

**ENVIRONMENTAL IMPACT ASSESSMENT PROCESS
FINAL BASIC ASSESSMENT REPORT**

**REALIGNMENT OF A SECTION OF THE MN73 TO
ACCOMMODATE SOLAR ENERGY FACILITIES
NEAR PAULPUTS SUBSTATION, NORTHERN
CAPE PROVINCE**

DENC REF.: NC/BA/06/NAM/KHA/PAU1/2017

**FINAL BASIC ASSESSMENT REPORT
FOR SUBMISSION TO DENC**

APRIL 2017

Prepared for:

The Northern Cape Department of Roads and Public Works
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Application Number:	
Date Received:	

Basic Assessment Report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

- This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
- This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
- The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
- Where applicable **tick** the boxes that are applicable in the report.
- An incomplete report may be returned to the applicant for revision.
- The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
- This report must be handed in at offices of the relevant competent authority as determined by each authority.
- No faxed or e-mailed reports will be accepted.
- The signature of the EAP on the report must be an original signature.
- The report must be compiled by an independent environmental assessment practitioner.
- Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
- A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
- Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

PROJECT DETAILS

- Title** : Environmental Assessment Process
Final Basic Assessment Report for the Realignment of a section of the MN73 to accommodate Solar Energy Facilities near Paulputs Substation, Northern Cape.
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Heritage – David Morris, McGregor Museum
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Social - Pamela Sidambe, Savannah Environmental
(with external review by Neville Bews)
- Applicant** : Northern Cape Department of Roads and Public Works
- Client** : Abengoa Solar South Africa (Pty) Ltd
- Report Status** : Basic Assessment Report for submission to DENC
- DENC Ref No** : NC/BA/06/NAM/KHA/PAU1/2017
- Submission Date** : April 2017

When used as a reference this report should be cited as: Savannah Environmental (2017) Final Basic Assessment Report: Realignment of a section of the MN73 to accommodate Solar Energy Facilities near Paulputs Substation, Northern Cape.

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SUMMARY AND OVERVIEW OF THE PROJECT

The area immediately surrounding the Paulputs Substation (located approximately 45km north-east of Pofadder), and specifically Portion 4 of the Farm Scuitklip 92 has become a node for solar energy facility developments. Two Concentrated Solar Power (CSP) facilities and one photovoltaic (PV) facility have already been constructed in this area. These are known as the Kaxu Solar One, Xina Solar One and Konkoonsies I PV plants respectively. Another PV facility (known as Konkoonsies II PV) is to be constructed during 2017, and a third CSP facility (known as the Paulputs CSP project) received an environmental authorisation on 16 November 2016.

The development of the solar energy facilities are in response to the requirement for additional electricity generation capacity at a national level and in response to identified objectives of the national, provincial, local and district municipalities to develop renewable energy facilities. In order to facilitate the construction of the Paulputs CSP Facility, the Northern Cape Department of Roads and Public Works (NC DR&PW) propose that a section of the MN73 road traversing Portion 4 of the Farm Scuitklip 92 is realigned (refer to **Figure 1.1** and **Table 1.1**).

The MN73 realignment is proposed in order to accommodate the Paulputs CSP Facility while ensuring safe road use for the surrounding landowners currently utilising the MN73. The realignment of the road will entail:

- » the construction of a new section of road ~4km in length and ~7m wide (with a road reserve of 20m) according to approved Northern Cape Department of Roads and Public Works (NC DR&PW) plans and standards; and
- » the decommissioning of ~3km of the existing MN73 road as and where required after commissioning the realigned section. Portions of the decommissioned section of the MN73 road will not be rehabilitated where these are used to provide internal access for the Paulputs CSP Facility.

The Northern Cape Department of Roads and Public Works (NC DR&PW) will be responsible for operation and maintenance of the road.

The nature and extent of the MN73 realignment, as well as potential environmental impacts associated with the construction and operation phases are explored in more detail in this Basic Assessment report (hereafter referred to as the BA report). No alternative routes were assessed due to environmental and technical constraints identified during this BA process. A 40m wide corridor was assessed for the proposed realignment. The final placement of the road realignment within a 40m corridor will depend on local geotechnical, topographical conditions and allow for the avoidance of local environmental sensitivities.

