



**Western Cape
Government**

Environmental Affairs and
Development Planning

**DIRECTORATE: LAND MANAGEMENT
REGION 2**

EIA REFERENCE NUMBERS: 16/3/1/2/F2/2/3047/12 (Scoping & EIA Application)
16/3/1/4/F2/2/3048/12 (Exemption Application)

ENQUIRIES: MS. K. GEORGE

DATE OF ISSUE: 07 MAY 2013

The Director
Electra Capital (Pty) Ltd.
P.O. Box 704
GREENPOINT
8000

Attention: Mr. S. Reader

Tel: (021) 424 1189
Fax: (086) 613 8886

Dear Sir

APPLICATION FOR ENVIRONMENTAL AUTHORISATION AND EXEMPTION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2010: THE PROPOSED 65MW PHOTOVOLTAIC SOLAR PLANT AND ASSOCIATED INFRASTRUCTURE ON FARM NO. 400, BERGVALEY, CEDERBERG.

With reference to your application for the abovementioned, find below the outcome with respect to this application.

ENVIRONMENTAL AUTHORISATION AND EXEMPTION

DECISION

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2010, ("NEMA EIA Regulations") the competent authority herewith suspends the environmental authorisation and exemption, issued by this Directorate on 25 October 2012 (Ref. No's. E12/2/4/1-F1/13-3027/12 (Basic Assessment Application) and E12/2/4/5-F1/13-3014/12 (Exemption Application)) in terms of Regulation 47(e) and herewith **grants environmental authorisation and exemption** to the applicant to undertake the list of activities specified in section B below with respect to Alternative 4 and Technology Alternative 2 described in the Environmental Impact Assessment Report ("EIAR") dated 15 March 2013.

The applicant is herewith exempted from the following provisions of the NEMA EIA Regulations: Regulation 10(2)(d) of Government Notice No. R.543, which reads as follows:

10(2) The applicant must, in writing, within 12 days of the date of the decision of the application

(d) publish a notice –

- (i) informing interested and affected parties of the decision;*
- (ii) informing interested and affected parties where the decision can be accessed; and*

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www.westerncape.gov.za/eadp

(iii) drawing the attention of interested and affected parties to the fact that an appeal may be lodged against the decision in terms of Chapter 7 of these Regulations, if such appeal is available under the circumstances of the decision,

in the newspapers contemplated in regulation 54(2)(c) and (d) and which newspaper was used for the placing of advertisements as part of the public participation process.

The granting of this environmental authorisation and exemption (hereinafter referred to as the "environmental authorisation") is subject to compliance with the conditions set out in section E below.

A. DETAILS OF THE APPLICANT FOR THIS ENVIRONMENTAL AUTHORISATION

Electra Capital (Pty) Ltd.
c/o Mr. S. Reader
P.O. Box 704
GREENPOINT
8000

Tel: (021) 424 1189
Fax: (086) 613 8886

The abovementioned company is the holder of this environmental authorisation and is hereinafter referred to as "the applicant".

B. LIST OF ACTIVITIES AUTHORISED

Government Notice No. R545 of 18 June 2010–

Activity Number: 1
Activity Description:

The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more.

Activity Number: 8
Activity Description:

The construction of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex.

Activity Number: 15
Activity Description:

Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more;

except where such physical alteration takes place for:

- (i) linear development activities; or*
- (ii) agriculture or afforestation where activity 16 in this Schedule will apply.*

Government Notice No. R546 of 18 June 2010–

Activity Number: 14
Activity Description:

The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for:

- (1) purposes of agriculture or afforestation inside areas identified in spatial instruments adopted by the competent authority for agriculture or afforestation purposes;
- (2) the undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the activity is regarded to be excluded from this list;
- (3) the undertaking of a linear activity falling below the thresholds in Notice 544 of 2010.

(a) In Eastern Cape, Free State, KwaZulu-Natal, Gauteng, Limpopo, Mpumalanga, Northern Cape, Northwest and Western Cape:

- i. All areas outside urban areas.

The abovementioned list is hereinafter referred to as "the listed activities".

The applicant is herein authorised to undertake the following alternative related to the listed activities:

The proposed development entails the clearance of indigenous vegetation for the construction of a 65 MegaWatt ("MW") Photovoltaic ("PV") solar plant on Farm No. 400, Bergvaley, Cederberg. The site is situated on either side of the R365.

The proposed development will include the following components:

- PV panel arrays with a maximum height of approximately 5m;
- A sun tracking system will be installed on each panel;
- Internal roads (minor gravel roads);
- Inverters and cabins;
- An internal substation to link to the existing Paleisheuwel substation;
- Two overhead 132kV powerlines which will cross the R365;
- An equipment laydown area;
- A workshop and storage area;
- A security fence around the solar park with a guarded security point; and
- Associated infrastructure.

Both the mounting system alternatives considered, namely the deep screw system or a small concrete foundation block may be implemented.

Approximately 30cm of topsoil will be removed during the construction phase and used to create a berm.

Access will be gained off the R365. All internal roads will not exceed 4m in width.

