



Eco-Industrial Solutions Private
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3 May 2016

Mr Bernd Oellermann / Mr Maoto Molefane
The Department of Trade and Industry
77 Meintjies Street
Sunnyside
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0002

Dear Sirs

Government Gazette, 11 March 2016 : Department of Trade & Industry Notice XXX of 2016 – Notice in terms of Section 23(7) of the Special Economic Zones Act (Act 16 of 2014) – Objection to intention to designate the South African Energy and Metallurgical Special Economic Zone in Musina/Makhado in the Province of Limpopo

Eco-Industrial Solutions (Pty) Ltd (EIS) objects to the intention of the Minister of Trade and Industry to designate the abovementioned Special Economic Zone (SEZ) on the basis of the Musina SEZ application for designation. submitted by the Limpopo Economic Development Agency (LEDA) (the “**LEDA Application**”).

EIS objects to the LEDA Application on the grounds, amongst others, that the application does not in material respects comply with the requirements and provisions of the SEZ Act.

Specifically, it is submitted that any designation of a SEZ on the basis of the LEDA Application, having regard to the superficial and incomplete information provided in the pre-feasibility study and documents titled Feasibility Report, Business Plan and Executive Summary, including in particular the purported technical feasibility report furnished in support thereof, as made available for public comment by the Department of Trade and Industry, would be not only premature, but *ultra vires* the Minister’s powers in terms of the SEZ Act for, *inter alia*, the following summarised reasons:

1. The so-called “feasibility” studies are, in their own terms, neither comprehensive nor complete (an assessment with which we entirely concur), as required in terms of the SEZ Act (on the contrary, despite a comprehensive “Table of Contents”, the information, data and detail contained in the documents are so superficial as to make the index wholly misleading);
2. The identification of the specific area/s and/or properties which LEDA seeks to include in the proposed designated SEZ is vague and confusing;
3. LEDA has not demonstrated either ownership or control over any of the properties/areas it proposes to be designated as a SEZ;
4. The suitability of the Makhado site for heavy-metal industrial development, in the foothills of the ecologically sensitive Soutpansberg, is fatally flawed;
5. In addition, LEDA has, without permission or acknowledgement, copied and used substantial portions of EIS’ proprietary project information and intellectual property relating to its LEIP Project in support of its own application, without demonstrating in

what manner such information applies to its selected SEZ sites and on a basis which could jeopardise potentially one of the most significant private-sector investments in the Limpopo Province of recent decades.

EIS' objections are elaborated on below. Given the voluminous, repetitious and superficial nature of the Feasibility Report documents and the limited time afforded for comment on the LEDA Application, EIS however reserves the right to address the issues dealt with below in summary only and to supplement its comments on the LEDA Application in the appropriate forum, should this be necessary.

1. **The feasibility studies are neither comprehensive nor complete:**

- 1.1 In terms of Section 23(3) of the SEZ Act: "*The applicant must - ... (b) submit to the Minister a comprehensive feasibility study*". (our underlining)
- 1.2 The Feasibility Study has critical information gaps, including in particular the lack of adequate site-specific baseline geophysical, geotechnical and environmental information. The document moreover does not provide any meaningful detail whatsoever in respect of the proposed metallurgical cluster at the Makhado site. Rather, it refers to an annexure to the Feasibility Study prepared by the Hong Kong Mining Exchange Company Ltd, purportedly comprising the "*Technical Feasibility*" report relating to the metallurgical complex. That annexure is itself limited to an index of select industrial plants, each of which is generically described in very large font in a 1-2 page "executive summary" that amounts to mere puffery. It is therefore impossible, in terms of this so-called "*Technical Feasibility*" report, to draw any meaningful conclusions pertaining to the feasibility or lack thereof relating to the metallurgical cluster.
- 1.3 By way of example only, the following extract taken from page 301 of the Feasibility Report highlights the severity of the information gaps: "*The types of soils likely to be found on site are known to cause design and construction problems of both earthworks and foundations. It is therefore recommended that preliminary ground investigations and site specific ground investigations be undertaken after the Feasibility Study and Business Plan to further understand the ground conditions. Thereafter foundation options can be considered.*" This is a materially flawed approach for any type of construction project.
- 1.4 A number of further (but by no means exhaustive) examples of critical issues not addressed / deficiencies in the so-called Feasibility Report are listed below:
 - There is no explanation of major and material differences between the pre-feasibility study and the Feasibility Report, where the Feasibility Report introduces new sites in Musina (Antonvilla) and Makhado;
 - The is no definitive map proposing any layout of the Musina/Makhado SEZ site. Any SEZ site layout map associated with a proper feasibility study would typically be prepared by town planners or engineers, clearly delineating the site, showing boundaries, as well as roads and plots laid out for the various envisaged plants. The layout would be based on site-specific geotechnical, environmental and logistical assessments, none of which is provided in the LEDA Application;
 - No explanation is provided for the addition of a metallurgical cluster for which the only information is an index for a few steel-related plants;
 - Background information in respect of the Hong Kong Mining Exchange Company Ltd and its "parent" company – particularly when, from the

information publicly available, it appears that HKME has no track record at all in developing projects of this nature;

- Critical biophysical baseline information, such as geotechnical, groundwater, ecological and heritage, applicable to the Antonvilla and Makhado sites;
- Socio-economic data applicable to the Makhado site;
- Surrounding land uses, such as the Air Force Base in Makhado;
- Market risk studies;
- Discussions with key stakeholders, for example Eskom and SANRAL.

1.5 **Annexure A** hereto provides more detailed comments on the purported “*Technical Feasibility*” report. For immediate purposes, the following extracts were taken from the Feasibility Report, merely to highlight some instances of the extremely poor level of detail, superficial content and critical inaccuracies contained in the Feasibility Report accompanying the LEDA Application:

- Page 360: “*The initial load required for the development is estimated at 10MVA. A new substation will be required for this new development. Currently, we don’t know whether the existing substation will be able to supply Musina SEZ development with the initial load for short term purposes.*” Without consultation with Eskom, or as a minimum, a power supply plan, there cannot possibly be a viable Feasibility Study or Business Plan.
- Page 303: “*No information is currently available on groundwater conditions at each site. It is recommended site specific ground investigation is carried out to determine the ground conditions at each site prior to preliminary design stage.*” Without preliminary design, there cannot possibly be a viable Feasibility Study or Business Plan.
- Page 8: “*For the Makhado site, the project team only conducted a high level infrastructure and site assessment.*” Indeed, not even a preliminary site assessment report is provided, again without which there cannot possibly be a viable Feasibility Study or Business Plan.)

1.6 Given that the Feasibility Report has numerous information gaps and uncertainties, the Business Plan is correspondingly defective:

- 1.6.1 the business plan is particularly incomplete and confusing having regard to the fact that, by the applicant’s own admission, only the most superficial “desktop” environmental impact and high-level site evaluation studies (which could not be identified in the documents) have been undertaken to date by LEDA in relation to the proposed sites.
- 1.6.2 it is fundamentally impossible to prepare a viable business plan at feasibility level, or even to prepare a business case at pre-feasibility level, unless site-specific geophysical, geotechnical, hydrological and ecological investigations and key stakeholder consultations have been undertaken.
- 1.6.3 equally, on legal and constitutional grounds alone, it is essential that the buy-in and support of local residents and landowners be tested and as far as possible secured, in order to determine the feasibility of

locating in these areas a metallurgical complex of the nature proposed, without attracting massive opposition from civil society;

- 1.6.4 despite the misleading heading of “*Environmental Impact Assessment ...*”, a cursory review of the content of this section of the Feasibility Report demonstrates that the information furnished is inadequate, superficial and will not withstand any professional interrogation and factual scrutiny. In fact, LEDA chose to ignore numerous cautions from their own environmental consultant report, against considering that particular Makhado area, i.e. within a protected conservation area, as a potential site for the metallurgical complex;
- 1.6.5 there is in consequence extremely limited baseline information available to the public in the Feasibility Report on which to evaluate the economic viability of the proposed SEZ sites, nor is it possible to view the financial information furnished as anything more than a crude guesstimate.

2. **The area/s / properties in respect of which the applicant seeks SEZ designation are not clearly identified, and the descriptions are vague and confusing**

- 2.1 In terms of Section 23(3): “*The applicant must - ... (c) indicate the extent to which it controls the area to be considered for designation as a Special Economic Zone;*”
- 2.2 The maps/figures showing the proposed SEZ sites are inconsistent; confusing; vague; barely legible and at times overlap with the LEIP Project site property.
- 2.3 In Musina, some figures vaguely show two sites (Figure 41), while others show three sites (Figures 78).
- 2.4 Figure 130 (Conceptual Layouts) for the SEZ shows parts of the 2013/2014 conceptual layout of the LEIP plants on what appears to be on the LEIP site property. The figure is barely legible.
- 2.5 The inclusion of the LEIP Project site property is misleading and disingenuous in the context of the LEDA Application. Refer also to paragraph 5 below.

3. **The applicant has not demonstrated ownership or control over any proposed SEZ area/s**

- 3.1 The applicant has not shown it has either ownership or control over any of the areas loosely included within its application, and therefore has no idea where it wants, could, or should locate its projects.
- 3.2 The following extract from page 444 of the “Technical Feasibility” report states in this regard the following: “*The other risks associated with the establishment of the SEZ are typical of any industrial or property development project and relates to availability of land, funds and resources to establish the SEZ as well as licencing and regulatory processes that are not aligned with the current development of the logistics industry in South Africa.*” (our underlining)

4. The suitability of the proposed Makhado site is fatally flawed

4.1 The selection of the Makhado site as suitable for heavy industrial development is fatally flawed and should have been eliminated as a potential site during an initial site screening process. LEDA's environmental consultant advised against using this site, as can be seen in section 4.2 below, and it contravenes LEDET's own conservation management plan. There is nothing in the LEDA Application to indicate that any such initial site or alternative sites' screening process was undertaken.

4.2 The following extracts were taken from Section 9 (Environmental Impact Assessment) of LEDA's Feasibility Report:

At Page 332: "In light of the fact that the information for the extended project site was received late, there was insufficient time to revise the maps and accompanying text in the environmental chapter to reflect this change. However, it must be noted that a desktop scan of the impacts of the increased study area on the environment revealed that the additional farms will extend even further into the Nzhelele Nature Reserve, cutting into the centre of the reserve. Furthermore, the additional land falls within critical biodiversity area 2, which is one of the top two most sensitive biodiversity areas required to meet the conservation targets of the province."

