable energy and the urgent need to mitigate

[417]The Association for Water and Rural Development ("AWARD"), "The role of the Wilge River in maintaining ecosystem integrity and associated benefits in the upper Olifants Catchment," 31, Aug. 2017 ("AWARD Report"), https://cer.org.za/wp-content/uploads/2017/09/Annexure-G-Role-of-the-Wilge-AWARD-Sep-2017.pdf.Pp357 – 358.

climate change, there is also a good possibility of Khanyisa becoming a stranded asset in the near future.

339. Based on the above, the DG could only have refused the issue of the WUL following the adoption of the approach specified under the Section 2 Principles.

G. Khanyisa does not have a WUL for all Activities under section 21 of the NWA

340. Due to the low grade discard coal that is being used, Khanyisa will utilise a coal washing plant. The design, size, operation and workings of the coal washing plant have not been sufficiently assessed nor considered adequately as part of the IWULA process. This aspect has also not been addressed adequately in the RoR.

H. Conditions in the WUL are Unreasonably Vague and Unenforceable

341. As outlined in section VI.K above, the conditions for the water use outlined in the WUL are vague, unenforceable and if implemented, will not effectively mitigate the significant environmental damage to water resources stemming from the construction and operation of the Khanyisa Project.

342. Unreasonably vague administrative action – which would include the issuing of a WUL and its conditions - is unlawful.[418]

343. In particular:

343.1. Generally, these conditions comprise references to the water uses being in line with the (erroneous) reports submitted to the DWS.[419]

343.2. The WUL conditions generally require compliance with all documents submitted in the IWULA process. Given that numerous applications were submitted with vast

[418] See for instance Mpumalanga Tourism and Parks Agency and another v Barberton Mines (Pty) Ltd and others [2017] ZASCA 9 (14 March 2017).
[419] WUL, p.7 Condition 1.2.

number of expert reports and contradictory information provided in the reports, enforcement of compliance in this regard is impossible.

343.3. There is no indication that the DG or DWS made any effort to independently assess or evaluate the information presented by Khanyisa.

343.4. The recommended conditions would be more appropriately submitted prior to issuance of the WUL, to determine whether or not to issue a WUL.

I. Inadequate Public Participation

344. As discussed in paragraphs 191-211 above, the public participation process in respect of the IWULA process was wholly inadequate and unlawful. It is only if a public participation process has already been undertaken as part of an application for environmental authorisation "and that public participation process contains and covers all issues pertaining to water use activities" (Emphasis added) that the public participation process under the Regulation may fulfilled by this preceding process "subject to approval by the responsible authority". This was clearly not the case - the public participation for the 2010 EIA was wholly outdated and inadequate for the purpose of the IWULA application, and a fresh public participation process was required in respect of the February and June 2017 applications and any subsequent relevant documentation that came to light prior to the WUL issuance.

345. The RoR claims that a letter was sent to the CER on 22 February 2017 that:

> "*The [NWA] only requires that the applicant describes the water uses applied for and the activity so that the Interested and Affected Parties are provided an opportunity to object. The Responsible Authority applies his or her discretion based on the objections and the reports supplied by the applicant. The applicant is not obliged to provide the Interested and Affected Parties with the application and the reports.*"[420]

346. Not only was this 22 February Letter never received by the CER, and only became available through request for reasons in around July 2018 but this letter contradicts the DWS's own process, the Water Tribunal's judgments, and is contrary to fair and reasonable administrative action required in terms of the Constitution, PAJA and NEMA. Further,

[420] ROR, p36.

directions were given by the DWS to ACWA to conduct public participation in terms of s41(4) of the NWA on 22 February 2017.

347. In the recent 16 November 2017 judgment by the Tribunal in West Coast Environmental Protection Association v Minister: Department of Water and Sanitation and others, (the "West Coast EPA case"), [421] the applicant for the WUL alleged the extensive public participation undertaken in the EIA was sufficient to comply with the public participations requirements for the water use licence.[422] The Tribunal however, held that this would only be the case if the process were integrated in terms of section 41(5) of the NWA and, "*the responsible authority has directed that such a previous public process is sufficient*".[423]

348. The applicant for the water use licence in the West Coast EPA case further argued that s41(4) of NWA states that public participation is only necessary if the responsible authority issues a directive in this regard.[424] The Tribunal however, held that "*The high court has since clarified that this interpretation of s41(4) and 148(f) of the NWA is absurd and arbitrary*" and that "*public participation is an essential element of fair environmental decision making*."[425]

349. In the current context, Khanyisa's IWULA was not integrated with authorisations under either NEMA or the Mineral and Petrol Resources Development Act, 2002 in terms of section 41(5) of the NWA and therefore separate public participation was required. Further, DWS's own position in the case of Colenso IPP, outlined in paragraph 203 above, would indicate that "*the documentation that will be submitted as a WULA must be the same documentation that will be made available for public comment*." This clearly was not the case in respect of Khanyisa since the February and June 2017 IWULAs and the attached appendices, to which the public did not have access, differed significantly from that submitted in November 2016.

