No comments were received from Registered Interested and Affected Parties during the Draft Basic Assessment Report Review. The Basic Assessment report was placed at the following public places for review from 10 July 2012 to 7 August 2012:

- Balfour Public Library
- Grootvlei Power Station Main Gate Reception
- Lidwala Website (www.lidwala.com)
- Eskom EIA website (http://www.eskom.co.za/c/44/environmental-impact-assessments/)

At no point during the review period were comments received from the registered interested and affected parties, stakeholders or the general public. In addition, no request was received for a public meeting or open day.

#### 6. AUTHORITY PARTICIPATION

Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input.

List of authorities informed:

- Mpumalanga Department of Economic Development, Environment and Tourism
- Department of Agriculture, Forestry and Fisheries
- Department of Labour
- Department of Water Affairs (National and Provincial)
- Dipaleseng Local Municipality
- Gert Sibande District Municipality

List of authorities from whom comments have been received:

No comments were received from the above authorities during the Draft Basic Assessment Report Review. Proof of consultation has been provided in Appendix G. All stakeholders were emailed and numerous telephonic follow ups were undertaken. Documentation was posted via registered mail were no email addresses were available.

#### 7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the competent authority. Proof of any such agreement must be provided, where applicable.

Has any comment been received from stakeholders?

NO

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

Stakeholders on the Database were emailed a copy of the Background Information Document and were informed of the review opportunity of the Draft Basic Assessment Report. Were Stakeholders and I&APs had email addresses, information was emailed through, however, in the event that no email address was available the documentation was sent via registered post. The Database is included in Appendix G.

No comments were received from Registered Interested and Affected Parties during the Draft Basic Assessment Report Review. Comments were also not received in response to the general public notices and adverts that were erected and published.

#### **SECTION D: IMPACT ASSESSMENT**

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

#### 1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

No comments were received from Registered Interested and Affected Parties during the Draft Basic Assessment Report Review. However, similar projects undertaken by Eskom regarding the retrofitting of FFP's identified the following main issues:

- Appreciation of improvement on Air Quality
- Job Creation

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report as Annexure E):

# The following responses can be provided:

- Air Quality it is anticipated that the existing Ground Level Concentrations of 4 μg/m³ (of particulate matter) will be reduced by 73% to 1.08 μg/m³ once the retrofitting is complete
- Job Creation It is anticipated that a total of 918 employment opportunities will be made during the development of the project, of which approximately 50% are anticipated to be allocated to previously disadvantaged

# 2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

# Alternative (preferred alternative)

The impacts below are discussed in more detail in the significance rating table (Table 2).

## Direct impacts:

- Planning and Design Phase
  - No impacts anticipated
- Construction Phase
  - Noise
  - Air Quality dust
  - Social Job creation
  - Waste generation and spills
- Operational Phase
  - Noise
  - Air Quality (positive impact)
  - Waste Generation and Spills
  - Social Job Creation (positive impact)
- Decommissioning Phase
  - Noise
  - Air Quality Dust
  - Social Job Creation (positive impact)
  - Waste generation and spills

# **Indirect impacts:**

- Planning and Design Phase
  - No impacts anticipated
- Construction Phase
  - No impacts anticipated
- Operational Phase
  - o Health
  - Legal Compliance
- Decommissioning Phase
  - No impacts anticipated

# **Cumulative impacts:**

- Planning and Design Phase
  - No impacts anticipated
- Construction Phase
  - No impacts anticipated
- Operational Phase
  - Air Quality
  - Waste
- Decommissioning Phase
  - No impacts anticipated

#### No-Go Alternative

In the event that the existing ESPs in Units 2, 3, and 4 are not retrofitted to new Fabric Filter Plants the status quo will remain and the power station will not be able to meet the more stringent particulate Minimum Emission Standards.

In accordance with Regulation 31 of Government Notice R.543, promulgated in terms of section 24 of the National Environmental Management Act, 1998 (Act 107 of 1998), Lidwala were required to assess the significance of potential impacts in terms of the following criteria:

- Cumulative impacts;
- Nature of the impact;
- Extent and duration of the impact; and
- Probability of the impact occurring.