At Page 345: "The Limpopo Department of Economic Development, Environment & Tourism (LEDET), which is the designated Management Authority for this reserve, commissioned the preparation of a protected area management plan for the reserve in 2012...."

It must be emphasized here that the nature of the proposed development makes this highly incompatible with the objectives of a protected area. Hence, authorization to develop within this provincial reserve may be denied." Clearly, this statement shows how LEDA's application to include the Makhado site contravenes LEDET's conservation plan.

5. LEDA has copied and used EIS' LEIP Project information and proprietary intellectual property in its application

5.1 LEDA has wrongfully and unlawfully copied and used substantial portions of EIS' proprietary information and intellectual property relating to its LEIP Project in support of the LEDA Application.

5.2 In this regard, the "pre-feasibility" studies and Feasibility Report made available to the public on the dti website in connection with the LEDA Application comprise approximately **104** and **17** pages, respectively, of information uplifted directly (and in many instances verbatim) from EIS' proprietary information in respect of the LEIP Project.

5.3 It will be shown that this information was extrapolated directly from the comprehensive and detailed socio-economic, marketing and industrial feasibility studies, as well the extensive geophysical / geotechnical studies, hydrological investigations and environmental impact assessments, which have been undertaken by EIS over the past 5 years specifically for purposes of and in connection with the intended site of the Limpopo Eco-Industrial Park, located between Musina and Beitbridge.

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- 5.4 LEDA has applied such site- and project-specific information generically and generally to the Antonvilla and Makhado areas introduced in the “*Technical Feasibility*” report as sites now proposed by it for designation as a SEZ, without demonstrating in what manner information particular to the LEIP Project site is equally applicable to the Antonvilla and Makhado sites.
- 5.5 The unauthorised appropriation of and reliance by LEDA on information and data extracted from EIS’ proprietary information relating to the LEIP Project is not acknowledged by LEDA in its application.
- 5.6 On the contrary, the enormous and vital contribution by EIS and its private sector promoters to the groundwork investigations undertaken to date into the industrialisation prospects of the Musina area, in terms of the LEIP Project - including as the primary inspiration for the LEDA Application itself – is dealt with in a most casual, dismissive and peripheral manner in the Feasibility Report, which merely states that “*The private sector identified a number of opportunities in the region, and most notably the Coal to Hydrocarbons project as part of the Limpopo Eco-Industrial Park (LEIP)*.” (Page 2). There is no further elaboration on the LEIP Project elsewhere in the LEDA Application documents.
- 5.7 The LEIP Project site, together with EIS’ proposed layouts, composition and scale of the various synergistic industrial plants, infrastructure design and business ideas are collectively based on more than 250 detailed studies (conceptual, pre-feasibility and feasibility studies listed in **Annexure D**) covering all aspects of a large-scale integrated project of this nature. All such studies are proprietary to EIS, being its intellectual property. **Annexure B** provides a list of the information that was copied from EIS’ LEIP Project information, without any recognition of EIS or the LEIP Project as the source and owner thereof.
- 5.8 To the knowledge of LEDA, relevant provincial officials and the dti, EIS shared its LEIP Project information with LEDA’s officials and their contracted representatives including Mott MacDonald, and as a committed citizen of the Limpopo Province, has until recently proactively assisted and supported LEDA in formulating a SEZ strategy for the Musina area. In doing so, it was at all material times firmly understood and expected by all parties involved that the LEIP Project would be the **anchor project** of the Musina-based SEZ. That this is so was also expressly confirmed in correspondence from LEDA’s then SEZ Programme Manager on 3 March 2014, and the support letters received from dti Director-General Lionel October in both 2013 and 2014. Copies of the aforesaid letters are annexed as **Annexure C**.
- 5.9 It is understandably of great concern to EIS that, in the Musina SEZ Executive Summary (at page 12), LEDA appears to marginalise the LEIP Project, by relegating it to “*a possible third phase [is] envisaged to include the Limpopo Eco-Industrial Park (LEIP) as a petrochemical cluster of the SEZ*”. The apparent decision to implement a 3-phase SEZ development is not addressed anywhere in any of LEDA’s Application documents.
- 5.10 This is particularly concerning in light of the statement at page 219 of LEDA’s Musina SEZ Pre-Feasibility Report (section 3.5) that: “*Two possible sites have been identified for the Musina SEZ, as indicated in the map below. Due to the various sectors that this SEZ will service, both sites might have to be developed. The difference in industries also might require that the site not be co-located. For the purpose of this report the sites will be called the Limpopo*

Eco-industrial Park (LEIP) site and the Lee Family land." No explanation is given by LEDA of this fundamental change from a pre-feasibility study with a confirmed and tested site, to a feasibility study without any viable sites.

5.11 In the context of the above statements in the Musina SEZ Executive Summary and supporting documents, the inclusion of the LEIP site property and LEIP Project information in the LEDA Application is misleading and disingenuous. More importantly, however, if the foregoing indeed represents LEDA's official position vis-à-vis the rôle of the LEIP Project in any provincial SEZ designated in the Musina area of the Limpopo Province, this will not only significantly deter further private-sector investment initiatives in the LEIP Project and the Limpopo Province generally, but will cause severe prejudice and damage to EIS and LEIP. We reserve our rights in this regard.

In conclusion, it is submitted that, having regard to the poorly detailed, superficial and inaccurate information provided for public comment in the Feasibility Report, the Business Plan and the Executive Summary in support of the LEDA Application, and as also dealt with in Annexure A hereto, the intended designation by the Minister of Trade and Industry of the proposed South African Energy and Metallurgical Special Economic Zone in Musina/Makhado would not be justified and will, in all the circumstances, constitute unreasonable and unfair administrative action.

All of the rights of EIS and LEIP are hereby expressly reserved.

Thank you for the opportunity to comment.

Yours faithfully



Dr Pieter du Toit, CEO

cc. CM Keene, Mervyn Taback Inc

ANNEXURE A:

Comments on the Musina Makhado “Feasibility” Study

This document forms part of an objection letter that was submitted to the dti by Eco-Industrial Solutions (Pty) Ltd on 3rd May 2016.

Comments on the Musina Special Economic Zone Licence Application for Designation – Feasibility Study

Executive Summary

1. Page 2: *“The Feasibility Study in Musina focussed on the Agricultural, Petro-chemic and Logistics sectors as potential drivers for the establishment of an SEZ. Although the Agricultural and Petro-chemical Sectors are discussed in more detail below, these sectors are only viable in the medium to long term.”*

Comments:

- a. Why didn't the Feasibility report address the metallurgical cluster?
- b. What is the definition of the timelines and its associated issues?

2. Page 3: **“A report on the Metallurgical Cluster is attached in Annexure A of this report done by the investor Hong Kong Mining Company Exchange”**

“The feasibility study also indicated that the establishment of the Metallurgical Sector in Makhado, as part of this SEZ, is equally viable.”

Comments:

- a. Both the Feasibility and Pre-Feasibility Reports do not address the metallurgical cluster. It is therefore impossible for the Feasibility Study to comment on the viability or lack thereof, of the metallurgical cluster.
- b. The “report (Annexure A)” on the metallurgical cluster is incomplete. It provides only brief content pages for select plants.
- c. It is therefore not possible, using the documents provided as part of the application for SEZ designation, to determine the viability of the metallurgical cluster.

3. Page 4: *“The proposed Carbon to Hydrocarbon (CTHC) plant in Musina and as part of the Metallurgical Cluster in Makhado”*

Comments:

- a. This statement is confusing as it does not specify where the applicant intends to locate the CTH plant? In Musina or Makhado?

4. Page 5: *“The establishment of the petrochemical complex in the Musina area appears viable given the lack of other sources of fuel within the SADC region. It will however compete for fuel supply with other projects, notably the Jindal project in Botswana. It is recommended that a detail bankable feasibility study is undertaken by the project owners before any commitments can be made to support the initiative with a Special Economic Zone designation.”*

Comments:

- a. On what basis does the consultant recommend the private sector to undertake a “detail bankable feasibility study” while LEDA’s proposed metallurgical plants have not been assessed at either Pre-feasibility or Feasibility level?
- b. Annexure A to the “Technical Feasibility” Report is limited to tables of contents with brief technical descriptions of select plants.

5. Page 6: *“Should the development progress it is recommended that the roads authorities (South African National Roads Agency, Vhembe District Municipality, Musina Local Municipality and Makhado Local Municipality) be consulted. The consultation discussions with these road agencies should include their requirements in terms of traffic studies for the development of both sites.”*

Comments:

- a. The applicant has not undertaken the necessary consultation with key stakeholders.
- b. The views of the road agency may have played a critical role in the determination of project feasibility.
- c. The outcomes of the discussions should have been recorded and included as supporting information to the main Feasibility Report.

6. Page 6: *“assessment of economic benefits...”*

Comments:

- a. Who undertook the economic assessment?
- b. What model was used?
- c. The original economic assessment should have been provided as an appendix to the main Feasibility report as supporting information?

7. Page 7: *“low road scenario in Musina”*

Comments:

- a. Corresponding definitions of terms such as “low road” are not provided.

8. Page 8: *“For the Makhado site, the project team only conducted a high level infrastructure and site assessment. The economic benefit of the Metallurgical cluster and an assessment of the economic benefits it can bring to Makhado and Musina will be still be developed by the investor, i.e. Hong Kong Mining Exchange”*

Comments:

- a. An economic assessment of the proposed metallurgical cluster should have played an integral role in determining the viability of the project and therefore should have informed the Feasibility Report.
- b. The effects of the Metallurgical Cluster on the Makhado and Musina municipalities should also have been undertaken as part of the Feasibility Report.
- c. The investor cannot be independent as it has an interest in the undertaking of a project. The Feasibility Report had to provide an independent assessment of the economic benefits to be derived from the proposed metallurgical cluster.