Approximately 10 water storage tanks will be installed to store water on site. Each tank will have a capacity of approximately 10 000L. Water will be obtained from a borehole situated on the property.

C. PROPERTY DESCRIPTION AND LOCATION

The listed activities will take place on Farm No. 400, Bergvaley, Cederberg. The site is approximately 3km from Paleisheuwel and 20km east of Redelingshuys. The site is situated on either side of the R365.

The SG 21 digit code is: C0200000000040000000 (Farm No. 400)

Co-ordinates: 32° 25.08' 50" South
18° 43.53' 01" East

hereinafter referred to as "the site".

D. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

Sharples Environmental Services
c/o Ms. L. Jansen
P.O. Box 443
MILNERTON
7435

Tel: (021) 552 8777
Fax: (086) 575 2869

E. CONDITIONS OF AUTHORISATION

1. This environmental authorisation is valid for a period of **five years** from the date of issue. The holder must commence with all the listed activities within the said period or this environmental authorisation lapses and a new application for environmental authorisation must be submitted to the competent authority, unless the holder has lodged a valid application for the amendment of the validity period of this environmental authorisation, before the expiry of this environmental authorisation. In such instances, the validity period will be automatically extended ("the period of administrative extension") from the day before this environmental authorisation would otherwise have lapsed, until the amendment application for the extension of the validity period is decided. The listed activities, including site preparation, may not commence during the period of administrative extension.
2. The listed activities, including site preparation, may not commence within 20 (twenty) calendar days of the date of issue of this environmental authorisation. In the event that an appeal notice and subsequent appeal is lodged with the competent authority, the effect of this environmental authorisation may be suspended until such time as the appeal is decided.
3. The applicant must in writing, within 12 (twelve) calendar days of the date of this decision and in accordance with regulation 10(2)–
 - 3.1. Notify all registered interested and affected parties of –
 - 3.1.1. the outcome of the application;
 - 3.1.2. the reasons for the decision as included in Annexure 1;
 - 3.1.3. the date of the decision; and
 - 3.1.4. the date of issue of the decision;
 - 3.2. Draw the attention of all registered interested and affected parties to the fact that an appeal may be lodged against the decision in terms of Chapter 7 of the NEMA EIA Regulations detailed in section F below; and
 - 3.3. Draw the attention of all registered interested and affected parties to the manner in which they may access the decision.
4. A minimum of 7 (seven) calendar days notice, in writing, must be given to the competent authority before commencement of construction activities.
 - 4.1. The notice must make clear reference to the site details and EIA Reference number given above.
 - 4.2. The notice must also include proof of compliance with the following conditions described herein:

Conditions: 2, 3, 13, and 18.1.
5. The holder is responsible for ensuring compliance with the conditions by any person acting on his behalf, including an agent, sub-contractor, employee or any person rendering a service to the holder.

6. Any changes to, or deviations from the scope of the description set out in section B above must be accepted or approved, in writing, by the competent authority before such changes or deviations may be implemented. In assessing whether to grant such acceptance/approval or not, the competent authority may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder to apply for further authorisation in terms of the applicable legislation.
 7. The applicant must notify the competent authority in writing, within 24 hours thereof if any condition herein stipulated is not being complied with.
 8. The draft Environmental Management Programme ("EMP") submitted as part of the application for environmental authorisation is hereby approved on condition that the following amendments are made to the EMP, and must be implemented.
 - 8.1. An alien vegetation control programme must be developed and implemented.
 - 8.1.1. this must be undertaken by a suitably qualified horticulturalist/botanist; and
 - 8.1.2. the alien vegetation control programme must exclude the removal of the existing pine trees as these trees act as a visual screen along the R365.
 - 8.2. The manner and frequency for updating the EMP must be done as follows:
 - 8.2.1. an application for amendment to the EMP must be submitted to the competent authority if any further amendments are to be made to the EMP, other than those mentioned above, and this may only be implemented once the amended EMP has been authorised by the competent authority.
 - 8.3. The EMP must be included in all contract documentation for all phases of implementation.
 9. A copy of the environmental authorisation and the EMP must be kept at the site where the listed activities will be undertaken. Access to the site referred to in section C above must be granted and, the environmental authorisation and EMP must be produced to any authorised official representing the competent authority who requests to see it for the purposes of assessing and/or monitoring compliance with the conditions contained herein. The environmental authorisation and EMP must also be made available for inspection by any employee or agent of the applicant who works or undertakes work at the site.
-
10. The applicant must submit an application for amendment of the environmental authorisation to the competent authority where any detail with respect to the environmental authorisation must be amended, added, substituted, corrected, removed or updated. Further, the rights granted by this environmental authorisation are personal rights (i.e. not attached to a property, but granted to a natural or juristic person). As such, only the holder may undertake the activities authorised by the competent authority. Permission to transfer the rights and obligations contained herein must be applied for in the following manner:
 - 10.1. The applicant must submit an originally signed and dated application for amendment of the environmental authorisation to the competent authority stating that he wishes the rights and obligations contained herein to be transferred, and including (a) confirmation that the environmental authorisation is still in force (i.e. that the validity period has not yet expired or the activities were lawfully commenced with); (b) the contact details of the person who will be the new holder; (c) the reasons for the transfer; (d) an originally signed letter from the proposed new holder acknowledging the rights and obligations contained in the environmental authorisation and indicating that he has the ability to implement the mitigation and management measures and to comply with the stipulated conditions; and