Issues were assessed in terms of the following criteria:

- The nature, a description of what causes the effect, what will be affected and how it will be affected:
- The physical extent, wherein it is indicated whether:
  - 1 the impact will be limited to the site;
  - 2 the impact will be limited to the local area;
  - \* 3 the impact will be limited to the region;
  - 4 the impact will be national; or
  - \* 5 the impact will be international;
- The duration, wherein it is indicated whether the lifetime of the impact will be:
  - \* 1 of a very short duration (0-1 years);
  - 2 of a short duration (2-5 years);
  - 3 medium-term (5–15 years);
  - \* 4 long term (> 15 years); or
  - \* 5 permanent;
- The magnitude of impact on ecological processes, quantified on a scale from 0-10, where a score is assigned:
  - \* 0 small and will have no effect on the environment:
  - \* 2 minor and will not result in an impact on processes;
  - 4 low and will cause a slight impact on processes;
  - \* 6 moderate and will result in processes continuing but in a modified way;
  - \* 8 high (processes are altered to the extent that they temporarily cease); or
  - \* 10 very high and results in complete destruction of patterns and permanent cessation of processes;
- The probability of occurrence, which describes the likelihood of the impact actually occurring. Probability is estimated on a scale where:
  - 1 very improbable (probably will not happen;
  - 2 improbable (some possibility, but low likelihood);
  - 3 probable (distinct possibility);

- \* 4 highly probable (most likely); or
- 5 definite (impact will occur regardless of any prevention measures);
- the significance, which is determined through a synthesis of the characteristics described above (refer formula below) and can be assessed as low, medium or high; and
- the status, which is described as either positive, negative or neutral..

The significance is determined by combining the criteria in the following formula:

S = (E+D+M)\*P; where

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The significance weightings for each potential impact are as follows:

- < 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
- 30 60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- > 60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).

# **Table 2: Significance rating Table**

#### **PLANNING AND DESIGN PHASE**

#### Nature of the phase

The Planning and design phase will be limited to site visits and planning meetings. . The proposed project involves the retrofitting of the existing ESPs with FFPs within the existing encasements (with some minor modification). The project, however, does require the existing emissions license to be amended.

#### **Direct Impacts**

No direct impacts are anticipated during this phase.

#### **Indirect Impacts**

The only indirect impact that this project will have is the requirement to amend the existing emissions license which therefore triggered this Basic Assessment Process.

## **Cumulative Impacts**

No cumulative impacts are anticipated during this phase.

#### CONSTRUCTION PHASE

#### Nature of the phase

During construction the existing ESP technology will be removed from the existing concrete casing. The retrofit will be done by removing the roof of the concrete casing and entering from above, via cranes placed adjacent to the ESP casing. The FFP technology will be installed inside the existing casing – although the existing casing will be extended vertically, by 1.1 m. Additional developments that will be included to the site area, will include:

- \* A new compressor house to be constructed. The compressor house will be a concrete/brick building with a steel roof enclosure which is no more than 18,5m x 22,0 m in dimensions at the back of unit 3, between the new FFP plant and the existing road at the back of the station. The reason for building the compressor house behind unit 3 is because additional compressors are required for the Fabric Filter Plant.
- \* A new concrete driveway (22 m wide, 10 m long) which is the width of the compressor house, will extend to the road, which is roughly 4m away
- \* The current ID Fans will also need to be upgraded through minor increase in plinth size as described in the next bullet no additional foundation footprint will be disturbed as a result of this (just minor increase in plinth size as described in the next bullet);
- \* The existing concrete plinths will be cut-off at grade level and a new plinth will be constructed at the same location to support the new ID fan (size will be no more than 20% bigger than the current plinth).
- \* There will be a requirement of new transformers feeding station boards A and B. These transformers will replace the existing transformers, hence being installed in the same location. The plinth for the transformers may be increased by no more than 10% with associated new bund walls.