9. Page 8: *“With the uncertainty of the availability of electricity with time, it is proposed that the development be done in phases and be aligned with Eskom future upgrade of electrical infrastructure.”*

Comments:

- a. Discussions with Eskom should have taken place as part of the Feasibility Report. We have indicated that the outcome of discussions with key stakeholders is critical in reaching a conclusion on Feasibility.

10. Page 9: *"the final layout and positioning of the proposed infrastructure will need to be carefully considered, so as to..." "Sites 1 and 2 under consideration for the Musina SEZ overlaps with the Nature Reserves, which needs to be further, investigated in terms of the laws and regulations governing development in such areas. It is unclear whether the Reserves have been protected in terms of law (such as the National Environmental Management Protected Areas Act of 2003)."*

Comments:

- a. The exact location and delineation of the sites are unclear; vague and confusing.
- b. There is no evidence of a clearly delineated site showing the area where the applicant is applying for SEZ designation.
- c. The Feasibility Report lacks important information that affects both the location of the site/s (?) as well as the actual layout of the plants and associated infrastructure.
- d. The identification of the legal status as well as the effect of the declared status of the Nature Reserves should have been assessed as part of the baseline information to be presented in order to enable a conclusion on project feasibility.

11. Page 9: *"The SEZ is financially feasible and is an attractive option for both funders and the government in order to create economic infrastructure and promote the development of the area."*

Comments:

- a. The above statement is flawed considering the prevailing information gaps and uncertainties applicable to the sites; the plants and their effect on the social and biophysical environment and vice versa.
- b. The Feasibility Report cannot comment on the feasibility of the metallurgical cluster as it was not addressed in the report
- c. Given the prevailing information gaps, the financial models and corresponding Business Plan are defective.

12. Page 10: *"The delay of Eskom's national grid expansion is a high risk for the SEZ, especially if industrial investors are ready but cannot start production. Eskom is currently experiencing a funding crisis and if these are not resolved the grid expansion might be curtailed. Industry respondents believe that the long term solution for electricity supply in South Africa lies with more localised power generation plants being erected in close proximity to the target user markets."*

Comments:

- a. In view of the above-mentioned statement, it is evident that the success of the Musina/Makhado SEZ is dependent on Eskom, which poses serious risks in terms of delays and potentially, a lack of power infrastructure to support the SEZ as well as escalating costs.

13. Page 10: “*The market risk assessment is therefore the key risk that has to be addressed in order to support the establishment of the Musina SEZ.*”

Comments:

- a. The market risk assessment should have informed the feasibility study. Based on studies undertaken by EIS, the development of a green field steel plant in South Africa is not financially viable.
- b. Furthermore, there is currently a worldwide oversupply of steel. The following extract was published in April 2016, by Reuters “The United States, Canada, the European Union, Japan, Mexico, South Korea, Switzerland and Turkey issued a statement on Tuesday calling for urgent action to deal with global steel overcapacity, US officials said. The statement came a day after major steel-producing countries meeting in Brussels failed to agree to measures to tackle the problem, with Washington pointing a finger at China for failing to take action to cut overcapacity. Reuters”
- c. The lack of a market risk assessment is a major information gap and it must be concluded that the study is incomplete.

TABLE OF CONTENTS

14. Pages 11-22:

Comments:

- a. The table of contents includes chapters applicable to Agro-processing (Chapter 1); Logistics (Chapter 2) and Petro-chemicals (Chapter 3) but lacks information (a chapter) on the proposed Metallurgical cluster.
- b. There is no introductory chapter.
- c. The introduction should as a minimum specifically and clearly outline:
 - i. The location of the new sites in Musina and Makhado
 - ii. The ownership, or entity controlling the new sites
 - iii. The reason for new sites compared with the sites considered in the Pre-feasibility report
 - iv. The reason for the relegation of the LEIP to a “possible third phase”
 - v. The plants and where the applicant intends to locate these plants
 - vi. The reason the socio-economic information provided in the report relates to the Musina municipality only in spite of the proposed metallurgical cluster also falling under the jurisdiction of the Makhado municipality
 - vii. The reason for the introduction of a new cluster i.e. metallurgical
 - viii. The introduction and background to the LEDA/HKMEC application
 - ix. Background and relevance of the HKMEC

- d. Chapter 12 (Marketing and Communication Strategy to Support the SEZ Programme: Musina) refers to Musina only – no mention of the Makhado site.
 - e. Chapter 13 (Risk Analysis) refers to Musina only – no mention of the Makhado site.
 - f. Annexure A is incomplete.
 - g. Annexure B was not provided for review.
 - h. Annexure C was not provided for review.
15. Page 91: “*Except for the demand from government a full market demand study must still be conducted.*”

Comment:

- a. No market study - incomplete feasibility study.

16. Page 93: “*The only constraint is to finalize and confirm the market demand.*”

Comment:

- a. Incomplete market study - incomplete feasibility study.

17. Section 3.1.1: Pages 172 to 181 Sector and Policy Specialist – Petro-chemicals.

Comment:

- a. The technical information contained in this section was taken from LEIP’s Coal to Hydrocarbons Value Chain Study that EIS commissioned in 2014.
- b. It is a direct replication of the study that EIS undertook in 2014, without any reference or credit given and is therefore plagiarism.

18. Page 172: “*The Musina SEZ CTH (coal-to-hydrocarbons) projects are planned to be constructed in the Limpopo Eco-Industrial Park (LEIP).*”

Comment:

- a. This statement is correct. That is the reason why most of the information contained in Chapter 3.1.1 of the “*Technical Feasibility*” is project information that was taken from and commissioned by EIS.
- b. EIS did not give LEDA permission to utilise its information as part of LEDA’s application for SEZ designation.
- c. Importantly, the site specific LEIP project information was applied to general sites that LEDA selected at their discretion.

19. Page 173: “*The Musina Coal to Hydrocarbons (MCTH) project team engaged the Energy Research Centre (University of Cape Town) and a local energy consultant, CMCS, to assist with the development of three specific regional scenarios.*”

Comment:

- a. The reference to “*project team*” in the above mentioned statement is a direct reference to EIS, the LEIP project developer.
- b. The correct reference* correctly states: “The LEIP Coal to Hydrocarbons (LEIP-CTH) project team engaged the Energy Research Centre (University of Cape Town) and a local energy consultant CMCS to assist with the development of three specific regional scenarios.” *Taken from Page 5 of the The Limpopo Eco-Industrial Park Coal to Hydrocarbons Value Chain Study.

20. Page 181: “*Currently the only real market analysis work done by the Limpopo Eco-Industrial Park on this sector is for the urea market and the coking coal markets.*”

Comments:

- a. False statement.
 - b. EIS has undertaken over 250 studies to date. A list thereof is provided in **Annexure D**.
21. Page 182: “*Section 3.2.1 Existing market size, structure and seasonality for urea*”

Comments:

- a. The information contained in this section was taken from EIS. EIS commissioned the study in June 2014.
- b. It is a direct replication of the study that EIS commissioned in 2014, without any reference or credit given and is therefore plagiarism.

22. Page 183: “*Section 3.2.2 Conclusions and recommendations*” “*Based upon the information, initial conclusions and recommendations regarding the realistic current and medium term market potential for a new, competitive urea supplier are provided*”

Comments:

- a. No further information is provided and the above-mentioned statement in isolation is neither a conclusion nor a recommendation.

23. Page 183: “*Section 3.3 The Coking Coal Market*”

Comments:

- a. “*Industrial Solutions based the feasibility study for the proposed coke plant*”, should read Eco-Industrial Solutions....
- b. Except for the omission, in point a. above, the information is a direct replication of the study that EIS commissioned in 2014, without any reference or credit given and is therefore plagiarism.

24. Page 183 - 186: “*Section 3.4 Summary*”

Comment:

- a. Taken from EIS’ Coal to Hydrocarbon study – plagiarism.

25. Page 186 – 189 “*Section 3.4.6 Other downstream*”

Comment:

- a. Taken from EIS’ CTL Market study - plagiarism.

26. Pages 238 – 247: Tables 22; 23; 24; 25; 28; 29; 30

Comment:

- a. Tables with information pertaining to demographic; employment; industry share of employment; percentage of individuals per monthly income category; auditor general audit outcomes for “*relevant*” municipalities; financial distress rating of relevant municipalities; gross domestic fixed investment for “*relevant*” areas. The information contained in the above-mentioned tables relate to the Musina municipality only.
- b. Why doesn’t the Feasibility Report provide the same level of information applicable to Makhado municipality, considering that the Makhado site falls within the jurisdiction of the Makhado municipality?

27. Pages 248 – 255: 8 unnumbered tables; plus Table 31 and Table 39

Comment:

- a. Tables with information pertaining to number of households; households per ward; type of dwellings; Select educational status; number of hospitals and clinics with access to water and sanitation; social programme status. The information contained in the above-mentioned tables relate to the Musina municipality only.

- b. Why doesn't the Feasibility Report provide the same level of information applicable to Makhado municipality, as provided for the Musina Municipality?

28. Pages 265 – 266: 4 unnumbered tables

Comment:

- a. Tables with information pertaining to electricity supply; heating of households; lighting of households; energy status. The information contained in the above-mentioned tables relate to the Musina municipality only.
 - b. Why is the information relevant to Makhado municipality not provided?
29. Page 266: *“The social impact of the metallurgy cluster in the area of the above is addressed through commitments that have already been provided by the prospective investors in terms of providing housing, entertainment and recreational facilities, healthcare and schooling. Basic services will be addressed as part of the planning for the Makhado site and ensure sufficient provision for water, sanitation and electricity of which the investors have committed to provide excess electricity to the local grid.”*

Comments:

- a. There is no supporting evidence of the above statement.
- b. Where are the results of the social impact assessment and the socio-economic impact assessments that should have been used to inform the investor in order for the investor to address the social impacts?
- c. Where does the investor intend to locate the housing; entertainment; recreational facilities; healthcare and schooling?
- d. How does it intend to service the housing?
- e. How many people does it intend to house?