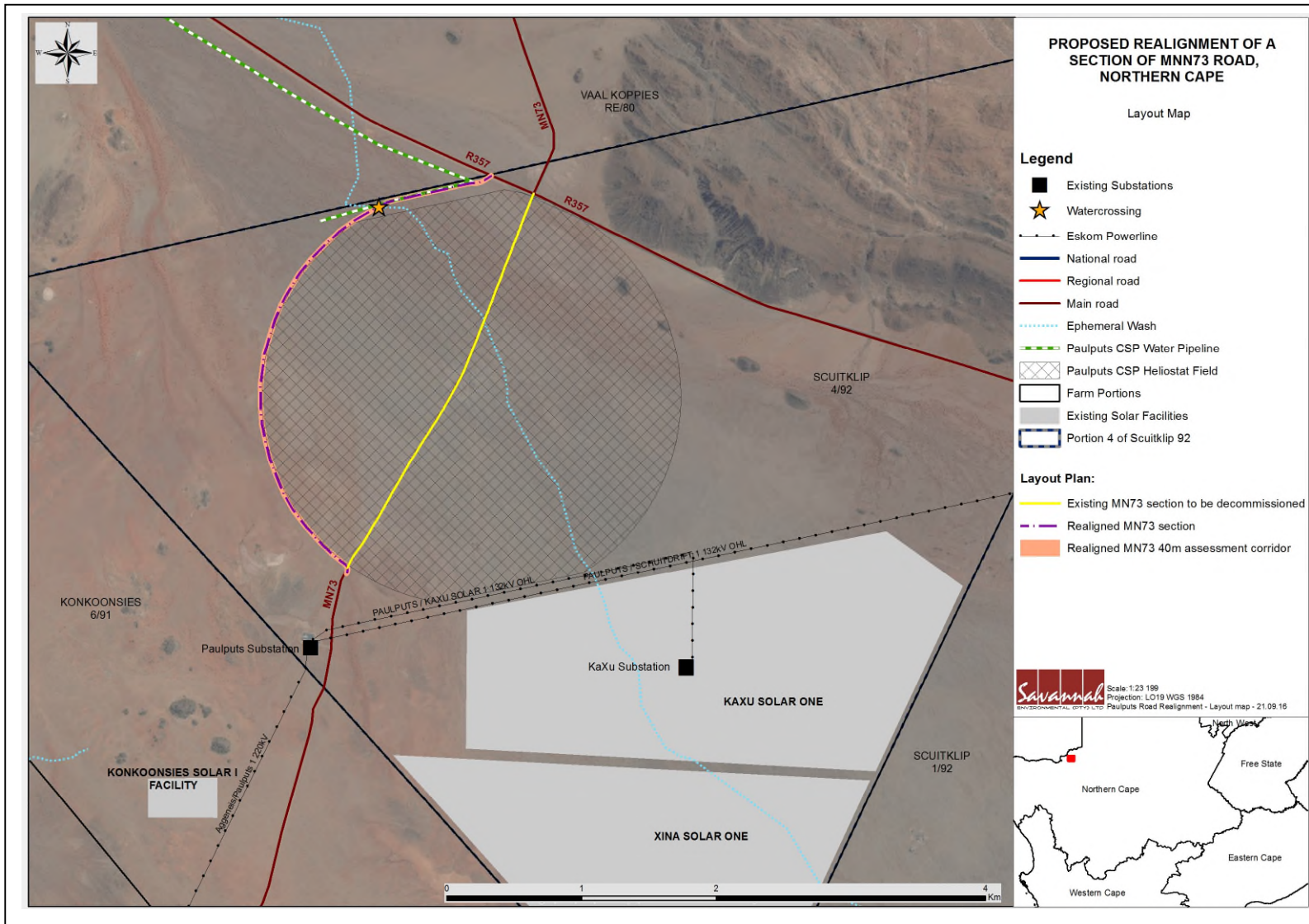


Figure 1: Layout Map indicating the proposed location and layout of the project. Refer to Appendix A for A3 map.