During construction, the contractor will have a contractor's yard which will consist of a new fabrication workshop which is 76m x 20m in size (concrete slab, masonite building with a steel roof). The site workshop will be used to do most of the fabrication and sub-assemblies prior to the construction. By erecting a workshop like this on site it will make the logistics much easier as much reduced abnormal transport will be required to transport pre-fabricated structures from Gauteng to site.

#### **Direct Impacts**

| Potential Impact | Mitigation        | Extent   | Duration   | Magnitude        | Probability     | Significance     |                         | Status           | Confidence              |  |  |  |
|------------------|-------------------|--|--|------------------|-----------------|------------------|-------------------------|------------------|-------------------------|--|--|--|
|                  |                   | (E)  | (D)  | (M)              | (P)             | (S=(E+D+M)*      | P)                      | (+ve or -ve)     |                         |  |  |  |
| Noise            | Nature of impact: | The construct  | The construction activities will result in some additional noise that may affect workers on site. This noise could result from increased |                  |                 |                  |                         |                  |                         |  |  |  |
|                  |                   | construction traffic, welding, grinding, materials handling etc. The construction phase also includes the decommissi |  |                  |                 |                  |                         |                  |                         |  |  |  |
|                  |                   | the existing st  | tructures.   |                  |                 |                  |                         |                  |                         |  |  |  |
|                  |                   |  |  |                  |                 |                  |                         |                  |                         |  |  |  |
|                  | without           | 1  | 2  | 2                | 4               | 20               | Low                     | -                | high                    |  |  |  |
|                  | with              | 1  | 2  | 0                | 2               | 6                | Low                     | -                | high                    |  |  |  |
|                  | Mitigation        | Ensure that a  | II workers are is  | ssued with and i | use the correct | PPE on site, esp | ecially with regards to | ear plugs. In ac | dition all construction |  |  |  |
|                  | proposed          | areas should l   | be designated a  | s noisy areas.   |                 |                  |                         |                  |                         |  |  |  |

| Potential Impact     | Mitigation          | Extent   | Duration  | Magnitude         | Probability      | Significance     |                        | Status | Confidence |  |  |  |
|----------------------|---------------------|--|---|-------------------|------------------|------------------|------------------------|--------|------------|--|--|--|
|                      |                     | (E)  | (D)   | (M)               | (P)              | (S=(E+D+M)*I     | (S=(E+D+M)*P)          |        |            |  |  |  |
| Air Quality: Dust    | Nature of impact:   | It is anticipate   | d that the cons   | truction activiti | es will generate | e dust on the co | nstruction site        |        |            |  |  |  |
|                      | without             | 1  | 2   | 4                 | 4                | 28               | Low                    | -      | high       |  |  |  |
|                      | with                | 1  | 2   | 2                 | 3                | 15               | Low                    | -      | high       |  |  |  |
|                      | Mitigation proposed | construction a   | Ensure that all workers are issued with the correct PPE as per the power station's Health and Safety procedures. Areas where construction activities area taking place should be designated as "dusty" areas. Where practically possible dust suppression measure should be put in place. |                   |                  |                  |                        |        |            |  |  |  |
| Social: Job Creation | Nature of impact:   | Approximately 918 jobs will be created during the construction period of which 50% will be allocated to Previously disadvantaged individuals |   |                   |                  |                  |                        |        |            |  |  |  |
|                      | without             | 2  | 2   | 4                 | 3                | 24               | Low                    | +      | high       |  |  |  |
|                      | with                | 2  | 2   | 6                 | 4                | 40               | Medium                 | +      | high       |  |  |  |
|                      | Mitigation proposed | Ensure that local contractors are utilised as far as possible, this will optimise the positive impact on the local communities               |   |                   |                  |                  |                        |        |            |  |  |  |
| Waste: Generation    | Nature of impact:   |  | Construction waste will be generated, not only from the new construction that takes place but also from the decommissioning o existing facilities and structures. This waste includes steel, concrete, oil, cables etc.   |                   |                  |                  |                        |        |            |  |  |  |
|                      | without             | 1  | 2   | 4                 | 5                | 35               | Medium                 | -      | high       |  |  |  |
|                      | with                | 1  | 2   | 2                 | 3                | 15               | Low                    | -      | high       |  |  |  |
|                      | Mitigation proposed | All waste mus  | t be managed a  | and disposed of   | in accordance v  | with the power   | station's waste proced | ures.  |            |  |  |  |

#### **Indirect Impacts**

No indirect impacts are anticipated during this phase

#### **Cumulative Impacts**

No cumulative impacts are anticipated during this phase. The industrial levels of noise to which Eskom comply are not anticipated to increase and therefore there will be no cumulative noise impact.