30. Page 275: *“With regard to approach, an economic impact model was constructed that allows for the prediction of likely impacts for the bulk of the assessment categories above. This model is similar to the model used in the feasibility study for the Saldanha Industrial Development Zone (IDZ) and provides for the estimation of direct and indirect impacts.”*

Comments:

- a. Who undertook the economic modeling study?
- b. The results of the above-mentioned study should have been included as supporting information to the main Feasibility Report.
- c. Was the metallurgical cluster included in the modeling?
- d. What values were used for founding conditions, considering that geotechnical evaluations have not yet been undertaken?
- e. One of the most common reasons for project overruns is the insufficiency of site investigation data. Ground-related problems adversely affect project costs; completion time; profitability; health and safety; quality and fitness for purpose and can lead to environmental damage (Clayton, C.R.I. (2001) Managing geotechnical risk, Thomas Telford).

31. Page 278: *“In order to assess impacts it was necessary to make assumptions regarding the nature and size of businesses or tenants that are likely to be attracted to the SEZ. This was done by the feasibility research team focusing on a “middle road” or realistic scenario and a “low road” scenario in which it was assumed that investment in the SEZ would be lower than expected. The assumed tenants for each of these scenarios would be as follows:*

- Middle Road:
 - Warehousing;
 - Vehicle Distribution Centre (VDC);
 - Container yard;
 - Fresh produce handling area; and
 - Food processing facility;
- Low Road:
 - Warehousing; and
 - Container yard.”

Comments:

- a. Were the petrochemical and metallurgical clusters excluded from the modeling?

32. Page 293 - 296: Chapter 7 – Site Development

Comments:

- a. Figure 41 and Figure 42 are poor maps that one cannot use to adequately identify the exact location of the proposed sites and/or delineated boundaries.
- b. What site selection process was undertaken?
- c. What alternative sites were assessed?
- d. What criteria were used to identify a suitable site?
- e. On what basis were new sites introduced to the Feasibility Report i.e. the Makhado site?

- f. Why didn't the Makhado and Antonvilla sites form part of the Pre-feasibility study?
33. Page 293: “*More geotechnical investigations for both sites will be required in order to check what types of foundations can be adapted.*” And “*Musina Municipality is currently in the process of rezoning Antonvilla land from agricultural to residential/industrial.*”

Comments:

- a. The geotechnical study is incomplete.
- b. The site overlaps with a nature reserve.
- c. The site possibly exhibits contamination resulting from past mining activities.
- d. The site has old mine shafts.
- e. No environmental authorisation is attached or referred to while we understand that the Musina Municipality is already rezoning the farm. In the absence of the above-mentioned information, we submit that the undertaking of an application for rezoning is pre-mature.

34. Page 294: “*Antonvilla is suitable for development and conventional construction types will suffice*”

Comments:

- a. Premature statement given that the geotechnical and soil contamination assessments are incomplete.
- b. Additional issues with the Antonvilla site are:
 - i. Overlap with a nature reserve
 - ii. Proximity to the Limpopo river

- iii. Mining right applications are currently underway for the farm Antonvilla. It is not possible to accurately state whether the site is the same as that of the SEZ application given the poor quality site maps (Figure 41).

35. Page 295: “Makhado site”

Comments:

- a. Refer to comments in point numbered 32 above.
36. Page 295: “*Within the Makhado site, **only a few small wetlands are scattered throughout the study area**, while a short section of the Sand River traverses the north-eastern section of the site. The Sand River, a tributary of the Limpopo River, is considered a perennial stream but is often dry in the winter. At the time of the site visit in June, the section of the Sand River that runs through the study area was found to be dry*”

Comments:

- a. Who undertook the ecological assessment?
- b. The bold font indicates that the author was biased “*only a few small wetlands*”.
- c. Winter is not an appropriate time to undertake ecological site visits and thus the results do not represent the actual ecological conditions. We recommend that further studies are undertaken during the summer months.
- d. Map (figure 42) shows only 13 farms, instead of 14 as indicated in the text.

37. Page 296: “*The environmental pre-feasibility study of the proposed development at the Makhado site has identified several problem areas that subsequently require further and more robust investigation. If practical and effective mitigation measures cannot be implemented, then the overall project viability is questionable. Of critical concern are the following environmental issues:*

- a. *Intrusion into the protected area network;*
- b. *Detrimental effect on the biodiversity assets of the region;*
- c. *Resource use conflicts (especially with respect to land and water);*
- d. *Large-scale land transformation;*
- e. *Potential increase in pollution pathways;*
- f. *Need for social infrastructure investment;*
- g. *Integrating anticipated inflow of labour with existing communities; and*
- h. *High water requirements of the development in a water scarce area where much of the existing water resources are required for agriculture and thus food security.*

Further, more detailed, studies are required to quantify the impacts of the proposed development such that mitigation measures and alternatives can be identified before the project progresses.”

Comments:

- a. Based on the above-mentioned information, the Makhado site should have been dismissed during the initial site screening process while other sites, compatible with industrial development, should have been assessed as alternatives.
- b. The only advantage the Makhado site has is its proximity to Coal of Africa’s Makhado mine, thereby reducing transportation costs of the raw materials. However, it negates all other aspects that must be considered when selecting a site.

- c. Industrial development at the Makhado site is in direct conflict with the current land use, which is a protected area in terms of Limpopo's Conservation Plan and Protected Area Management Plan. Industrial development would also increase the demand for water in an already water scarce environment. Based on studies that EIS undertook, the proposed water source, Nzhelele dam, is already over allocated, which conflicts with the findings undertaken as part of this "Technical Feasibility" study. It is also the responsibility, especially of government, to develop industry in a manner that is sustainable and considerate of the biophysical and social environments in order to set a good example by upholding environmental management laws.
- d. Additional issues with the Makhado site are:
 - i. It is situated within two Core Conservation Areas as defined by the Vhembe Biosphere Reserve.
 - ii. It overlaps with three (3) nature reserves.
 - iii. It is located within 52 km of the Air Force Base (AFB) in Makhado. Based on EIS' discussions with the AFB in 2010, the AFB is a training ground for fighter pilots with fighter planes that drop bombs during practise sessions. It is for this reason that the AFB indicated that tall structures, typical of industrial development, would be affected by the vibrations of the bomb blasts and therefore industrial development should not be located within a 52 km radius of the AFB.

38. Page 297: "Figure 43 Geological map of the proposed site"

Comment:

- a. Which site exactly does the map refer to?

39. Page 298: "Although there is no made ground represented on the map, it can be inferred from construction around the site that this may be present on the proposed site"

Comment:

- a. Based on the above statement, it is evident that the applicant has not undertaken site specific investigations.

40. Page 301: "The types of soils likely to be found on site are known to cause design and construction problems of both earthworks and foundations.

It is therefore recommended that preliminary ground investigations and site specific ground investigations be undertaken after the Feasibility Study and Business Plan to further understand the ground conditions. Thereafter foundation options can be considered."

Comments:

- a. The above statement renders the independence of the authors highly questionable as the recommendation defies the basics of any project development process.
- b. One of the most common reasons for project overruns is the insufficiency of site investigation data. Ground-related problems adversely affect project costs, completion time, profitability, health and safety, quality and fitness for purpose, and can lead to environmental damage (Clayton, C.R.I. (2001) Managing geotechnical risk, Thomas Telford). Geotechnical Risks include the risks that relate to construction work created by the site ground conditions, and associated with planning to erect underground substructure such as earthworks, foundations, drainage and other water conveyance systems, electrical works and dams.

- c. We submit that the geotechnical information will impact on the Feasibility study as well as the Business plan and therefore has to be undertaken as part of an initial site screening process.
- d. Considering that the “soils are known to cause design and construction problems” it is imperative that the preliminary geotechnical assessment should have been used to inform both the Feasibility study and the Business plan. Thus any cost estimation process applicable to the Makhado site is flawed rendering the Business plan defective.

41. Pages 302 – 303: Figures 45; 46 and 47

Comments:

- a. It is not clear which photo/s is/are applicable to which site.
42. Page 303: “No information is currently available on groundwater conditions at each site. It is recommended site specific ground investigation is carried out to determine the ground conditions at each site prior to preliminary design stage.”

Comments:

- a. Groundwater conditions are yet another baseline parameter that should have been used to inform the Feasibility study.

43. Page 305 – Page 306: “The proposed sites were visited on the 11th and 12th of June 2015. Table 39 gives the field survey summary.” And Figure 50.

Comment:

- a. It is unclear to which site/s the information refers to.
44. Page 307: “Recommendations: Geotechnical investigation to better understand the ground conditions and suitability of the site for proposed developments. Some of the soil types likely to be found on site (weathered mudstone/sandstone) may cause design and construction problems of both earthworks and foundations. It is therefore recommended that preliminary ground investigations and site specific ground investigations be undertaken as part of feasibility study to further understand the ground conditions. Thereafter foundation options can be considered.”

Comment:

- a. The above recommendation was not effected as the geotechnical assessment did not inform the Feasibility Report.

45. Page 308: Section 8.5 “Traffic Impact Assessment – Antonvilla”

Comment:

- a. This section is misleading because traffic impact assessments were not actually undertaken as part of the Feasibility Report.
- b. The information contained in this section presents neither the existing volumes of traffic nor the impact of the proposed development. It is merely some baseline information of transport modes coupled with “snapshots” of roads and intersections taken from Google Earth.
- c. The absence of detailed site specific information is a major information gap and the level of information provided cannot inform a conclusion on project feasibility.

46. Page 317: “Section 8.5.1.4 Aviation and maritime.”

Comments:

- a. The section is incomplete as it has omitted important surrounding land uses, for example the Air Forces Base in Makhado.

47. Page 318: *“Should a Traffic Impact Assessment be required, this should be undertaken by a Professional Traffic Engineering practitioner and submitted to the roads authorities for approval.”*

Comment:

- a. A traffic impact assessment is generally required for any development with the potential to impact the volumes of traffic.

48. Page 319: *“Section 8.6 Traffic Impact Assessment – Makhado”*

Comments:

- a. The section is incomplete as it has omitted important surrounding land uses, for example the Air strip in Musina.

49. Page 324: *“Section 8.6.1.1.4 Aviation and maritime”*

Comments:

- b. The section is incomplete since important surrounding land uses were omitted, such as the Air Force Base located in Makhado.