1.1. NEED AND DESIRABILITY FOR THE ROAD REALIGNMENT

The need and justification for the proposed road section realignment is linked to the solar energy node which is developing in the area surrounding the Paulputs Substation, and specifically with the authorised Paulputs CSP Facility. Abengoa Solar Power South Africa (Pty) Ltd has received environmental authorisation for the development of the Concentrated Solar Power (CSP) Project located on Portion 4 of the Farm Scuitklip 92 on 16 November 2016. It is the intention of Abengoa Solar Power South Africa (Pty) Ltd to bid the authorised Paulputs CSP Facility (Department of Environmental Affairs Ref: 14/12/16/3/3/2/870) in the Department of Energy's Renewable Energy Independent Power Producer Procurement (REIPPP) Programme. The MN73 road which currently traverses the development footprint of the authorised CSP Facility is required to be realigned outside of the planned and authorised development footprint to ensure road user safety.

The electricity demand in South Africa is placing increasing pressure on the country's existing power generation capacity and the resultant restrictions are severely damaging the economy. There is, therefore, a need for additional electricity generation options to be developed throughout the country. The purpose of the Paulputs CSP Facility is to add new capacity for generation of renewable energy to the national electricity mix and to aid in achieving the goal of a 43% share of all new power generation being derived from independent power producers (IPPs), as targeted by the Department of Energy (DoE). The sale, development, installation, maintenance and management of renewable energy facilities also have significant potential for job creation in South Africa.

From an overall environmental sensitivity and planning perspective, the proposed road realignment supports the broader strategic context of the municipality as it is linked to a renewable energy facility which is considered a driver for economic growth in the region as per the Namaqua District Municipality's Integrated Development Plan. It is also in line with broader societal needs and public interest as it is linked to the Paulputs CSP Facility, for which there is national policy and support. The section of the MN73 to be decommissioned is mostly used by a small number of local landowners travelling from Pofadder to their farms close to the Orange River. There will be no disruption to the use of the road as the section of the MN73 will only be decommissioned after the realignment has been fully commissioned. The section of the MN73 to be realigned is minor in extent and the length of the MN73 will increase by an additional 1km only. No exceedance of social, ecological or heritage impacts will result from the realignment of the section of the road, and no significant disturbance of biological diversity is anticipated, as detailed in this Basic Assessment Report.

1.2. REQUIREMENTS FOR A BASIC ASSESSMENT PROCESS

In terms of the Environmental Impact Assessment (EIA) Regulations of December 2014, published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), the applicant requires authorisation for the construction of the realigned section of the MN73. In terms of Sections 24 and 24D of NEMA (No 107 of 1998), as read with the EIA Regulations of GN R982, R983 and R985, a Basic Assessment process is required to be undertaken in support of the application for authorisation.

In terms of Section 24(1) of NEMA, the potential impact on the environment associated with these activities must be considered, investigated, assessed and reported on to the competent authority that has been charged by NEMA with the responsibility of granting Environmental Authorisations. As the Project is located in the Northern Cape, the competent authority is the Northern Cape Department of Environment and Nature Conservation (DENC).

The nature and extent of the proposed project is explored in more detail in this Basic Assessment Report. This report has been compiled in accordance with the requirements of the EIA Regulations of December 2014 (as per **Table A** below), and includes details of the activity description; the site, area and property description; the public participation process; the impact assessment; and the recommendations of the Environmental Assessment Practitioner (EAP).

TABLE A: Legal Requirements of the EIA Regulations

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1	CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
(1) A basic assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include— (a) details of— (i) the EAP who prepared the report; and	Section 1.3
(ii) the expertise of the EAP, including a curriculum vitae;	Section 1.3 Appendix H
(b) the location of the activity, including: (i) the 21 digit Surveyor General code of each cadastral land parcel;	Section A(1)
(ii) where available, the physical address and farm name;	Section B
(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section A(2) (a)
(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale;	Appendix A(1) and A(2) Appendix C
or, if it is— (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or	Appendix J1 Please note that the coordinates provided are approximately