#### **OPERATIONAL PHASE**

#### Nature of the phase

During the operational phase the FFPs will filter the air from the unit 2, 3 and 4 boilers and remove the ash from the flue gas prior to the gas being emitted from the stack. The ash captured is collected in the hoppers and transported via the ash disposal system to the ash dam. The waste handling facilities for the ash and the additional filter bags is existing and operational. The fact that most of the infrastructure and facilities are existing limits the operational impacts.

#### **Direct Impacts**

| Batantial Income  | B. distance in the  | Entrant   | D  | B. d. a. a. a. ida. a. d. | Dunka kilis        | Ciifi             |                              | Chatara          | Confidence              |  |  |  |  |
|-------------------|---------------------|---|--|---------------------------|--------------------|-------------------|------------------------------|------------------|-------------------------|--|--|--|--|
| Potential Impact  | Mitigation          | Extent  | Duration   | Magnitude                 | Probability        | Significance      |                              | Status           | Confidence              |  |  |  |  |
|                   |                     | (E)   | (D)  | (M)                       | (P)                | (S=(E+D+M)*I      | P)                           | (+ve or -ve)     |                         |  |  |  |  |
| Noise             | Nature of impact:   | The new FFPs  | require an up  | graded ID fan             | which will cha     | nge the ambier    | t noise. However, th         | e change in no   | oise as a result of the |  |  |  |  |
|                   |                     | retrofitting pr   | oject is anticipa  | ated to be unme           | easurable and n    | ot audible. Refe  | r to noise report for m      | ore detailed inf | formation.              |  |  |  |  |
|                   | without             | 1   | 4  | 2                         | 2                  | 14                | Low                          | -                | high                    |  |  |  |  |
|                   | with                | 1   | 4  | 0                         | 1                  | 5                 | Low                          | -                | high                    |  |  |  |  |
|                   | Mitigation proposed | In order to en  | der to ensure that the ambient noise does not change it is recommended that all machinery is maintained in good workin operating within allowable legal limits. The power station must also ensure that all employees continue to wear the relev |                           |                    |                   |                              |                  |                         |  |  |  |  |
|                   |                     | and operating   |  |                           |                    |                   |                              |                  |                         |  |  |  |  |
|                   |                     | for noisy area  | s.   |                           |                    |                   |                              |                  |                         |  |  |  |  |
| Waste: Generation | Nature of impact:   | After every 36  | 6000 operation   | al hours per uni          | t the fabric filte | er bags must be   | changed. This will res       | ult in an increa | se of hazardous waste   |  |  |  |  |
|                   |                     | generation at the power station. These bags will be disposed according to the station's waste management procedures. The additional |  |                           |                    |                   |                              |                  |                         |  |  |  |  |
|                   |                     | ash captured  | in the process   | will also result i        | n an increase ii   | n waste generat   | ion, but this will be dis    | sposed of at th  | e ash dams, which are   |  |  |  |  |
|                   |                     | developed for   | developed for it.  |                           |                    |                   |                              |                  |                         |  |  |  |  |
|                   | without             | 1   | 4  | 6                         | 3                  | 33                | Medium                       | -                | high                    |  |  |  |  |
|                   | with                | 1   | 4  | 2                         | 2                  | 14                | Low                          | -                | high                    |  |  |  |  |
|                   | Mitigation proposed | Ensure that fa  | Ensure that fabric filter bags are disposed of in line with the power station's hazardous waste procedures. The fabric filter bags must  |                           |                    |                   |                              |                  |                         |  |  |  |  |
|                   |                     | be disposed o   | f at a licensed h  | nazardous wast            | e site such as H   | olfontein. The a  | additional ash captured      | I must be trans  | ported via the existing |  |  |  |  |
|                   |                     | ash disposal system.  |  |                           |                    |                   |                              |                  |                         |  |  |  |  |
| Waste: Spillage   | Nature of impact:   | Spillage of filt  | ered ash could   | occur during th           | e handling of w    | aste such as a te | ear in a filter bag as it is | replaced         |                         |  |  |  |  |
|                   | without             | 1   | 2  | 4                         | 3                  | 21                | Low                          | -                | high                    |  |  |  |  |
|                   | with                | 1   | 1  | 2                         | 2                  | 8                 | Low                          | -                | high                    |  |  |  |  |
|                   | Mitigation proposed | Ensure that t   | he procedures  | for FFP dusting           | g as well as for   | bag inspection    | and replacement are          | followed at a    | Il times. Ensure that   |  |  |  |  |
|                   |                     | procedures ar   | e in place in the  | e event that a s          | pill is noted.     |                   |                              |                  |                         |  |  |  |  |