50. Page 325: *“These facilities are not close enough to the potential development to have an impact.”*

Comments:

- a. False statement. The surrounding AFBs were not considered.
- b. The Makhado site is located within 52 km of the Air Force Base (AFB) in Makhado. Based on EIS’ discussions with the AFB in 2010, the AFB is a training ground for fighter pilots with fighter planes that drop bombs during practise sessions. It is for this reason that the AFB indicated that tall structures, typical of industrial development, would be affected by the vibrations of the bomb blasts and accordingly industrial development should not be located within a 52 km radius of the AFB.

51. Page 325: *“The roads authorities (SANRAL and municipal) should be consulted to determine the need for a Traffic Impact Assessment and for access permissions.”*

Comments:

- a. As stated above, consultation with SANRAL and other stakeholders should have been undertaken as part of the Feasibility Report.

52. Page 326: *“The locality of the development site makes it ideal for the proposed development in terms of accessibility to transportation infrastructure like rail and road”*

Comments:

- a. The above statement applies only to rail and road. It totally ignores all other pertinent issues that would render a site suitable for development, such as climate, including prevailing wind direction; geology; topography; geotechnical conditions; environmental sensitivity (flora, fauna, endemism); ecosystem services for example catchment areas; surrounding land uses; heritage value; optimal utilisation of existing infrastructure; potential for pollution to surface and ground water; existing contamination; safety issues associated with old mine shafts; access to labour force; alignment with municipal planning tools such as Integrated Development Plans and Spatial Development Frameworks.

53. Page 327 - 350: “Environmental Impact Assessment” Chapter 9

Comments:

- a. The title of this section is misleading since an actual impact assessment was not undertaken.
- b. What qualifications does the person who undertook the environmental assessment have?
- c. Is the environmental assessment practitioner registered with the South African Council for Natural and Scientific Professions?

54. Page 327: “There is also a road passing through the proposed site. The developments proposed for the site include residential and industrial.”

Comment:

- a. Where does the applicant intend to locate the residential development?
- b. How many people does it intend to house?

55. Page 328; 329; 330; 331: Figures 78; 79; 80

Comment:

- a. The figures include three sites, instead of 2, of which “site 1 and site 3” partly incorporates the LEIP property.
56. Page 332: “The proposed project site is situated in the northern part of the Limpopo Province and comprises of 7 farms.”

Comments:

- a. This contradicts information contained on Page 294, Section 7.2 “The Makhado site is comprised of fourteen farms, located 35km South West of Musina, along the N1 Toll Road.”, which states that the Makhado site consists of 14 farms.
- b. The map, Figure 42 (page 295) shows only 13 farms!
- c. Thus, the exact site location is unclear.

57. Page 332: “In light of the fact that the information for the extended project site was received late, there was insufficient time to revise the maps and accompanying text in the environmental chapter to reflect this change. However, it must be noted that a desktop scan of the impacts of the increased study area on the environment revealed that the additional farms will extend even further into the Nzhelele Nature Reserve, cutting into the centre of the reserve. Furthermore, the additional land falls within critical biodiversity area 2, which is one of the top two most sensitive biodiversity areas required to meet the conservation targets of the province”

Comments:

- a. The environmental assessor did not undertake a field assessment of the entire site.
- b. The site is fatally flawed based on its location within the Nzhelele Nature Reserve.

58. Page 344: “An investigation into the proximity of the Makhado site to formal conservation areas revealed that it overlaps with three such areas, namely:

- Nzhelele Nature Reserve
- Avarel private Nature Reserve
- Vhembe Biosphere Reserve

Comments:

- a. It is a fatal flaw to place an industrial zone in areas that have been deemed worthy of environmental protection, such as nature reserves.

59. Page 345: *“The Limpopo Department of Economic Development, Environment & Tourism (LEDET), which is the designated Management Authority for this reserve, commissioned the preparation of a protected area management plan for the reserve in 2012... It must be emphasized here that the nature of the proposed development makes this highly incompatible with the objectives of a protected area. Hence, authorization to develop within this provincial reserve may be denied.”*

Comments:

- a. The development of the Makhado site would refute the LEDET’s Protected Areas Management Plan.
- b. It would also ignore the recommendations made by the Environmental Assessment Practitioner included in the Feasibility Report.

60. Page 347: *“The Limpopo Conservation Plan (Desmet et al., 2013) also includes land management objectives for protected areas (Error! Reference source not found.), which must be taken into consideration during the planning and design of the proposed development.”*

Comment:

- a. The Limpopo Conservation Plan is another provincial plan that will refute the location of the metallurgical cluster at Makhado.
- b. If LEDA itself cannot adhere to its own provincial conservation plans, a precedent will be set for all other developers, who will ignore management plans applicable to conservation areas in Limpopo as well as the rest of South Africa.

61. Page 349: *“In light of the sensitivity of the site, it is strongly recommended that more detailed specialist studies be undertaken before the project progresses. Overlap of the project site with protected areas and important biodiversity areas makes the suitability of this site for the proposed heavy industry development highly questionable. This is further compounded by the fact that the proposed water intense development falls within a water scarce environment.”*

Comment:

- a. The above recommendation should be taken seriously and should have been regarded as fatal flaws.

62. Page 350: *“The environmental pre-feasibility study of the proposed development at the Makhado site has identified several problem areas that subsequently require further and more robust investigation.”*

Comment:

- a. It is imperative that these problem areas are investigated further, as the Feasibility study suggests, prior to applying for SEZ designation.

63. Page 350 – 352 Section “9.3 Land Use Planning”

Comment:

- a. The information contained in this section refers to the one site only.
 - b. Confusing/misleading information as other figures 78; 79 and 80 refer to 3 sites.
64. Page 360: *“The initial load required for the development is estimated at 10MVA. A new substation will be required for this new development. Currently, we don’t know whether the existing substation will be able to supply Musina SEZ development with the initial load for short term purposes.”*

Comments:

- a. Incomplete information and speculation.
- b. The outcome of discussions with Eskom should have formed part of the Feasibility study as Eskom's short, medium and long term views may pose a fatal flaw to the project.

65. Page 361: *"As of 19 June 2015, a total of thirteen (13) sites / erven have been identified for the proposed South Africa Energy Metallurgical Industrial Zone (SAEMIDZ) developments, also known as Makhado Industrial Zone..."*

Comments:

- a. Conflicts with information contained on Page 294, Section 7.2 *"The Makhado site is comprised of fourteen farms, located 35km South West of Musina, along the N1 Toll Road..."*

66. Pages 362 - 370: *"Section 9.5.1. Water Supply" "The actual monthly supply values show that 22% of the time the dam will fail to supply the demand (220 out of 1020 months fail) and Page 372: "Water to the site can be sourced from Nzhelele Reservoir and from the underground via extraction points (boreholes) from the Sand River and the Limpopo river"*

Comments:

- a. The information contained regarding Nzhelele dam does not correspond with information that EIS obtained during its investigations in 2011.
 - b. The hydrologist stated the following: *"The natural MAR in the area was recorded to be 65.7 million m³/a and the historical firm yield from the Nzhelele Dam as 24.5 million m³/a (DWAF, 2004a). The dam is mainly used to supply irrigators downstream and 29 million m³/a has been allocated to this purpose, making the dam over allocated. Due to the proximity of the LEIP development site to Makhado Coal Mine and the fact that the area surrounding the Nzhelele Dam is prime agricultural land and thus with water already being allocated to agriculture, there will be no water available from this source."*
 - c. This issue must be clarified with the Department of Water and Sanitation (DWS).
67. Page 377: *"The layout for the SEZ is divided into two zones – a highly industrialized area to the south-east of the site (reference can only be to the LEIP site (sic)), possibly on Antonville comprising several plants and a Logistics and Agricultural hub to the north-west (of the LEIP site (sic)). The industrial area comprises the following:*

- *Power plant*
- *Coal to methanol plant*
- *Waste gasification plant*
- *CTL plant*
- *Coke plant*
- *Water treatment plant*
- *Synthetic bitumen plant*
- *Cotton weaving industry"*

Comments:

- a. It is evident that the authors have made reference to their “sites” in relation to the LEIP property, but removed the LEIP wording. In fact, “*Figure 130 Conceptual Layouts for the SEZ*” depicts the above-mentioned LEIP plants located on, what appears to be the LEIP property.
- b. The above-mentioned industrial plants were taken from the LEIP demonstrating that LEIP’s project information was taken and applied to new sites in Musina (Antonvilla) and Makhado.
- c. Why are the industrial plants, suddenly planned for Antonvilla and not the Makhado site?
- d. Not all of the above-mentioned industrial plants are discussed in the “*Feasibility Study*”.

68. Page 380: “*With the uncertainty of the availability of electricity with time, it is proposed that the development be done in phases and be aligned with Eskom future upgrade of electrical infrastructure.*”

Comment:

- a. What is the applicant’s solution to this potentially fatal flaw?

69. Page 382: “*The Musina SEZ will be developed to provide support for the establishment of a variety of enterprises that provide products and services for the logistics, agro-processing and petrochemical markets.*”

Comments:

- a. Demonstrates that the applicant does intend to use LEIP project information and apply it to sites that the applicant has selected.

70. Page 386: “*Disclose their interests at the ELIDZ, other directorships, and any other area of potential conflict of interest*”

Comment:

- a. Evidence that the information was copied from a document applicable to the East London Industrial Development Zone.

71. Page 396: “*Municipal facilitation between the local authorities and tenants regarding control in calculation of rates and taxes, service quality and service levels, response times, etc*”

Comments:

- a. Does the SEZ intend to rely on the municipality?
- b. If so, for what services?
- c. What measures were taken to empower and facilitate the municipalities to cope with the new development?

72. Page 421: “*Section 11.1.1 Financial modeling and scenario planning*”

Comment:

- a. The financial modeling is not realistic based on:
 - i. The information gaps and uncertainties referred to above
 - ii. The failure to engage with various stakeholders, which have not provided input to the cost estimates
 - iii. The incomplete geotechnical assessments
 - iv. The environmental issues with the sites.

73. Page 424: *Table showing potential companies and investors in the market*

Comments:

- a. The table includes petrochemical companies, which confirms LEDA/HKMEC's intention to include petrochemicals.

74. Page 424: *"The SEZ is financially feasible and is an attractive option for both funders and the government in order to create economic infrastructure and promote the development of the area. It is recommended that more Investment Property is developed to make the total investment even more attractive and to create a higher return in investment."*

Comments:

- a. It is not possible to make the above conclusion based on the information gaps and uncertainties contained in the "Technical Feasibility" study.