- 10.2. The competent authority will issue an amendment to the new holder either by way of a new environmental authorisation or an addendum to the existing environmental authorisation if the transfer is found to be appropriate.
11. Non-compliance with a condition of this environmental authorisation or EMP may result in suspension of this environmental authorisation and may render the holder liable for criminal prosecution.
12. Notwithstanding this environmental authorisation, the holder must comply with any other statutory requirements that may be applicable to the undertaking of the listed activities.
13. The holder must appoint a suitably experienced Environmental Control Officer ("ECO") for the construction phase of implementation before commencement of any land clearing or construction activities to ensure compliance with the EMP and the conditions contained herein.
14. An integrated waste management approach, which is based on waste minimisation and incorporates reduction, recycling, re-use and disposal, where appropriate, must be employed. Any solid waste must be disposed of at a landfill licensed in terms of the applicable legislation.
- 14.1. Equipment used in the solar plant (during decommissioning and also defective equipment during operation) must be recycled and reused where possible to avoid the filling of already limited landfill space; and
- 14.2. Batteries that store solar energy must be reused or recycled.
15. No surface or ground water may be polluted due to any actions on the site. The applicable requirements with respect to relevant legislation pertaining to water must be met.
- 15.1. Stormwater and water used to wash the panels must be recycled and reused where possible during the operational phase; and
- 15.2. Wash-water used to clean the panels must not contain any chemicals or hazardous materials that will increase the risk of soil and water contamination.
16. The applicable requirements with respect to relevant legislation pertaining to occupational health and safety must be adhered to.
17. Should any heritage remains be exposed during excavations or any actions on the site, these must immediately be reported to the Provincial Heritage Resources Authority of the Western Cape, Heritage Western Cape (in accordance with the applicable legislation). Heritage remains uncovered or disturbed during earthworks must not be further disturbed until the necessary approval has been obtained from Heritage Western Cape. Heritage remains include: archaeological remains (including fossil bones and fossil shells); coins; indigenous and/or colonial ceramics; any articles of value or antiquity; marine shell heaps; stone artifacts and bone remains; structures and other built features; rock art and rock engravings; shipwrecks; and graves or unmarked human burials.
18. In accordance with the Botanical Impact Assessment (dated 31 October 2012, and updated 08 March 2013), the following mitigation measures must be implemented:
- 18.1. The following activities must occur prior to the commencement of the land clearing activities:
- 18.1.1. the site and the "No-Go" areas (identified in the Botanical Assessment) must be clearly demarcated;
- 18.1.2. the vegetation on the site must be brush-cut; and
- 18.1.3. all other areas must be burned (in consultation with the relevant authorities).

- 18.2. The stockpiling of brush-cuttings must be covered with shade netting to minimise potential dust and erosion.
 - 18.2.1. brush-cutting stockpiles must not exceed 2m in height at any given time.
- 18.3. Suitable indigenous vegetation (which is indigenous in the area) must be planted between the PV solar panels once they are installed to minimise potential erosion impacts. This must be completed before the facility becomes operational.
19. The following mitigation measures with respect to fuel must be implemented during the construction phase:
 - 19.1. All fuel stored on site must be confined to specific, secured, and banded areas. Temporary storage of fuel on site during the construction phase must not exceed 30m³ at any given time; and
 - 19.2. Drip trays must be provided for all construction equipment and generators that may require re-fuelling on site to avoid possible spillage of fuel/oil.
20. Adequate ablution facilities must be provided for staff on site during all phases of the proposed development. The ratio of 15 people per ablution facility must not be exceeded.
21. The following mitigation measures with respect to the impacts on birds must be implemented:
 - 21.1. Where new aboveground powerlines are constructed, the powerlines must be marked with anti-collision marking devices to minimise the potential impact on birds;
 - 21.2. The potential impact(s) on birds must be evaluated through monitoring by an avifaunal specialist at least once a year (post-construction);
 - 21.3. Any avian mortality or injury at the plant must be recorded daily and reported to the avifaunal specialist annually; and
 - 21.4. The avifaunal monitoring report must be included in the audit reports to be submitted to this Directorate. Furthermore, the monitoring report must be provided to the West Coast Bird Club and Birdlife South Africa for recording purposes.
22. The Forward Africa Agricultural Development Agency ("FAADA") (as proposed and conceptualised by the applicant in the EIA process) project must be established prior to the commencement of the operational phase.
 - 22.1. The FAADA project must establish partnerships with local industries to educate schools, communities and leaders about agriculture in the Western Cape and the benefits of renewable energy within the cycle of sustainable food production and security; and
 - 22.2. The FAADA project must be reported on in the audit reports, including the first audit report.
23. The following mitigation measures with respect to light impacts must be implemented during all phases of the proposed development:
 - 23.1. All lighting must be directional to light up specifically identified areas; and
 - 23.2. All lighting must be down lighting except when required in terms of specific legislative requirements.
24. Employment opportunities must be afforded to the local community during all phases of the proposed development.
25. The holder of this environmental authorisation must submit an Environmental Audit Report to this Directorate approximately 1 (one) year after the operational phase has commenced for information and compliance monitoring purposes.