| Potential Impact       | Mitigation          | Extent  | Duration  | Magnitude       | Probability     | Significance          |   | Status                 | Confidence               |  |  |  |  |  |  |  |  |
|------------------------|---------------------|---|---|-----------------|-----------------|-----------------------|---|------------------------|--------------------------|--|--|--|--|--|--|--|--|
|                        |                     | (E)   | (D)   | (M)             | (P)             | (S=(E+D+M)*           | (S=(E+D+M)*P)   |                        |                          |  |  |  |  |  |  |  |  |
| Air Quality: Emissions | Nature of impact:   | The operation   | he operation of the FFPs will reduce the particulate emissions from the power station substantially. For details in this regard refer |                 |                 |                       |   |                        |                          |  |  |  |  |  |  |  |  |
|                        |                     | the Air qualit  | ne Air quality study in Appendix D. This reduction in particulate emissions will result in Eskom being able to consistently meet th   |                 |                 |                       |   |                        |                          |  |  |  |  |  |  |  |  |
|                        |                     | new minimun   | new minimum emission standards at Grootvlei power station.  |                 |                 |                       |   |                        |                          |  |  |  |  |  |  |  |  |
|                        | without             | 2   | 4   | 6               | 4               | 48                    | Medium  | +                      | high                     |  |  |  |  |  |  |  |  |
|                        | with                | 2   | 4   | 6               | 4               | 48                    | Medium  | +                      | high                     |  |  |  |  |  |  |  |  |
|                        | Mitigation proposed | The FFPs mus  | t be operated a   | ccording to the | FFP operating   | procedures and        | it must be ensured th   | at all maintenar       | ice is conducted in line |  |  |  |  |  |  |  |  |
|                        |                     | with the stati  | on's existing ma  | aintenance prod | cedures.        |                       |   |                        |                          |  |  |  |  |  |  |  |  |
| Social: Job Creation   | Nature of impact:   |   |   |                 |                 |                       | ower station. Howeve  |                        |                          |  |  |  |  |  |  |  |  |
|                        |                     | _   | e changed it is anticipated that some short term employment opportunities may be created in order to assist the power station sta     |                 |                 |                       |   |                        |                          |  |  |  |  |  |  |  |  |
|                        |                     | replace the ba  | eplace the bags   |                 |                 |                       |   |                        |                          |  |  |  |  |  |  |  |  |
|                        | without             | 2   | 2   | 4               | 3               | 24                    | Low   | +                      | high                     |  |  |  |  |  |  |  |  |
|                        | with                | 2   | 2   | 2               | 4               | 24                    | Low   | +                      | high                     |  |  |  |  |  |  |  |  |
|                        | Mitigation          | Ensure that local HDI contractors or individuals are considered for any opportunities that may be created in the future |   |                 |                 |                       |   |                        |                          |  |  |  |  |  |  |  |  |
|                        | proposed            | ,   |   |                 |                 |                       |   |                        |                          |  |  |  |  |  |  |  |  |
| Indirect Impacts       |                     |   |   |                 |                 |                       |   |                        |                          |  |  |  |  |  |  |  |  |
| <u> </u>               | Notae of invest     | Thermodynation  |   |                 |                 | hara la constituir de |   |                        |                          |  |  |  |  |  |  |  |  |
| Health: Human, anima   | Nature of impact:   |   |   |                 |                 |                       | ult in improved ambie   |                        | the surrounding areas    |  |  |  |  |  |  |  |  |
| and plant              |                     | This will mair  | ectly result in th  | ie reduction of | emission relate | и пеанн ітрасі        | s on human, animals a   | na piants.             |                          |  |  |  |  |  |  |  |  |
|                        |                     |   |   |                 |                 |                       |   |                        |                          |  |  |  |  |  |  |  |  |
|                        |                     |   |   |                 |                 | T -                   | T   | 1                      | T                        |  |  |  |  |  |  |  |  |
|                        | without             | 2   | 4   | 4               | 4               | 40                    | Medium  | +                      | high                     |  |  |  |  |  |  |  |  |
|                        | with                | 2   | 4   | 4               | 4               | 40                    | Medium  | +                      | high                     |  |  |  |  |  |  |  |  |
|                        | Mitigation          |   |   |                 |                 |                       | FFPS, no further mitiga   | ation measures         | can be recommended       |  |  |  |  |  |  |  |  |
|                        | proposed            |   |   |                 |                 | g order at all tir    |   |                        |                          |  |  |  |  |  |  |  |  |
| Legal Compliance       | Nature of impact:   |   | _   |                 | P will enable E | skom to meet t        | he more stringent par   | ticulate <b>minimu</b> | m emission standards     |  |  |  |  |  |  |  |  |
|                        |                     |   | uring legal com   | pliance         |                 |                       | 1   |                        |                          |  |  |  |  |  |  |  |  |
|                        | without             | 2   | 4   | 4               | 4               | 40                    | Medium  | +                      | high                     |  |  |  |  |  |  |  |  |
|                        | with                | 2   | 4   | 4               | 4               | 40                    | Medium  | +                      | high                     |  |  |  |  |  |  |  |  |
|                        | Mitigation          |   |   |                 |                 |                       | -   | ation measures         | can be recommended       |  |  |  |  |  |  |  |  |
|                        | proposed            |   | dina tha FFDs an  |                 | 1 1 .           |                       | Oue to the fact that this project would result in all 6 units now operating FFPS, no further mitigation measures can be recommended, besides ensuring the FFPs are maintained in a good working order at all times. |                        |                          |  |  |  |  |  |  |  |  |