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1	CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
<p>on land where the property has not been defined, the coordinates within which the activity is to be undertaken;</p>	<p>following the centreline of the corridor. These are not fixed and would be defined following the final micro-siting of the road alignment. A corridor of 40m is currently applied for to allow for micro-siting of the 7m wide road and road reserve of 20m.</p>
<p>(d) a description of the scope of the proposed activity, including— (i) all listed and specified activities triggered and being applied for; and (ii) a description of the activities to be undertaken including associated structures and infrastructure ;</p>	<p>Section A(1) a, b</p>
<p>(e) a description of the policy and legislative context within which the development is proposed including— (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and</p>	<p>Section A(11)</p>
<p>(ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;</p>	<p>Section A(11)</p>
<p>(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;</p>	<p>Section 1.1</p>
<p>(g) a motivation for the preferred site, activity and technology alternative;</p>	<p>Section 1.1 Section A(2)</p>
<p>(h) a full description of the process followed to reach the proposed preferred alternative within the site, including: (i) details of all the alternatives considered; (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;</p>	<p>Section 2 Section C Appendix E</p>
<p>(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</p>	<p>Section B Section D</p>
<p>(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts— (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;</p>	<p>Section D Appendix F</p>
<p>(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;</p>	<p>Appendix F</p>

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1	CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Appendix F Section D
(viii) the possible mitigation measures that could be applied and level of residual risk;	Appendix F Section D
(ix) the outcome of the site selection matrix;	N/A. <i>The purpose of the proposed Project is to accommodate the development footprint of the authorised Paulputs CSP Facility, and ensure road-user safety.</i>
(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and	Section A(2)
(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;	Section D(2)
(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including— (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and	Appendix F Appendix D
(ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	Appendix F Appendix D
(j) an assessment of each identified potentially significant impact and risk, including— (i) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impact and risk; (iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated;	Appendix F Appendix D
(k) where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;	Section D(2)
(l) an environmental impact statement which contains— (i) a summary of the key findings of the environmental impact assessment; (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and	Section D(2) Appendix A(3)

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1	CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
(iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	
(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr;	Section D(2)
(n) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	Section E
(o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section 1.4
(p) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	Section D
(q) where the proposed activity does not include Operation aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	N/A. <i>The project includes Operation aspects.</i>
(r) an undertaking under oath or affirmation by the EAP in relation to: (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and	Appendix H
(s) where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A.
(t) any specific information that may be required by the competent authority; and	N/A
(u) any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A

1.3. DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER AND EXPERTISE TO CONDUCT THE BASIC ASSESSMENT

The Northern Cape Department of Roads and Public Works has appointed Savannah Environmental as the independent environmental consultant to undertake the required Basic Assessment process and to identify and assess all the potential environmental impacts associated with the proposed project and propose appropriate mitigation and management measures in an Environmental Management Programme (EMPr). As part of these environmental studies, Interested & Affected Parties (I&APs) have been actively

involved through the public involvement process. Neither Savannah Environmental nor any of the specialist sub-consultants on this project are subsidiaries of or are affiliated to the Applicant. In addition, Savannah Environmental does not have any interest in secondary developments that may arise out of the authorisation of the proposed project.

Savannah Environmental is a specialist environmental consulting company providing holistic environmental management services, including environmental impact assessment and planning to ensure compliance and evaluate the risk of development and the development and implementation of environmental management tools. The Savannah Environmental team has considerable experience in environmental impact assessments and environmental management, and have been actively involved in undertaking environmental studies for a wide variety of projects throughout South Africa, and specifically in the Northern Cape.

The EAPs and Public Participation consultants from Savannah Environmental who are responsible for this project are:

- » *Thalita Botha*, the principle author of this report holds a BSc degree with Honours in Environmental Management and has one year of experience in environmental consulting. Her key focus is on environmental impact assessments, public participation, mapping (using ArcGIS), environmental management plans and programmes.
- » *Gabriele Wood*, holds an Honours Degree in Anthropology, obtained from the University of Johannesburg. She has 9 years of consulting experience in public participation and social research. Her experience includes the design and implementation of public participation programmes and stakeholder management strategies for numerous integrated development planning and infrastructure projects. Her work focuses on managing the public participation component of Environmental Impact Assessments and Basic Assessments undertaken by Savannah Environmental.
- » *Karen Jodas* is a registered Professional Natural Scientist and holds a Master of Science degree and has more than 20 years of experience consulting in the environmental field. Her key focus is on strategic environmental assessment and advice; management and co-ordination of environmental projects, which includes integration of environmental studies and environmental processes into larger engineering-based projects and ensuring compliance to legislation and guidelines; compliance reporting; the identification of environmental management solutions and mitigation/risk minimising measures; and strategy and guideline development. She is familiar with the local environment and specifically Portion 4 of the Farm Scuitklip 92, due to her prior involvement in the impact assessments undertaken for the CSP projects located on this farm.

In order to adequately identify and assess potential environmental impacts associated with the proposed project, Savannah Environmental has included specialist consultants to

conduct specialist assessments where required. The specialist consultants who assessed the Paulputs CSP Facility were also appointed to consider the MN73 road realignment (and in some instances the specialist assessments considered the impacts of both projects through a single assessment). The specialist consultants include:

- » Ecology (Flora and Fauna) – Adrian Hudson, Hudson Ecology
- » Heritage – David Morris, McGregor Museum Department of Archaeology
- » Traffic - Stephen Fautley, TECHSO Western Cape
- » Social - Pamela Sidambe, Savannah Environmental social specialist and Neville Bews and Associates

Curricula vitae for the Savannah Environmental project team and specialist consultants are included in **Appendix H**.

Where relevant, reports, information and data from studies which supported other applications for environmental authorisations on Portion 4 of the Farm Scuitklip 92 have informed and been used in the compilation of this assessment. These reports have been referenced in, and where relevant, appended to this BAR.

1.4. ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations are applicable to the studies undertaken within this Basic Assessment Process:

- » All information provided by the Applicant to the environmental team was correct and valid at the time it was provided.
- » It is assumed that the identified 40m corridor represents a technically acceptable solution for the road realignment (taking into account that optimisation of the route might be required based on geotechnical investigations).
- » Studies assume that any potential impacts on the environment associated with the proposed development will be avoided or mitigated accordingly, based on the findings of this Basic Assessment Report and the associated Specialist Studies.
- » This report and its investigations are project-specific, and consequently the environmental team did not evaluate any other alternatives.

Refer to the specialist studies in **Appendices D1 – D4** for specific limitations.

COMMENT ON THE BASIC ASSESSMENT REPORT

As required in terms of the EIA Regulations, 2014, the Basic Assessment report was made available for a 30-day review period from **25 January 2017** to **24 February 2017**. The report was available for public review at the following locations:

- » Pofadder Public Library
- » www.savannahsa.com

Comments received during this 30-day review period and throughout the process have been included within this Final Basic Assessment Report.

Savannah Environmental has compiled a table (refer to Table 1 below) which outlines the DENC requirements as stated in the comments on the BAR dated 30 March 2017, and where the requirements have been addressed within this Final BAR for ease of reference.

Table 1: Comments received by DENC during the public review of the Basic Assessment

No.	DENC Comment	Response and cross reference in this BA Report
a)	The closest memorial site is 370m but buffer to be 10m, no memorial sites within the 40m corridor.	It is confirmed that there are no memorial sites located within the 40m corridor.
b)	Is the Memorial site below Ysterberg excluded from the development footprint?	Yes, all memorial sites are excluded from the road realignment's development footprint. Ysterberg is located approximately 1km to the east of the planned realignment route.
c)	Will the species that utilise the route as a migration route not be affected by the activity?	The migration route is part of a large system of migration routes. The percentage of these migration routes that will be impacted on by the realigned portion of the MN73 will be negligible, and therefore the road realignment will have very little effect on terrestrial species utilising the migration route.
d)	How much of natural vegetation clearance will occur on site?	The section of the MN73 to be realigned, including the road reserve, will require approximately 8ha of vegetation clearance within the project site (Portion 4 of the Farm Scuitklip 92), which is approximately 3518ha in extent.
e)	What protected plant species are onsite and what legislation protects them?	One protected plant species has been recorded within the alignment corridor and include <i>Boscia foetida</i> . <i>Hoodia gordonii</i> was