- 25.1. Within one year of the PV solar plant ceasing to be functional for the purpose for which it is now authorised, it must be removed at the expense of the applicant, and the site, including all associated infrastructure, must be rehabilitated to the satisfaction of this Directorate.
 - 25.1.1. the applicant must submit an Environmental Audit Report to the competent authority approximately 6 months after the proposed development has been decommissioned; and
 - 25.1.2. when the proposed activity is decommissioned, the applicant must undertake the required actions as prescribed by legislation at the time and comply with all relevant legal requirements administered by any relevant and competent authority at the time.

F. APPEALS

Appeals must comply with the provisions contained in Chapter 7 of the NEMA EIA Regulations.

1. An appellant must –
 - 1.1. Submit a notice of intention to appeal to the Minister, within 20 (twenty) calendar days of the date of the decision;
 - 1.2. Submit the appeal within 30 (thirty) calendar days after the lapsing of the 20 (twenty) calendar days contemplated in regulation 60(1), for the submission of the notice of intention to appeal; and
 - 1.3. Within 10 (ten) calendar days of having lodged the notice of intention to appeal, provide each person and organ of state registered as an interested and affected party in respect of the application, or the applicant, with –
 - 1.3.1. a copy of the notice of intention to appeal form; and
 - 1.3.2. a notice indicating where and for what period the appeal submission will be made available for inspection by such person, organ of state, or applicant, on the day of lodging it with the Minister, and that a responding statement may be made on the appeal within 30 (thirty) calendar days from the date the appeal submission was lodged with the Minister.
2. A person, organ of state or applicant who submits a responding or answering statement in terms of regulation 63 must within 10 (ten) calendar days of having submitted the responding or answering statement, serve a copy of the statement on the other party.
3. If the person, organ of state or applicant fails to meet a timeframe with respect to the requirements as detailed above, the person, organ of state or applicant must immediately submit a written explanation to the Ministry providing a concise explanation for the non-compliance.
4. All notice of intention to appeal and appeal forms must be submitted by means of one of the following methods:

By post: Western Cape Ministry of Local Government, Environmental Affairs and Development Planning
Private Bag X9186
CAPE TOWN
8000

By facsimile: (021) 483 4174; or

By hand: Attention: Mr J. de Villiers
Room 305 A
3rd Floor Leeusig Building (Entrance at: Utilitas Building, 1 Dorp Street, Cape Town,
8001)

5. A prescribed notice of intention to appeal form and appeal form as well as assistance regarding the appeal processes is obtainable from the office of the Minister at: Tel. (021) 483 3721, E-mail Jaap.DeVilliers@westerncape.gov.za or URL <http://www.westerncape.gov.za/eadp>.

G. DISCLAIMER

The Western Cape Government, the Local Authority, committees or any other public authority or organisation appointed in terms of the conditions of this environmental authorisation shall not be responsible for any damages or losses suffered by the holder, developer or his successor in any instance where construction or operation subsequent to construction is temporarily or permanently stopped for reasons of non-compliance with the conditions as set out herein or any other subsequent document or legal action emanating from this decision.

Your interest in the future of our environment is appreciated.

Yours faithfully


MR. ZAHR TOEFY
DIRECTOR: LAND MANAGEMENT (REGION 2)

DATE OF DECISION: 07/05/2013

Copies to: (1) Ms. L. Jansen (Sharples Environmental Services cc)
(2) Mr. A. Booysen (Cederberg Municipality)

Fax: (086) 575 2869
Fax: (027) 482 1933

FOR OFFICIAL USE ONLY:

EIA REFERENCE NUMBER:	16/3/1/2/F2/2/3047/12
NEAS EIA REFERENCE NUMBER:	WCP/EIA/0000976/2012
EXEMPTION REFERENCE NUMBER:	16/3/1/4/F2/2/3048/12
NEAS EXEMPTION REFERENCE NUMBER:	WCP/EIA/EX/0000190/2012

ANNEXURE 1: REASONS FOR THE DECISION

In reaching its decision, the competent authority, *inter alia*, considered the following:

- a) The information contained in the Scoping & EIA application form and the exemption application form dated 19 June 2012 and received by the competent authority on 20 June 2012, the Scoping Report received by the competent authority on 04 December 2012, the Environmental Impact Assessment Report received by the competent authority on 22 March 2013, the EMP submitted together with the Environmental Impact Assessment Report, and the comments and response report received by the competent authority on 08 April 2013;
- b) Relevant information contained in the Departmental information base, including, the Guidelines on Public Participation, Alternatives and Exemptions (dated October 2011);
- c) The objectives and requirements of relevant legislation, policies and guidelines, including section 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998);
- d) The comments received from interested and affected parties and the responses provided thereon, as included in the Environmental Impact Assessment Report dated 15 March 2013 and the comments and response report received by the competent authority on 08 April 2013;
- e) The consent provided by the landowner (dated December 2011);
- f) The sense of balance of the negative and positive impacts and proposed mitigation measures; and
- g) No site visits were conducted. The competent authority had sufficient information before it to make an informed decision without conducting a site visit.