75. Page 424: *"Section 11.2" Financial model for Makhado is only based on the bulk infrastructure implementation cost and the maintenance there off"*

Comment:

- a. It is impossible to evaluate the financial model without at least some indication of the infrastructure design and facilities/services that are covered by the figure mentioned.
- b. A list of infrastructure and services is required for evaluation purposes.
- c. How long will it take to provide the services?

76. Page 427: *"The 20 year financial plan with Income Statement, Balance Sheet, Cash Flow, graphs and IRR calculation is attached as Annexures in the business plan"*

Comment:

- a. The annexure was not available for review.

77. Page 428: *"The private sector based Limpopo Eco-Industrial Park (LEIP) business plan also identified an untapped opportunity in the petro-chemical sector, which could be further harnessed and grown if included in the SEZ"*

Comment:

- a. That statement is correct. The petrochemical cluster and the IP associated therewith belong to the LEIP, which was recognised as the anchor project of the Musina SEZ since 2012.
- b. LEDA had no right to utilise the LEIP project information as part of their application.

78. Page 430: *"Mission Statement - To be a node attracting agricultural and agro-processing, logistics and petro-chemicals industries into a shared services environment that makes business sense and serves to stimulate economic growth and employment opportunities."*

Comment:

- a. Confirms LEDA/HKMEC intention to include petrochemicals as part of their application.
- b. Why was the metallurgical cluster excluded?

79. Page 430: *"Section 12.2.2 SWOT: Table 54 - Challenges and Constraints"*

Comments:

- a. The table outlining Constraints is not reflective of the constraints presented in the Feasibility Report.
- b. The table does not at all address the metallurgical cluster.

80. Page 430: “Completion of a detailed feasibility study for the establishment of the coal to hydrocarbons complex. This will require a multinational petrochemical and finance partner, as the cost of such a feasibility study is estimated at US\$50 million.”

Comment:

- a. What comprises the figure US\$50 million?
 - b. How was the figure derived at?
81. Page 431: “Explore possibility of petro-chemical partner to take it to the next level”

Comment:

- a. Confirms LEDA/HKMEC’s intention to pursue the petrochemical cluster.
82. Page 431: “The pre-feasibility study has proven that significant opportunities exist around the three sectors identified, i.e. logistics, agriculture and petrochemicals. This includes the upstream value chain as well as several downstream opportunities.”

Comment:

- a. Neither the Pre-feasibility nor the Technical Feasibility discusses opportunities around the metallurgical cluster.
83. Page 432: “Performance indicators – Attracting logistics, agro-processing, petro-chemical and related industries and tenants into the SEZ” and “The SEZ provides opportunities for the logistics, agriculture and petrochemicals sectors, which include the upstream value chain as well as several downstream opportunities.”

Comment:

- a. Confirms LEDA/HKMEC intention to pursue the petrochemical cluster.
84. Page 432: “Alignment with the Musina Integrated Development Plan (IDP)”

Comment:

- a. The extract with the corresponding page numbers are required in order to verify the above statement.
 - b. Is the metallurgical cluster aligned with the IDP, SDF of Musina and Makhado?
85. Page 435: “Implement a media relationship and information campaign promoting the Musina SEZ as an investment destination and for logistics, agro-processing, petrochemical and support industry tenants.”

Comment:

- a. Confirms LEDA/HKMEC intention to pursue the petrochemical cluster.
86. Page 440: “Figure 130 – Conceptual Layouts for the SEZ”

Comment:

- a. The “site” is not located on Antonvilla. In fact, the layout indicates that the industrial plants (coke plant; CTL plant (?); bitumen plant; methanol plant; waste gasification plant and the cotton weaving plant; along with the logistics; fresh produce; food processing and vehicle distribution centre, will be located on, what appears to be the LEIP property.
- b. EIS did not provide consent for LEDA to utilise the LEIP property as part of its application for SEZ designation.
- c. The inclusion of the LEIP property as part of LEDA’s application confirms that the applicant does not and cannot demonstrate ownership of the land for which it is applying for SEZ designation.

- d. It does, however, confirm the applicant's intention to pursue the petrochemical plants.
- e. The figure is barely legible.

87. Page 444: *"The key potential risks associated with the proposed Musina SEZ have been identified. These include risks of a technical, financial and economic nature as well as local and global drivers of the Logistics and Petrochemical industries."*

Comments:

- a. The key risks have not been identified based on the information gaps and uncertainties as presented in this technical Feasibility Report.
 - b. Why does this section not address the Makhado site?
88. Page 444: *"The other risks associated with the establishment of the SEZ are typical of any industrial or property development project and relates to availability of land, funds and resources to establish the SEZ as well as licencing and regulatory processes that are not aligned with the current development of the logistics industry in South Africa."*

Comments:

- a. One cannot apply for a SEZ licence without actually knowing where one intends to place the SEZ. In accordance with the SEZ Act one has to demonstrate ownership of the area that it wishes to designate as a SEZ.
 - b. Not only does the applicant not know where it intends to plant the SEZ, but it also doesn't have surety regarding the availability of the land comprising its sites.
 - c. In addition, the adverse conditions associated with that land, for example, fatal environmental flaws on the Makhado site and geotechnical constraints.
89. Page 448: *"The assessment of the physical infrastructure, land suitability and environment did not reveal and major risk considerations that would impact negatively on the project."*

Comments:

- a. The fatal environmental flaws and geotechnical constraints as documented in the applicant's Feasibility Report are serious constraints.
90. Page 449: *"Of greater concern to the sustainability of the proposed Musina SEZ is the following: The delay of ESKOM's national grid expansion is a high risk for the SEZ, especially if Industrial investors are ready but cannot start production. ESKOM is currently experiencing a funding crisis and if these are not resolved the grid expansion might be curtailed. Industry respondents believe that the long term solution for electricity supply in South Africa lies with more localised power generation plants being erected in close proximity to the target user markets."*

Comments:

- a. What is the applicant's solution?
91. Page 450: *"Clarification on the role and function of the SEZ PMU in LEDA as well as MM PDNA's role going forward"*

Comments:

- a. Clarity is sought on PDNA's role to date.

92. Page 453: “Upon approval of the SEZ designation, the Northern Cape Provincial Government needs to appoint an SEZ Entity.”

Comment:

- a. Should be the Limpopo Provincial Government.
93. Page 455: “From the results of the Technical Feasibility Study it was concluded that a SEZ in Musina is feasible, subject to the finalisation and the promulgation of the SEZ Regulations, the allocation of sufficient funding by National Government for bulk infrastructure, the confirmation of availability of the land parcels identified and applicable incentivisation of the sector.”

Comment:

- a. Based on the “Technical Feasibility”, it is unclear where the applicant intends to develop the proposed plants. The maps showing the site location/s are inconsistent. Sometimes, it even includes the LEIP property.
- b. Most of the socio-economic information is applicable to Musina only. Makhado’s socio-economic data was not presented in the report.
- c. The Pre-feasibility study incorporated the LEIP site, with the LEIP being the anchor project of the Musina SEZ. However, since the conclusion of the Pre-feasibility studies, new sites were introduced, both in Musina (Antonvilla) as well as in Makhado.
- d. In terms of the Antonvilla site, sometimes, three sites are presented, other times two sites and other times one site only. Sometimes, the maps even incorporate the LEIP property, which has already been rezoned; registered with the surveyor general; and received environmental authorisation. Regarding the Makhado site, some figures show 13 farms while the text refers to 14 farms.
- e. Thus, the applicant does not seem sure about the location of the area that it is applying for, for SEZ designation, and it has not demonstrated control over most of the land.
- f. The Makhado site has fatal environmental flaws and geotechnical constraints. For example, the site overlaps with three nature reserves and is located between two Core Conservation Area of the Vhembe Biosphere Reserve. In fact, the report states “It must be emphasized here that the nature of the proposed development makes this highly incompatible with the objectives of a protected area” and “the impacts of the increased study area on the environment revealed that the additional farms will extend even further into the Nzhelele Nature Reserve, cutting into the centre of the reserve. Furthermore, the additional land falls within critical biodiversity area 2, which is one of the top two most sensitive biodiversity areas required to meet the conservation targets of the province “ and “Overlap of the project site with protected areas and important biodiversity areas makes the suitability of this site for the proposed heavy industry development highly questionable.”
- g. The proposed development will contravene Limpopo Province’s Conservation Plan as well as its Protected Areas Management Plan.

- h. From a geotechnical perspective, the report states “*The types of soils likely to be found on site are known to cause design and construction problems of both earthworks and foundations. It is therefore recommended that preliminary ground investigations and site specific ground investigations be undertaken after the Feasibility Study and Business Plan to further understand the ground conditions. Thereafter foundation options can be considered.*” The recommendation to undertake the necessary field investigations after the feasibility and business plans render the independence of the entire Feasibility study, highly questionable.
- i. The Pre-feasibility concluded that the LEIP, consisting of the petro-chemical cluster, would form the anchor project of the Musina SEZ. Since then, the LEIP was excluded and the metallurgical cluster was added to the Makhado site, but the document does not contain any discussion pertinent to the metallurgical cluster and/or explanation for the exclusion of the LEIP.
- j. The Feasibility report relies on its Annexure A, which comprises content pages of the various plants envisaged in Makhado provided by HKMEC. The contents of which do not constitute a conceptual study.
- k. It is submitted that based on the poor and superficial level and inaccuracies of the information presented in the Feasibility report, the granting of a SEZ licence cannot be justified and will represent unreasonable and unfair administrative action.

ANNEXURE B:

EIS LEIP Project IP

This document forms part of an objection letter that was submitted to the dti by Eco-Industrial Solutions (Pty) Ltd on 3rd May 2016.