No.	DENC Comment	Response and cross reference in this BA Report
		<p>recorded within the project site but not within the realignment corridor. However, this is not a large conspicuous species and the likelihood that isolated species or colonies occurring in the realignment corridor can be high. <i>Aloe dichotoma</i> were only recorded within the eastern section of Portion 4 of the Farm Scuitklip 92. All individuals of the <i>Aloe dichotoma</i> species were recorded outside of the footprint of the MN73 realignment corridor and can therefore be avoided, and not affected by the development. <i>Acacia erioloba</i>, also a protected tree species, has a high probability of occurring in the study area while the Near Threatened species, <i>Conophytum limpidum</i>, is found on inselbergs in Bushmanland in vertical crevices in rocks, generally preferring shaded situations. If this species occurs in the study area, it is most likely to be found on the hills or rocky areas which is avoided by the road realignment.</p> <p>All of these species are protected in terms of the National Environmental Management: Biodiversity Act (Act No. 10 of 2004) as well as the Northern Cape Nature Conservation Act (Act No. 9 of 2009). Tree species such as <i>Aloe dichotoma</i>, <i>Acacia erioloba</i>, <i>Boscia foetida</i> are also protected by National Forests Act (Act No. 84 of 1998).</p>
f)	Flora and fauna onsite must also be classified in accordance with the NCNCA 9 of 2009 and their status.	The Northern Cape Nature Conservation Act (Act No. 9 of 2009) was used to identify the status of species occurring within the project site. A list of species of concern and the probability of these species occurring within the study area are included in Appendix D1 (refer to section 8).
g)	Comments from DW&S with regards to impacts on the drainage lines.	Comments (dated 3 February 2017) were received from DWS (refer to Appendix E6). The DWS comments do not raise a concern regarding impacts to drainage lines in this area, understanding the nature of the drainage lines in this area. The DWS

No.	DENC Comment	Response and cross reference in this BA Report
		<p>comments do request the applicant to make a Water Use License Application in terms of the National Water Act (Act No. 36 of 1998), and give due consideration to stormwater management where bridge structures are required.</p>
h)	<p>Exclusion of sensitive areas such as rocky outcrops is supported.</p>	<p>It is noted that the Northern Cape Department of Environment, Nature and Conservation supports the exclusion of sensitive areas identified within the project site such as rocky outcrops.</p>
i)	<p>What will be the impact of the activity on the species utilising the migration route?</p>	<p>The impact of the road realignment on species utilising the indicative migration route is considered to be of low significance with the implementation of mitigation measures. This is due to the greatly reduced wildlife naturally occurring in this area as a result of previous and current disturbances which have led to a reduction in species abundance. These disturbances include two existing 100MW CSP trough plants, an Eskom Substation, Eskom transmission and distribution lines, quarrying activities, farming activities, and existing roads (including the MN73). It should be noted that this application includes the realignment of an existing road (MN73) and not the construction of a new road.</p>
j)	<p>The No-Go option is not about you desiring it or a matter of preference but about the status quo of the site, which is something that must be investigated and used as a baseline to assess potential impacts.</p>	<p>The no-go option has been updated and assessed in Appendix F of the Basic Assessment Report. The current land uses do not preclude the planned road realignment, predominantly as this is a 4km realignment of an existing road, and not a greenfields development. The need and rationale for the road realignment is to ensure road safety for road users within an area which has become a node for solar energy facilities.</p>
k)	<p>Where there are no alternatives, the motivation for not having feasible alternatives needs to be very clear.</p>	<p>No alternatives have been considered for the realignment of the MN73 main road. A detailed motivation for why no other feasible alternatives were assessed have been</p>