All information presented to the competent authority was taken into account in the consideration of the application for environmental authorisation. A summary of the issues which, according to the competent authority, were the most significant reasons for the decision is set out below.

1. Exemption

Exemption from Regulation 10(2)(d) was granted due to the fact that no comments related to the exemption application were received from registered interested and affected parties ("I&APs"). All registered I&APs were notified of the exemption application, as required. No significant concerns were raised by I&APs in this regard.

As such, the exemption application was regarded as appropriate by the competent authority in this instance based on the adequate public participation process and no comments submitted with respect to the application.

2. The suspension of the environmental authorisation and exemption

An environmental authorisation and exemption was issued by this Directorate on 25 October 2012 (Ref. No's. E12/2/4/1-F1/13-3027/12 (Basic Assessment Application) and E12/2/4/5-F1/13-3014/12 (Exemption Application)) for the proposed establishment of a 10MW solar plant on the eastern section of Farm Bergvaley No. 400, Cederberg. The preferred alternative entailed the construction of a solar plant within the existing Rooibos tea stripped areas in a north-south direction.

However, based on the feasibility investigation undertaken during the EIA phase of this application, it was determined that the abovementioned alternative would not be feasible and would be impractical from a financial perspective. Therefore, during the EIA phase of this application, alternative layouts were assessed. The preferred area on the eastern section of the R365 was therefore included in this assessment. Furthermore, due to bidding process for renewable energy projects, the applicant preferred to have one environmental authorisation for the proposed development.

Therefore based on above, the environmental authorisation and exemption (Ref. No's. E12/2/4/1-F1/13-3027/12 (Basic Assessment Application) and E12/2/4/5-F1/13-3014/12 (Exemption Application)) is hereby suspended and herewith replaced with this environmental authorisation.

3. Public Participation

The public participation process included:

- identification of and engagement with interested and affected parties;
- fixing a notice board at the site and any alternative site where the listed activities are to be undertaken on 10 July 2012;
- giving written notice to the owners and occupiers of land adjacent to the site and any alternative site where the listed activities are to be undertaken, the municipality and ward councillor, and the various organs of state having jurisdiction in respect of any aspect of the listed activities on 10 July 2012; and
- the placing of a newspaper advertisement in the 'Die Burger' on 13 July 2012.

All the concerns raised by interested and affected parties were responded to and adequately addressed during the public participation process. Specific management and mitigation measures have been considered in this environmental authorisation and in the EMP to adequately address the concerns raised.

The Department concurs with the environmental assessment practitioner's responses to the issues raised during the public participation process and has included appropriate conditions in this environmental authorisation and in the EMP.

3. Alternatives

Four alternatives were identified and assessed on Farm Bergvaley No. 400, Cederberg. Farm Bergvaley No. 400 is divided into the western and eastern sections by the R365. Both sections were mapped by the botanical specialist. The western and the eastern sections were assessed. The preferred area was previously authorised to accommodate a 10MW solar plant.

3.1. Alternative 1

Alternative 1 entails the construction of a 65MW photovoltaic plant and associated infrastructure on Farm Bergvaley No. 400, Cederberg. The site is situated on the west side of the R365.

In terms of this alternative, panels would be placed within the areas currently used as Rooibos strip cultivation. The panels would thus be situated in a north-south direction.

The total development footprint of the plant would be approximately 393ha.

Although Alternative 1 does not entail the clearance of vegetation, the proposed development would still negatively impact on the biophysical condition of the site due to the drainage lines. From an agricultural perspective, it would have a high negative impact due to the high agricultural potential of the site. Furthermore, due to the north-south alignment of the panels, this would require a more costly panel in order to yield the maximum expected energy generation of the plant.

3.2. Alternative 2

Alternative 2 entails the construction of a 65MW photovoltaic plant and associated infrastructure on Farm Bergvaley No. 400, Cederberg. Alternative 2 is situated on the east side of the R365.

In terms of this alternative, panels would be placed within the areas currently used as Rooibos strip cultivation. The panels would thus be situated in a north-south direction.

The total development footprint of the plant would be approximately 260ha.

Although Alternative 2 would be more feasible from a biophysical perspective as opposed to Alternative 1, the cost to connect the proposed development to the existing Paleisheuwel substation would be greater as the site is situated relatively further away from the substation. This alternative is therefore not regarded as feasible.

3.3. Alternative 3

Alternative 3 entails the clearance of vegetation for the construction of a 65MW photovoltaic plant and associated infrastructure on Farm Bervaley No. 400, Cederberg. Alternative 3 is situated on the west side of the R365.