EIS' LEIP Project information

1. "Musina Makhado Technical Feasibility Report":

- a. Page 172 – 181, "Section 3.1.1" was taken from EIS' LEIP Hydrocarbons Value Chain study
- b. Page 182 – 183, "Section 3.2.1" was taken from EIS' Urea Market Study
- c. Page 183 – 184, "Section 3.3" was taken from EIS' Coke Market Study
- d. Page 186 – 189 "Section 3.4.6 Other downstream" taken from EIS' CTL market study

2. "Musina SEZ Pre-feasibility Report":

- a. Page 99 – 173, "Section 1.10 Sector analysis Petrochemicals"" . The entire section was copied verbatim, except in "Section 1.12.4.3 Biofuels in South Africa and Limpopo" the word "Botswana" was replaced with "Limpopo. The information was taken from two studies, namely, the CTL market study and the Hydrocarbon Value Chain Study that EIS commissioned as part of the LEIP project information.

The following information was copied from the LEIP Master Plan:

- b. Page 234 – 235, "Section 4.5 National Development Initiative"
- c. Page 235, "Section 4.6 National Framework for Sustainable Development", except the term "LEIP" was replaced with "Musina SEZ"
- d. Page 237 – 239, "Section 4.8, Sector specific policies and Incentives – Petro-chemical"
- e. Page 245 – 255, "Section 4.11.1 National Waste Management Strategy", except the LEIP was replaced with "Musina SEZ"
- f. Page 246, "Section 4.11.2 Green Economy Strategy", except reference to the LEIP was removed
- g. Page 254, "Section 4.15.1 Draft Limpopo Green Economy Plan: 2011", except reference to the LEIP was removed
- h. Page 255 – 256, "Section 4.15.2 Limpopo Provincial Growth and Development Strategy, 2004/16" except 2014 was changed to 2016. Excludes the first sentence.
- i. Page 256 – 257, "Section 4.15.3 Limpopo Employment Growth and Development Plan, 2009/16", except 2014 was changed to 2016
- j. Page 257, "Section 4.15.4 LEDGP Implementation Action Plan 2010/11-2011/12", except reference to the LEIP was removed
- k. Page 257, "Section 4.15.5 Industrial Development Fund"
- l. Page 257 – 258, "Section 4.15.6 Green Economy Plan", except reference to the LEIP was removed
- m. Page 263 – 264, "Section 4.15.9 Limpopo Economic Development Strategy.

ANNEXURE C:

LEIP Letters of Support from the DTI and LEDA

This document forms part of an objection letter that was submitted to the dti by Eco-Industrial Solutions (Pty) Ltd on 3rd May 2016.



ROOTED IN THE FUTURE

The CEO
Eco-Industrial Solutions
P.O. Box 3318
Modimolle
0510

Attention: Dr. Pieter du Toit

LEDA CONTINUED SUPPORT FOR THE LEIP

Limpopo Eco-Industrial Park (LEIP) was developed in response to the Limpopo Government's call to private sector to develop manufacturing and mineral beneficiation projects in order to develop local industrial capacity, create quality jobs and add value to the vast mineral resources in the province, particularly coal and platinum. The LEIP is conceptualized in support of the following provincial policy framework:

1. Limpopo Employment Growth and Development Plan
2. Limpopo Five Year Industrial Master Plan
3. Limpopo Mining and Mineral Beneficiation Strategy
4. Vhembe District Municipality Spatial Development Framework and Integrated Development Plan
5. Musina Local Municipality Spatial Development Framework and Integrated Development Plan

The LEIP is in support of the New Growth Path and the National Development Plan's call for public-private partnerships in pursuing an industrialized development trajectory. The Limpopo Economic Development Agency is finalizing a memorandum of understanding with Eco-Industrial Solutions for the planning, implementation and management of the LEIP within the Musina Special Economic Zone, still to be designated.

The LEIP was introduced to the Limpopo Exco. Leggotla in January 2011. LEDA together with other government agencies and departments in Limpopo province has supported the conceptual development process of the LEIP over the past three years. LEDA would like to conclude a partnership agreement with Eco-Industrial Solutions as soon as possible within the coming two months.

Yours faithfully



03 March 2014.

Amos Shiburi
Programme Manager SEZ

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the dti Customer Contact Centre local: 0861 843 384 International: +27 12 394 9500, www.thedti.gov.za

Dr Pieter du Toit
Chief Executive Officer
Eco-Industrial Solutions (Pty) Ltd
P.O Box 3318
Modimolle
0510

Dear Dr. du Toit,

RE: SUPPORT FOR THE COKE PLANT AND ECO-INDUSTRIAL PARK IN MUSINA

In recognition of the efforts to create the first zero-solid waste Eco-Industrial Park in the world, the Department of Trade and Industry (**the dti**) offers its support for the coke plant and Industrial Park project in Musina. It is our belief that the conceptual design of the Limpopo Eco-Industrial Park (LEIP) embraces the best aspects of environmental protection with economically viable industrial aspirations while incorporating the development needs of Musina and its residents.

This historic development constitutes a catalyst project for a possible Special Economic Zone in Musina where industrial development and environmental protection go hand in hand. The LEIP will be situated in South Africa's gateway to Africa and this will encourage Eco-Industrial Solutions (Pty) Ltd (EIS) and all tenants of the LEIP to contribute towards the creation and expansion of related supply chains and business opportunities and fuelling the socio- economic development of the area. Industrial development in the Musina area is aligned with our government's National Development Plan to create job opportunities by stimulating economic growth as well as key priority areas of the Industrial Policy Action Plan of **the dti**.

I wish you well in implementing the world's first zero-solid waste Limpopo Eco-Industrial Park. On behalf of the Department of Trade and Industry, I thank you for embracing the challenge.

Kind Regards



Lionel October
Director General

Date: 16/07/2014



Lefapha la Dikgwabisano le Dintlasetere • Lefapha la Kgwebo le Indastri • Umnyango wezokhwebo noZimboni • Muhasho wa zwa Mbambazo na Indastri • Departement van Handel en Nywerheid • Kgoro ya Kgwebo le Indastri • Ndzawulo ya to Mabindzu na Tindastri • Litiko leTokuheba neMboni • ISebe lezoRhwambo noShishiro • UmNyango wezokuRhwabefana namaBubulo





the dti

Department
Trade and Industry
REPUBLIC OF SOUTH AFRICA

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the dti Customer Contact Centre local 0861 843 384 International +27 12 394 9500 www.dti.gov.za

Dr. Pieter du Toit
Chief Executive Officer
Eco-Industrial Solution
Sussensavle 9, 708KR
Modimolle, 0510

Dear Dr. du Toit

**RE: SUPPORT FOR LIMPOPO ECO-INDUSTRIAL PARK AS PART OF THE PROPOSED
MUSINA SPECIAL ECONOMIC ZONE**

Our meeting held on the 3rd of June 2013 refers. We appreciate the Eco-industrial Solution's industrial development initiatives which will promote development, growth and job creation in Musina and surrounding areas.

I therefore confirm the support of the dti for Limpopo Eco-Industrial Park as part of the proposed Musina Special Economic Zone. We further appreciate the collaboration with the Limpopo Provincial Government in the development of this zero-waste park.

The support of the dti for this initiative does not guarantee that the proposed Musina Special Economic Zone will be automatically approved and designated, as this will depend on, amongst others, the results of the feasibility study and report, as well as the decision of the Minister regarding designation.

Regards

Lionel October

Director-General

Date: 6.../.../2013



Lefapha la Dikgwebucane le Dimatseten • Lefapha la Kgwebo le Indasteri • uMnyango wezohwabo neZimboni • Muhasho wa zika
Mbambadzo na Indasteri • Department van Handel en Nywerheid • Kapro ya Kgwebo le indasteri • Ndzakwila ya la Mabindzi na
Tundistri • Ufiko le Tekuhwaba neMibomi • iSebe lezoRhwabo noShishino • UmeNyango wezokuRhwabelana namaSubulo



Batho Pele - Putting people first

ANNEXURE D:

Studies that EIS conducted as part of LEIP Project Information

**This document forms part of an objection letter that was submitted to the
dti by Eco-Industrial Solutions (Pty) Ltd on 3rd May 2016.**

STUDIES EIS COMPLETED FOR THE LEIP PROJECT

1. Geotechnical Desk Study - Industrial Complex in Makhado
2. Major Industrial Complex (MIC) Master Plan Rev 0,1,2 & 3
3. Funding Sources for MIC Plants Rev 0,1
4. Carbon Offset Programs _Overview Report
5. KEY Environmental Legislation – Legal Review Report
6. Concept Coal-to-Liquids (CTL) Plant Rev 0,1,2,3
7. Coalbed Methane (CBM) Overview Report
8. Demacon LEIP Market Study Sept2011
9. Eco-Industrial Parks (EIP) Case Studies Report
10. Techno Economic evaluation for coke plant technology choice
11. Coke Plant Pre-Feasibility Study
12. Financing Eco-Industrial Parks Report
13. Waste Water Treatment (WWT) Concept Study Rev 0,1
14. Limpopo Eco-Industrial Park (LEIP) Market Study
15. LEIP Town Planning Report Rev 0,1
16. M-Tech (2011) LEIP Project - Seawater Desalination Pre-Feasibility Study
17. ECO INDUSTRIAL SOLUTIONS - BUSINESS PLAN Rev1
18. Limpopo Eco-Industrial Park (LEIP) Market Study Rev 0
19. LEIP Site Selection Matrix
20. Limpopo Eco-Industrial Park Conceptual Study Rev3
21. CBM Progress Report Prospecting 0097 PA 2011 Final Submitted
22. Limpopo Eco Industrial GTL Plant for LEIP Master Plan Rev C
23. Limpopo Eco Industrial Coke Plant Rev C
24. MIC Steel Economics Report
25. LEIP PROJECT DESIGN BASIS
26. Research report Lephalale lessons learnt
27. Limpopo Eco-Industrial Park (LEIP) Market Study Final Report
28. LEIP Master Plan 19July2012
29. Plasma Waste Gasification (PWGP) Feasibility Study
30. Pre-feasibility Study for Bulk Water Supply to LEIP
31. Financing the LEIP Report & Financing Model for the LEIP project
32. Wood Mackenzie LTD Market Research CTL
33. Coal Gasification and its Potential Product Markets