No.	DENC Comment	Response and cross reference in this BA Report
		included in Section A of the Basic Assessment.
l)	Under App E6, did not see comments from DW&S, a follow up must be done on the issue of drainage lines raised by DW&S as to whether there are certain requirements from their side.	Comments (dated 3 February 2017) were received from DWS (refer to Appendix E6). An ephemeral drainage line (wash) bisects the northern section of the study area from east to west, gradually narrowing towards the east. This system is highly fragmented by existing roads, past land use practices and the adjacent existing facilities have disrupted any flows within this system (Scherman Colloty & Associates, 2016). Therefore, the wash (drainage line) is and considered to be of low ecological significance. The DWS comments do not raise a concern regarding impacts to drainage lines in this area, understanding the nature of the drainage lines in this area. The DWS comments do request the applicant to make a Water Use License Application in terms of the National Water Act (Act No. 36 of 1998), and give due consideration to stormwater management where bridge structures are required.
m)	According to the Vegetation Map of South Africa (2009) the development falls within the Bushmanland Arid Grassland. The Bushmanland Arid Grassland has a conservation target of 21% and only small patches are statutorily conserved in Augrabies Falls National Park and Goegap Nature Reserve. Very little of the area has been transformed. Erosion is very low (60%) and low (33%) (Mucina & Rutherford, 2006).	It is confirmed that the development falls within the Bushmanland Arid Grassland. The details of the vegetation type have been considered in the Ecological Impact Assessment Report (Appendix D1).
n)	The farm Scuitklip falls within an area earmarked by the Northern Cape Biodiversity Sector Plan (NBS) as a Critical Biodiversity Area (CBA). The proposed development is positioned in the landscape at a point where it falls within an area determined by the NBS as an Ecological Support Area (ESA). The latter are defined as "areas meeting ecological process targets or achieving biodiversity persistence objectives". This	The project site falls within an Ecological Support Area (ESA) which is defined as "areas that are not essential for meeting biodiversity representation targets/thresholds but which nevertheless play an important role in supporting the ecological functioning of critical biodiversity areas and / or in delivering ecosystem services that support socio-economic development, such as water provision, food

No.	DENC Comment	Response and cross reference in this BA Report
	<p>specific ESA is a Terrestrial Mitigation Corridor. The Scuitklip also border an Important Bird Area (IBA) and the entire area are located within the Gariiep Centre of Endemism.</p>	<p>mitigation or carbon sequestration” and “the degree of restriction on land use and resource use in these areas may be lower than that recommended for critical biodiversity areas”. Although the project site falls within an ESA, the realignment should have very little effect on species utilising the migration route it must be noted that the migration route indicated is part of a large system of migration routes and that the percentage of these migration routes that will be impacted on will be negligible. This is supported by the findings of the ecologist following detailed field work in both the wet and dry season.</p>
o)	<p>The ecological report outlined habitats that are suitable for the occurrence of certain flora species, listed under IUCN red data list as well as other legal frameworks e.g. Northern Cape Nature Conservation Act No. 109 of 2009. One of the vulnerable species, <i>Aloidendron dichotomum</i> (formerly <i>Aloe dichotoma</i> var. <i>dichotoma</i>) was recorded on Portion 4 of the Farm Scuitklip 92. If the <i>Aloidendron dichotomum</i> species are found within the development footprint, the road should be aligned in a way not to disturb the <i>A. dichotomum</i> spp., hence, colonies of <i>A. dichotomum</i> species should be regarded as a no-go area.</p>	<p><i>Aloidendron dichotomum</i> species was recorded in the eastern section of Portion 4 of the Farm Scuitklip 92. No individuals of this species were recorded inside of the footprint of the corridor for the MN73 realignment and will therefore not be affected by the development.</p>
p)	<p>Disturbance to indigenous plants should be kept to a minimum as far as possible. Re-planting in the wild must cause as little disturbance as possible to the existing natural ecosystems. The substantial amount of <i>Boschia</i> spp. Destroyed/cut/damaged in the development footprint is of great concern. A species conservation assessment will be required during permit application for <i>Boschia</i> spp.</p>	<p>Disturbance to indigenous plants will be kept to a minimum as far as possible. The requirements of DENC will be observed and provided during the permit application for and <i>Boschia</i> species</p>
q)	<p>Rocky ridges, quartzite patches and washes should be demarcated as no-go areas; these areas are known to contain specialist plant species.</p>	<p>No quartzite patches have been identified within the project site. All rocky ridges located within the project site / Portion 4 of the Farm Scuitklip 92 are considered to be</p>