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[421] West Coast Environmental Protection Association v Minister: Department of Water and Sanitation and others 16 November 2017, WT01/17/WC
[422] Ibid paras 29 & 39.
[423] *West Coast Environmental Protection Association v Minister: Department of Water and Sanitation and others* 16 November 2017, WT01/17/WC, para 39
[424] *West Coast Environmental Protection Association v Minister: Department of Water and Sanitation and others* 16 November 2017, WT01/17/WC, para 40.
[425] *West Coast Environmental Protection Association v Minister: Department of Water and Sanitation and others* 16 November 2017, WT01/17/WC, para 44.

350. As mentioned elsewhere in the submissions, unlike the 2016 WUL, the 2017 WULA's contained new design reports, at least 9 additional reports, inclusion of new water uses as well as inclusion of 400kv substation. Whilst its full impacts were also not addressed, it appears from the 2017 reports that there is also to be a coal washing plant. In essence, the 2017 WULA contains significant volumes of information which were not subject to public participation.

351. Because of this deficient public participation process, and because the EAP failed to respond to (and the DWS failed to consider) the Appellant's Objections, the DG did not have the adequate information or comments from the public to make an informed decision in respect of the issue of the WUL.

352. In the High Court decision of Escarpment protection Group v DWS[426] it was confirmed that the responsible authority in terms of NWA is bound by procedurally fair administrative action in terms of section 3 of PAJA and section 33 of the Constitution, which require that administrator must give the person who is materially affected by an administrative action a reasonable opportunity to make representations, and to present and dispute information and arguments.

353. As mentioned above, the November 2016 IWULA did not reflect the Khanyisa Project currently proposed, and lacked the submission of vital information such as maps, design reports, co-ordinates, at least 11 additional expert reports, details on 400kv operation etc in order for DWS to properly consider this Project. When a vast number of critical and missing information was submitted through the February and June 2017 applications, this should have been subject to public participation, in terms of s41 as per the DWS''s directions, NEMA, PAJA and the Constitution.

354. Further to ACWA's failure to conduct proper public participation, in particular in respect of the two additional IWULA processes in February 2017 and June 2017, the IWULA, as well as the WUL issued, fall foul of the procedural fairness requirements of the Constitution and PAJA and should be set aside as unjust administrative action.

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[426] *Escarpment protection Group v DWS* JDR 2700 (GNP), para 23.

J. Failure to give Effect to the Right to Procedurally Fair Administrative Action

355. PAJA requires that administrative decisions are taken in a manner that is, *inter alia*, reasonable and lawful. Further to that set out above, the Decision was made in contravention of PAJA.

356. In issuing the WUL, the DG failed to take into account relevant considerations and acted unreasonably, irrationally and/or arbitrarily in contravention of sections 6 of PAJA:

    356.1 Material and relevant information was not before the DG when it took the decision to grant the WUL, and could therefore not have been considered when taking the decision to issue the WUL. This information includes sufficient details as to how Khanyisa will mitigate the subsidence that threatens to compromise the liner or how Khanyisa plans to dispose of its toxic waste after the Ash Disposal Facility reaches capacity.

    356.2 If a proper interrogation of the WULA had been conducted by the DG as required, it would be evident that there are significant gaps in the information provided by Khanyisa, that Khanyisa's assessments of the ground- and surface water hydrology is flawed, and that the measures proposed by Khanyisa to prevent pollution of the water sources on the site are wholly inadequate.

357. In light of this, the DG failed to take into account relevant considerations and acted unreasonably and irrationally by issuing a WUL in contravention of sections 6(2)(e) and 6(2)(f) of PAJA.

VIII. CONCLUSION

358. As can be seen from above, the Khanyisa operation will cause pollution to the ORC in particular because the rehabilitated mine on which the Ash Disposal Facility is to be located is prone to collapse. This risk cannot be adequately controlled by mitigation measures, with the pollution caused likely to be exacerbated due to climate change. Khanyisa's operation is also likely to have negative socio impacts, since it will lead to rise in the cost of electricity for all South Africans, and will cause more air pollution and negative health impacts in an area which is a hot spot in terms of air pollution and water pollution. These consequence lead *inter alia* to the violation of the Constitution, the NEMA principles, and PAJA and do

not meet the NWA requirements necessary for the issuance of a water use licence. The WUL therefore should have been refused under the circumstances.

359. In the premises the Appellant requests that the Appeal be upheld.

360. The Appellant also requests, in order to facilitate the orderly hearing of the Appeal, that the DG send to the offices of their representatives a detailed index of all documents provided to the Water Tribunal in terms of section 5(3)(a) of Schedule 6 to the NWA.

361. The Appellant has annexed that information referenced in the Appeal to which the Tribunal might not otherwise have access. The Appellant is happy to provide any further information referenced upon request.

362. The Appellant reserves its right to further supplement the Appeal.