| Potential Impact       | Mitigation          | Extent  | Extent Duration Magnitude Probability   |     | Significance | Significance |        | Confidence   |      |  |  |  |
|------------------------|---------------------|---|---|-----|--------------|--------------|--------|--------------|------|--|--|--|
| -                      |                     | (E)   | (D)   | (M) | (P)          | (S=(E+D+M)*  | 'P)    | (+ve or -ve) |      |  |  |  |
| Air Quality: Emissions | Nature of impact:   |   | nits 1, 5 and 6 already have FFPs, and with the retrofitting of the last three units to FFP the positive improvement on the air qualifill be noticeable.  |     |              |              |        |              |      |  |  |  |
|                        | without             | 2   | 4   | 6   | 4            | 48           | Medium | +            | high |  |  |  |
|                        | with                | 2   | 4   | 6   | 4            | 48           | Medium | +            | high |  |  |  |
|                        | Mitigation proposed |   | Due to the fact that this project would result in all 6 units now operating FFPS, no further mitigation measures can be recommended besides ensuring the FFPs are maintained in a good working order at all times.                            |     |              |              |        |              |      |  |  |  |
| Waste: Generation      |                     | It is estimated that an additional 1.39 tons of ash per hour will be captured by the process. This ash will be added to the existin capacitated ash disposal system for disposal on the ash dam at the power station. The additional volumes of ash are nominal is comparison to the overall ash volumes in the waste stream. In addition to the additional ash quantities there will also be an additional number of filter bags that will require disposal. |   |     |              |              |        |              |      |  |  |  |
|                        | without             | 1   | 4   | 2   | 3            | 21           | Low    | -            | high |  |  |  |
|                        | with                | 1   | 4   | 2   | 3            | 21           | Low    | -            | high |  |  |  |
|                        | Mitigation proposed |   | The additional ash will be disposed utilising the existing ash disposal system and the additional fabric filter bags will be disposed of in accordance with the existing disposal procedures. No additional mitigation measures are required. |     |              |              |        |              |      |  |  |  |
|                        | Nature of impact:   | Due to the fa   | Due to the fact that the surrounding structures are taller than the ESP casing (even with the vertical increase of 1.1 m once the retrofinas been completed), there will be no visual impact as a result of the FFP retrofit project.         |     |              |              |        |              |      |  |  |  |