34. Coal-to-Hydrocarbons (CTH) Development Approach
35. Coal-to-Hydrocarbons (CTH) Value Chain Study
36. CTH Water Mass Balance Study
37. Coal-to-Methanol Study
38. Coal-to-Hydrocarbons (CTH) Scenarios for South Africa
39. CTL Diesel Market Study
40. CTL Conceptual Financial Model
41. Cost Estimates for CTL
42. CTL Financials Workbook
43. CTL Major Equipment List Details
44. Methanol Feasibility Study 5 000 TPD versus 10 000 TPD
45. CTL Commercial Feasibility Rev2
46. CTL Feasibility Technical Section Rev2
47. Coal Gasification Potential Products Markets
48. CTL BASIC ENGINEERING DESIGN DATA/BEDD
49. Shell versus Siemens Gasification Technology Study
50. CTH Project Implementation Strategy
51. CTL Minimum Requirements for Capital Approval
52. Musina SEZ CTL Pre-Feasibility Study
53. Methanol-to-Gasoline (MTG) Pre-Feasibility Study
54. DME Pre-Feasibility Study
55. Proving Out Plasma Gasification
56. Limpopo Coke Plant and Power Generation Project Conceptual Study
57. Limpopo Eco-Industrial Park (LEIP) Market Study Final Report
58. Financing Model for the LEIP project 19Feb2013
59. LEIP Business Case Rev5 Final
60. Pre-Feasibility for Bulk Water Supply to LEIP
61. CTL-EM-01-BED-001 RevA1 (Client Engineering Standard)
62. CTH Project Scope Rev 0
63. CTL Project Implementation Strategy Rev 1 01Mar2016
64. CTH Feasibility Study
65. CTH Business Plan Rev0
66. FACTORS FOR CONSIDERATION DURING PROJECT FEASIBILITY AND FEED STUDIES
67. Min requirements for Capital Approval_10Dec07
68. Summary Process Description for CTH
69. CTH Basis of Design Data

70. Coal to Methanol Plant Study (5 000 MTPD)
71. Coal to Methanol Plant Study (10 000 MTPD)
72. Methanol to DME feasibility study
73. Methanol to MTG feasibility study
74. Project Valuation Criteria
75. Musina SEZ Development Conceptual Plan Rev1
76. LEIP Prospectus Rev4 5May2013
77. DWA Water Application 1July2013
78. LEIP - Business Plan Rev3 Final
79. EIS Comprehensive Business Plan 2013_2018 Rev3
80. LEIP Environmental Assessments and costs (change of landuse WWTW's) Sep 2013 V5
81. LEIP Coke Plant Pre-Feasibility Rev D
82. Musina SEZ Brick Plant Feasibility Rev 2
83. LEIP Skills Assessment 2013
84. LEIP Socio-Economic Impact Analysis April2014
85. EIS Brickmaking Business Plan
86. Musina SEZ CTL Feasibility Study
87. Shell Hydrocarbons Value Chain Study
88. Steel and Power Plant Conceptual Study Jan2014
89. Coke Plant Business Case Rev6 Final
90. LEIP Skills required for construction and operations
91. LEIP Economic Impact Assessments
92. LEIP Employment Creation Plan Rev1
93. LEIP Skills required for construction and operations
94. LEIP Plan skills training program and scope
95. Urea Market Study - Desk Report draft 7Jun14
96. LEIP township establishment - EIA Scoping Report
97. LEIP Infrastructure Master Plan 2014
98. Feasibility for Bulk Water Supply to LEIP
99. LEIP Infrastructure Master Plan 2014 Rev2
100. LEIP Legal Review 26 October 2015
101. LEIP Legal Review 26 October 2015

COKE Plant Studies:

102. Socio-Economic Impact analysis
103. Traffic and logistic impact studies

104. Spatial Development Framework and alignment with all local, district, provincial and national development priorities
105. Economic impact assessments
106. Detailed Industry and Sector Assessment studies
107. Employment creation plan during and after construction and target community demographics
108. Impact on GGP, poverty and living standards
109. Value chain definition and prospects for new enterprise creation, SMME's and supplier development
110. Community engagement and consultation concluded and outstanding
111. Anticipated value of fixed investment and extent of foreign direct investment
112. Technical and technological aspects
113. Industry analysis and competitive forces
114. Detailed geo-technical investigation of land portion
115. Topographical surveys
116. Coke plant process engineering
117. Site and balance of plant engineering
118. Technology and quenching evaluation
119. Completion of civil engineering studies
120. Detailed Land use zoning, site planning and design density, building design
121. Urban designs, landscape design and architectural design
122. Logistic infrastructure requirements and existing capacities (up and downstream)
123. Bulk Infrastructure availability and capacity gap (water, energy, waste, etc)
124. Anticipated master infrastructure development plan
125. Impact of infrastructure creation for the region
126. Technology Testing
127. Skill Assessment
128. Skills Required: Construction & Operations
129. Identify Available Skills: Local, Regional, Provincial
130. Assess Contractors' Skills Training Programs
131. Plan Skills Training Program & Scope with Limpopo
132. Source & Secure Facilities for Skills Training
133. Compile Skills Training Implementation Plan
134. Market & Financial feasibility
135. Local and export demand and trend analysis
136. Segmentation of customer base and mission critical logistic, quality and safety requirements
137. Coke industry cost structure and profitability

138. Coke distribution channels and logistics
139. Marketing success factors and requirements
140. Coke marketing strategy and plan
141. Anticipated financial viability and funding requirements
142. Scope possible PPP arrangements
143. Project Capitalisation Research and Finalisation
144. Define economic and social investment/funding requirements and preferred capitalisation approach
145. Scan and prioritise potential investors and funders (for investment and social infrastructure development)
146. Engage and verify suitability of funding partners
147. Secure commitments for capitalisation from the various entities
148. General Research
149. Legal and other requirements
150. Land ownership, use and re-zoning requirements and timelines
151. Stakeholder management plan
152. EIA compliance
153. Alignment gaps with local, provincial and national infrastructure supply
154. Risk profile
155. Environmental, supply, market, technological, logistical, political, social, labour supply and finance risks etc.
156. Risk prioritisation and mitigation
157. Risk management approach and system
158. Processes to Address Immediate Unforeseen risks

GTL Plant Studies:

159. Socio-Economic Impact & Analysis Studies
160. Spatial Development Framework and alignment with all local, district, provincial and national development
161. Economic Impact Assessments
162. Detailed Industry and Sector Assessment studies
163. Employment creation plan during and after construction and target community demographics
164. Impact on GGP, poverty and living standards
165. Community engagement and consultation concluded and outstanding
166. Technical and technological aspects
167. Industry Analysis and Competitive Forces
168. Geo-technical investigation of land portion

169. Plant Process Engineering
170. Site and balance of plant engineering
171. Technology Evaluation
172. Completion of Civil Engineering studies
173. Skills Assessment
174. Skills Required: Construction & Operations
175. Identify Available Skills: Local, Regional, Provincial
176. Assess Contractors' Skills Training Programs
177. Plan Skills Training Program & Scope with Limpopo
178. Source & Secure Facilities for Skills Training
179. Compile Skills Training Implementation Plan
180. Market & Financial Feasibility
181. Local and export demand and trend analysis
182. Segmentation of customer base and mission critical logistic, quality and safety requirements
183. Industry cost structure and profitability
184. Distribution channels and logistics
185. Marketing success factors and requirements
186. Marketing Strategy and Business Plan
187. Anticipated financial viability and funding requirements
188. Scope possible PPP arrangements
189. Project Capitalisation Research and Finalisation
190. Define economic and social investment/funding requirements and preferred capitalisation approach
191. Engage and verify suitability of funding partners
192. Secure commitments for capitalisation from the various entities
193. Legal and other requirements
194. Stakeholder management plan
195. EIA compliance
196. Risk profile
197. Environmental, supply, market, technological, logistical, political, social, labour supply and finance risks etc.
198. Risk prioritisation and mitigation
199. Risk management approach and system
200. Processes to Address Immediate Unforeseen risks

Methanol Plant Studies:

201. Socio-Economic Impact & Analysis Studies
202. Spatial Development Framework and alignment with all local, district, provincial and national development
203. Economic Impact Assessments
204. Detailed Industry and Sector Assessment studies
205. Employment creation plan during and after construction and target community demographics
206. Impact on GGP, poverty and living standards
207. Community engagement and consultation concluded and outstanding
208. Technical and technological aspects
209. Industry Analysis and Competitive Forces
210. Geo-technical investigation of land portion
211. Plant Process Engineering
212. Site and balance of plant engineering
213. Technology Evaluation
214. Completion of Civil Engineering studies
215. Skills Assessment
216. Skills Required: Construction & Operations
217. Identify Available Skills: Local, Regional, Provincial
218. Assess Contractors' Skills Training Programs
219. Plan Skills Training Program & Scope with Limpopo
220. Source & Secure Facilities for Skills Training
221. Compile Skills Training Implementation Plan
222. Market & Financial Feasibility
223. Local and export demand and trend analysis
224. Segmentation of customer base and mission critical logistic, quality and safety requirements
225. Industry cost structure and profitability
226. Distribution channels and logistics
227. Marketing success factors and requirements
228. Marketing Strategy and Business Plan
229. Anticipated financial viability and funding requirements
230. Scope possible PPP arrangements
231. Project Capitalisation Research and Finalisation
232. Define economic and social investment/funding requirements and preferred capitalisation approach
233. Engage and verify suitability of funding partners

- 234. Secure commitments for capitalisation from the various entities
- 235. Legal and other requirements
- 236. Stakeholder management plan
- 237. EIA compliance
- 238. Risk profile
- 239. Environmental, supply, market, technological, logistical, political, social, labour supply and finance risks etc.
- 240. Risk prioritisation and mitigation
- 241. Risk management approach and system
- 242. Processes to Address Immediate Unforeseen risks

OTHER:

- 243. LEIP East Industrial Township Planning and Approvals
- 244. LEIP West Industrial Township Planning and Approvals
- 245. LEIP Musina Eco-Housing Estate Township Planning and Approvals
- 246. LEIP Singelele Eco-Housing Estate Township Planning and Approvals
- 247. LEIP Basic Infrastructure Design Details and Drawings
- 248. LEIP Basic Infrastructure Design Cost Estimates
- 249. LEIP Basic Infrastructure Financial Model
- 250. Coke Plant Financial Model
- 251. GTL Plant Financial Model
- 252. Methanol Plant Financial Model
- 253. Power Plant 600MW Pre-Feasibility Study
- 254. Carbon Recycle International Pre-Feasibility Study