The panels will be situated in an east-west direction, which will reduce the cost of the technology that must be used.

The total development footprint will be approximately 189ha.

Although alternative 3 has a lower agricultural potential, has a smaller footprint and will result in lower costs, alternative 3 is not deemed the preferred alternative as it occurs adjacent to and within a Critical Biodiversity Area in terms of the Cape Fine Scale Mapping (2007). Furthermore, it would significantly impact on the visual aesthetics of the area as it is visible to users of the R365 secondary road.

3.4. Alternative 4 (the preferred alternative – herewith authorised)

Alternative 4 entails the clearance of indigenous vegetation for the construction of a 65MW PV solar plant on Farm No. 400, Bergvaley, Cederberg. The site is situated on either side of the R365 and consists of areas 1a and 2d (as indicated in site plan in the final EIAR (dated 15 March 2013)).

The proposed development will include the following components:

- PV panel arrays with a maximum height of approximately 5m;
- A sun tracking system will be installed on each panel;
- Internal roads (minor gravel roads);
- Inverters and cabins;
- An internal substation to link to the existing Paleisheuvel substation;
- Two overhead 132kV powerlines which will cross the R365;
- An equipment laydown area;
- A workshop and storage area;
- A security fence around the solar park with a guarded security point; and
- Associated infrastructure.

Both the mounting system alternatives considered, namely the deep screw system or a small concrete foundation block may be implemented.

Approximately 30cm of topsoil will be removed during the construction phase and used to create a berm.

Access will be gained off the R365. All internal roads will not exceed 4m in width.

Approximately 10 water storage tanks will be installed to store water on site. Each tank will have a capacity of approximately 10 000L. Water will be obtained from a borehole situated on the property.

The panels will be situated in an east-west direction which will reduce the cost of the technology that will be used.

The total development footprint will be approximately 196ha.

Although the vegetation will be cleared, Alternative 4 is deemed as the preferred alternative as it is situated on areas with low agricultural potential and has a comparatively smaller footprint as opposed to alternatives 1, 2 and 3. Furthermore, cost reduction is evident as both areas are closely situated to the existing Paleisheuvel substation and both will yield the maximum expected energy output due to the east-west direction of the panels.

The following technology alternatives were identified and assessed:

3.5. Technology alternative 1

Technology alternative 1 entails the installation of Concentrated PV ("CPV") technology. CPV technology uses lenses that focus and concentrate light energy. CPV technology therefore harvests more energy from the sun in this way. However, these structures must be constructed as high as practically possible and may reach heights of up to 10m. Further, it requires large amounts of water for cooling purposes.

Therefore, based on the above the CPV technology was not deemed as the preferred technology alternative.

3.6. Technology alternative 2 (the preferred alternative – herewith authorised)

Technology alternative 2 entails the installation of PV solar cell technology. The solar cells convert solar energy into electricity by capturing light. Many solar cells are used and are collectively termed solar panels. Solar panels may be attached to a fixed or tracking system depending on the position of the solar panels relative to the sun.

Solar panels can be constructed to a height range between 2 and 5m. This indirectly has a lower impact on avifauna. Further, it has a reduced visual impact and is easier to transport.

Therefore, based on the above, the PV solar cell technology is the preferred technology alternative.

3.7. "No-Go" alternative

The "No-Go" alternative is the option of not constructing the PV plant on Farm Bergvaley No 400, Cederberg. The proposed activity serves as an alternative, renewable source of energy and will also result in the creation of additional employment opportunities. Given that the preferred alternative will not result in unacceptable environmental impacts, the "No-Go" alternative was not warranted.

4. **Impact Assessment and Mitigation measures**

4.1. Activity Need and Desirability

As stipulated in the White Paper on Renewable Energy (2003), South Africa presently has a target of supplying 10 000GWh of renewable energy by 2013. The Minister of Energy has determined that 3725 MW of renewable energy is required in order to ensure continued uninterrupted supply of electricity in South Africa.

The renewable energy Independent Power Producer Procurement Programme was therefore launched in August 2011. Within 4 months of the launch, the first round of bidders (all renewable energy projects who obtained environmental authorisation from the National Department of Environmental Affairs) contributed 1415MW out of the required 3725MW of renewable energy targets set. Only a portion of solar energy from a total of 1450MW solar PV renewable energy required has been secured thus far.

Furthermore, solar PV renewable energy is therefore still required to be added to the grid in order to meet the aforementioned targets.

The proposed development will therefore contribute approximately 65MW of electricity into the national electricity grid, and will thus contribute to South Africa's targets.

4.2. Water use

Water will be used to clean the PV panel arrays. Approximately 8 Litres ("L") of water will be required per panel per annum. Approximately 10 water storage tanks will be used to store water on site. Each tank will have a capacity of approximately 10 000L. Water will be obtained from a borehole situated on the property. A General Authorisation was issued by the Department of Water Affairs on 08 November 2012 permitting the abstraction of water in this regard.

The Department of Water Affairs indicated (in their comment dated 14 February 2013) that they do not object to the proposed development.