#### **DECOMMISSIONING PHASE**

### Nature of the phase

The decommissioning phase of this project would involve the removal of the FFPs. This would involve the stripping of all materials, associated buildings, structures and concrete slabs. The impact would be closely related to those identified for the construction phase although it is likely that more waste may be generated. In terms of this project it is considered unlikely that the FFPs would be decommissioned in the very near future and that their decommissioning would co-inside with the decommissioning of the power station. However, it is more likely that the new site workshop maybe decommissioned in the event that it is not required once the construction phase has been completed.

#### **Direct Impacts**

| Potential Impact Mitigation |                                       | Extent   | Duration   | Magnitude         | Probability     | Significance       |                          | Status           | Confidence               |  |  |  |
|-----------------------------|---------------------------------------|--|--|-------------------|-----------------|--------------------|--------------------------|------------------|--------------------------|--|--|--|
| · otentiai impact           | · · · · · · · · · · · · · · · · · · · | (E)  | (D)  | (M)               | (P)             | (S=(E+D+M)*P)      |                          | (+ve or -ve)     | Communication            |  |  |  |
| Noise                       | Nature of impact:                     | The decommissioning activities will result in some additional noise that may affect workers on site. This noise could result from increased construction traffic, welding, grinding, materials handling etc. The construction phase also includes the decommissioning of parts of the existing structures. |  |                   |                 |                    |                          |                  |                          |  |  |  |
|                             | with                                  | 1  | 2  | 4                 | 4               | 28                 | Low                      | -                | high                     |  |  |  |
|                             | without                               | 1  | 2  | 2                 | 2               | 10                 | Low                      | -                | high                     |  |  |  |
|                             | Mitigation proposed                   |  | ll workers are is<br>be designated a   |                   | use the correct | PPE on site, esp   | ecially with regards to  | ear plugs. In ac | ddition all construction |  |  |  |
| Air Quality: Dust           | Nature of impact:                     | It is anticipated that the construction activities will generate dust on the construction site   |  |                   |                 |                    |                          |                  |                          |  |  |  |
|                             | with                                  | 1  | 2  | 4                 | 4               | 28                 | Low                      | -                | high                     |  |  |  |
|                             | without                               | 1  | 2  | 2                 | 3               | 15                 | Low                      | -                | high                     |  |  |  |
|                             | Mitigation proposed                   | construction a   | Ensure that all workers are issued with the correct PPE as per the power station's Health and Safety procedures. Areas where construction activities area taking place should be designated as "dusty" areas. Where practically possible dust suppression measures should be put in place. |                   |                 |                    |                          |                  |                          |  |  |  |
| Social: Job Creation        | Nature of impact:                     | Approximatel disadvantage  |  | be created du     | ring the decom  | missioning of s    | ome facilities of which  | 50% will be a    | Illocated to Previously  |  |  |  |
|                             | with                                  | 2  | 2  | 4                 | 3               | 24                 | Low                      | +                | high                     |  |  |  |
|                             | without                               | 2  | 2  | 6                 | 4               | 40                 | Medium                   | +                | high                     |  |  |  |
|                             | Mitigation proposed                   | Ensure that lo   | cal contractors  | are utilised as f | ar as possible, | this will optimise | e the positive impact or | n the local com  | munities                 |  |  |  |

| Potential Impact  | Mitigation        | Extent                   | Duration   | Magnitude | Probability | Significance |    | Status       | Confidence |  |  |  |
|-------------------|-------------------|--------------------------|--|-----------|-------------|--------------|----|--------------|------------|--|--|--|
|                   |                   | (E)                      | (D)  | (M)       | (P)         | (S=(E+D+M)*I | P) | (+ve or -ve) |            |  |  |  |
| Waste: Generation | Nature of impact: | Waste will be            | Waste will be generated from the decommissioning of existing facilities and structures. This waste includes steel, concrete, oil, cables |           |             |              |    |              |            |  |  |  |
|                   |                   | etc.                     |  |           |             |              |    |              |            |  |  |  |
|                   | with              | 1 2 4 5 <b>35 Medium</b> |  |           |             |              |    |              | high       |  |  |  |
|                   | without           | 1                        | 2  | Low       | -           | high         |    |              |            |  |  |  |
|                   | Mitigation        | All waste mus            | All waste must be managed and disposed of in accordance with the power station's waste procedures.                                       |           |             |              |    |              |            |  |  |  |
|                   | proposed          |                          |  |           |             |              |    |              |            |  |  |  |

#### **Indirect Impacts**

No indirect impacts are anticipated during this phase

#### **Cumulative Impacts**

No cumulative impacts are anticipated during this phase

#### 3. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

## Alternative A (preferred alternative)

With the retrofitting of the units from the existing ESPs to FFPs the particulate emissions from the stacks of the Grootvlei Power Station will be reduced, resulting in significantly improved air quality in the surrounding areas. This, coupled with the possibility of a number of short term employment opportunities for local labour, results in a number of positive environmental impacts as a result of the project.

It is clear from the above significance ratings (Table 2) that the positive impacts significantly outweigh the negative impacts of this project.

All the negative impacts such as noise, waste generation and dust can be adequately mitigated in order to reduce the impact.

The site is the existing casing of the existing ESPs, the only change will be an increase in height by 1.1m. The new workshop and compressor house are also located on brown field areas within the power station complex. There are no sensitive environmental areas near the site or the power station in general and there are sufficient existing procedures in place to ensure that any potential impact is prevented.

The power station currently successfully operates 3 units that each have FFP's and the addition of a further 3 FFP's at the remaining units will only serve to improve the power station's particulate emissions performance

It is recommended that the preferred FFP technology retrofitt be approved for the proposed project.

## No-go alternative (compulsory)

In the event that the existing ESPs in Units 2, 3, and 4 are not retrofitted to new Fabric Filter Plants the status quo will remain and the power station will not be able to reduce the particulate emissions as well as not meet the more stringent particulate emission limits.

Therefore, it is considered that leaving the power station as it is without FFPs would be more detrimental to the environment due to the fact that the existing air quality conditions would not improve. Further, this alternative would result in non-compliance with conditions of the air quality licence. Such contravention would not give support to Eskom's objective on "reduction of environmental footprint".

The no-go alternative is therefore not considered as feasible option for this project.

## SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?



YES

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

It is recommended that the proposed FFP technology and associated retrofit process be approved for the proposed project.

It is further recommended that the project proceed in line with the existing procedures at the power station as well as the attached EMP.

Is an EMPr attached?

The EMPr must be attached as Appendix F.

## **SECTION F: APPENDIXES**

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

## The Site / Locality Plan is attached in Appendix A

Appendix B: Photographs

# Site photographs are attached in Appendix B

Appendix C: Facility illustration(s)

# The Facility illustrations are included in Appendix C

Appendix D: Specialist reports (including Terms of Reference)

Air Quality Study Visual Impact Opinion Noise Impact Opinion

Appendix E: Comments and responses report

No comments were received from Registered Interested and Affected Parties during the Draft Basic Assessment Report Review.

Appendix F: Environmental Management Programme (EMPr)

# The EMP is attached in Appendix F

Appendix G: Other information

Public Participation information is included in Appendix G1

The existing Waste Procedures for Grootvlei Power Station are included in Appendix G2