4.3. Heritage/ Archaeological/ Visual Impacts

Due to the footprint of the proposed development, a Notice of Intent to Develop was submitted to Heritage Western Cape ("HWC") on 25 September 2012. HWC indicated (in their comment dated 10 October 2012) that a Heritage Impact Assessment be conducted to assess the potential archaeological and visual impacts associated with the proposed development.

Heritage

A Heritage Impact Assessment ("HIA") (compiled by Ron Martin Heritage Consultancy, dated November 2012) was therefore undertaken to determine the potential impacts on heritage. It was determined that the proposed development will not impact significantly on heritage and archaeological resources. However, the specialist indicated that the PV solar panels are the preferred technology alternative as it reduces the scale at which the proposed development will occur. Further, the eastern section of the Farm Bergvaley No. 400 is the preferred alternative for the proposed development.

Archaeological

An Archaeological Impact Assessment ("AIA") compiled by the Agency for Cultural Resource Management, dated November 2012. No archaeological heritage was identified by the Heritage specialist on both sections of Farm Bergvaley No. 400. Therefore, no archaeological mitigation measures were recommended.

Visual Impacts

A Visual Impact Assessment ("VIA") (compiled by Cave Klapwijk and Associates, dated November 2012) was undertaken to determine the potential visual impacts associated with the proposed development. The specialist indicated that the western section of Farm Bervaley No. 400, is relatively flat and the eastern section slopes upward. Potential visual receptors identified include adjacent farms and users of the R365. The specialist identified the height of the panels and the technology alternatives as potential visually intrusive structures. The installation of the PV solar panel is less visually intrusive as it ranges between 2-5m in height. Although the western section of the Farm Bergvaley No. 400 was the preferred option for the proposed development, due to the fact that the western section had a greater agricultural potential, the eastern section was thus preferred.

Due to the revised layout of the proposed development, an annexure (dated March 2013) to the VIA (dated November 2012) was provided by the specialist. The specialist indicated that Alternative 4 is the preferred alternative as the footprint is greatly reduced and the existing pine trees that occur along the R365 will act as a visual screen for the users of the R365. Suitable indigenous vegetation (which is indigenous in the area) will be planted between the PV solar panels during the construction phase to minimise potential erosion impacts. Mitigation measures with respect to lighting have been included as conditions set in this environmental authorisation and in the EMP.

HWC further indicated (in their comment dated 20 February 2013) that they have no objection to the proposed development on condition that the mitigation measures recommended in the VIA (dated November 2012) be implemented. The recommended mitigation measures have been included as conditions set in this environmental authorisation and in the EMP.

4.4. Biophysical Impacts

A Botanical Impact Assessment (compiled by Nick Helme Botanical Surveys, dated 31 October 2012) was undertaken to determine the potential botanical impacts associated with the proposed development. The vegetation on site was identified as Leipoldtville Sand Fynbos and Graafwater Sandstone Fynbos, which are classified as vulnerable and least threatened, respectively. Farm Bergvaley No. 400, Cederberg contains numerous wetlands, rooibos tea strip farming areas and areas that are identified as Critical Biodiversity Areas. Due to the sensitivity of some areas of the farm, the specialist mapped "No-Go" areas to inform the best environmentally acceptable layout of the proposed development. Alternative 2 was thus identified as suitable, on condition that establishment of the proposed development occurs within the stripped areas. CapeNature indicated (in their comment dated 17 January 2013) that they are satisfied with the recommendations of the various specialist studies.

However, due to the fact that the construction of the PV plant within the stripped areas was not deemed financially feasible, the layout of the proposed development was revised and two additional alternatives were provided. As such, an annexure (dated 08 March 2013) to the Botanical Assessment (dated 31 October 2012) was provided by the specialist. The alternatives were then comparatively assessed and it was determined that the preferred alternative (i.e. areas 1a and 2d) would result in the lowest biophysical impact. In addition, CapeNature indicated (in their comment dated 28 March 2013) that although the removal of vegetation is not desirable, the preferred alternative has the least botanical impact. Further, the recommended mitigation measures have been included as conditions set in this environmental authorisation and in the EMP.

4.5. Fauna Impacts

A Fauna Impact Assessment (compiled by B. H. Erasmus Environmental Consultants, dated 12 October 2012 and updated on 22 February 2012) was undertaken to determine the potential impacts on faunal species which occur on the site. The specialist indicated that no red data species were encountered during the various field visits. Further, due to the existing agricultural activities, it was anticipated that the proposed development will not negatively impact on the faunal aspects of the site. Therefore, no mitigation measures were recommended.

4.6. Agricultural Impacts

An Agricultural Impact Assessment (compiled by Johann Lanz (a private soil scientist), dated November 2012) was undertaken to determine the agricultural potential of the site. The specialist indicated that the soils are limited by low clay content, low organic matter content and the aridity of the environment. It is further limited by water availability and the lack of irrigation infrastructure. As such, the agricultural suitability of all areas as per alternatives 1, 2, 3 and 4 is low. These areas are therefore more suited to Rooibos tea cultivation. Both sections of Farm Bergvaley No. 400 (i.e. the western and eastern sections) were investigated. The specialist determined that areas on the eastern section had the lowest agricultural potential when comparatively assessed.

The Western Cape Government: Agriculture indicated (in their comment dated 13 February 2013) that they cannot support the proposed alternatives 1 and 2 of the proposed development due to the loss of cultivated land.

However, due to the revised layout of the proposed development, an annexure (dated March 2013) to the Agricultural Impact Assessment (dated November 2012) was provided by the specialist. The agricultural potential of alternatives 1, 2, 3 and 4 were comparatively assessed. Alternatives 1 and 4 included area 1a which was identified as having the highest agricultural potential. However, due to the reduced footprint of Alternative 4 (the preferred alternative) it was deemed the environmentally acceptable.

Further, due to the temporary loss of agricultural land, the Forward Africa Agricultural Development Agency ("FAADA") project was conceptualised by the applicant. The implementation of the FAADA project will aim to educate the community about agriculture in the Western Cape and the benefits of renewable energy. Further, the Western Cape Government: Agriculture indicated (in their comment dated 06 April 2013) that they support the FAADA project. In addition, the recommended mitigation measures have been included as conditions set in this environmental authorisation and in the EMP.

4.7. Traffic

It is anticipated that traffic will only be generated during the construction phase and will therefore be temporary. Therefore, no significant traffic impacts are associated with the proposed development.

4.8. Noise

Noise during the construction phase is anticipated. However, this will be temporary in nature. Therefore, no significant noise impacts are associated with the proposed development.

4.9. Socio-economic

Approximately 325 employment opportunities will be created during the construction phase. Further employment opportunities will be presented during the operational life-cycle of the proposed PV solar plant.

4.10. Impact Assessment and significance

- The AIA (dated November 2012) indicated that no archaeological heritage was identified. Therefore, the potential archaeological impacts were assessed as low/negligible significance with and without mitigation measures;
- The HIA (dated November 2012) indicated that no significant heritage impacts are anticipated as the site has been previously used for agricultural activities. Therefore, the site was assessed as low significance with and without mitigation measures;
- The Botanical Assessment (dated 31 October 2012, and the annexure dated on 08 March 2013) indicated that the proposed development will impact on the botany of the site. However, the preferred site was determined to have low to medium significance after mitigation;
- The Avifaunal Assessment (dated 31 October 2012 and updated on 22 February 2013) indicated that due to existing agricultural activities, habitat fragmentation and loss has already occurred. Therefore, the site was assessed to have a low significance on the avifaunal species;
- The Agricultural Impact Assessment (dated November 2012) indicated that the soils are limited by low clay content, low organic matter content and the aridity of the environment and as such, the site has low agricultural suitability. The potential impacts were assessed as medium significance. However, the areas most limited were preferred for the proposed development and the potential impacts were reduced to have a low-medium significance; and

- The Visual Impact Assessment (dated November 2012, and the annexure dated March 2013) indicated that the proposed development will be visually intrusive to the users of the R365 secondary road and the farm workers. The potential impacts were assessed as medium to high significance. However, the recommended mitigation measures will reduce the potential impact to be of low significance.

National Environmental Management Act Principles

The National Environmental Management Principles (set out in section 2 of the NEMA, which apply to the actions of all organs of state, serve as guidelines by reference to which any organ of state must exercise any function when taking any decision, and which must guide the interpretation, administration and implementation of any other law concerned with the protection or management of the environment), *inter alia*, provides for:

- the effects of decisions on all aspects of the environment to be taken into account;
- the consideration, assessment and evaluation of the social, economic and environmental impacts of activities (disadvantages and benefits), and for decisions to be appropriate in the light of such consideration and assessment;
- the co-ordination and harmonisation of policies, legislation and actions relating to the environment;
- the resolving of actual or potential conflicts of interest between organs of state through conflict resolution procedures; and
- the selection of the best practicable environmental option.

The development will result in both negative and positive impacts.

Negative impacts include:

- The temporary loss of agricultural land;
- Potential loss of topsoil;
- The loss of indigenous vegetation;
- Potential visual impact;
- Potential loss of key avifaunal species;
- The use of potable water; and
- High quantities of waste generated (due to defective equipment during the operational phase)

The Department is satisfied that all the negative impacts of significance specified above will be addressed by the conditions contained in the EA and the mitigation measures contained in the EMP.

Positive impacts include:

- Income for the owner of the land;
- Implementation of Forward Africa Agricultural Development Agency;
- Alternative renewable energy production;
- Economic benefits for the local area;
- Creation of short-term and long-term employment opportunities; and
- Production of electricity which is of national importance.

In view of the above, the NEMA principles, compliance with the conditions stipulated in this environmental authorisation, and compliance with the EMP, the competent authority is satisfied that the proposed listed activities will not conflict with the general objectives of integrated environmental management stipulated in Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and that any potentially detrimental environmental impacts resulting from the listed activities can be mitigated to acceptable levels.

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