No.	DENC Comment	Response and cross reference in this BA Report
		no-go areas and are avoided by the footprint of the road realignment. An ephemeral drainage line (wash) bisects the northern section of the study area from east to west, gradually narrowing towards the east. It has been confirmed by the ecologist that this system is highly fragmented and considered to be of low ecological significance.
r)	Protected trees with significant biodiversity features such as sociable weaver nests, nest for raptors such as Jackal buzzard, etc. should only be disturbed after consultation with the DENC. Fauna permits should be applied for if any faunal species are to be removed, this includes bird nests, snakes, ground squirrels, etc.	No protected trees with sociable weaver nests, nest for raptors (i.e. Jackal buzzard) will be disturbed without consultation with the DENC. Permits will be applied for should any faunal species be required to be removed from the development footprint.
s)	The most important aspects to consider in removing topsoil are the depth of soil to remove and the conditions of storing topsoil. Studies on topsoil storage in Namaqualand suggested that the top 5cm of the soil contains 90% of the seed bank (de Villiers et al., 1994; de Villiers, 2000). According to (Strohmayr, 1999; Schmidt, 2002), "topsoil should be stored at less than 1m deep for less than 1 month". As a recommendation, the topsoil should be treated with optimal care as it is vital for rehabilitation.	As topsoil is vital for rehabilitation, mitigation measures for the disturbance of topsoil have been included in Objective 6 of the EMP (refer to Appendix G).
t)	Another effect of roads is the edge enhancement of plants and herbivores (Lightfoot and Whitford, 1991). Perennial plants along the roadside are often larger than those farther away, and annual plant germination is often greatest along the shoulders of roads. It is possible the increased runoff due to the impervious pavement or compacted soil contributes to this heterogeneity of vegetation in relationship to the road. Although this situation suggests potentially beneficial impacts for herbivorous species, such as tortoises, hares, small antelopes and reptiles, it increases their chance of being	The chance of herbivorous species being killed by vehicle strikes are greatly reduced at the project site compared to other sites due to the very low rainfall resulting in far less growth on the road reserve and the low abundance of animals in the area. It should be noted that this project includes the realignment of an existing road which endures the same impacts. Mitigations measures to reduce the risk of collision with vehicles have been included in Appendix D1 which includes the enforcement of a speed limit.

No.	DENC Comment	Response and cross reference in this BA Report
	killed by vehicle strikes, as was shown by von Seckerdorf Hoff and Marlow (2002).	
u)	Monitoring programmes specified in the EMP must be implemented. It is vital that a clear monitoring and reporting protocol is put in place. The EMP must address issues such as killings, dust suppression techniques, noise control, storage, and disposal of general waste as well as how provision of ablution and other facilities will be dealt with during construction.	All monitoring programmes included within the EMP are required to be adhered to and updated, as relevant, throughout the project life cycle.
v)	Water is a scarce resource within the Northern Cape Province and can therefore not be wasted. It is very important that the proponent take this into account. The proponent is thus advised to put sustainable measures of water use in place for dust suppression during the construction phase.	Considering water scarcity in the Northern Cape Province, sustainable dust suppression measures will be in place prior to the construction phase of the development.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section? **NO**

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. ACTIVITY DESCRIPTION

a) Describe the project associated with the listed activities applied for

The area immediately surrounding the Paulputs Substation (located approximately 45km north-east of Pofadder), and specifically Portion 4 of the Farm Scuitklip 92 has become a node for solar energy facility development. Two Concentrated Solar Power (CSP) facilities and one photovoltaic (PV) facility have already been constructed in this area. These are known as the Kaxu Solar One, Xina Solar One and Konkoonsies I PV plants respectively. Another PV facility (known as Konkoonsies II PV) is to be constructed during 2017, and a third CSP facility (known as the Paulputs CSP project) received an environmental authorisation on 16 November 2016.

The development of the solar energy facilities are in response to the requirement for additional electricity generation capacity at a national level and in response to identified objectives of the national, provincial, local and district municipalities to develop renewable energy facilities. In order to facilitate the construction of the Paulputs CSP Facility, the NC DR&PW propose that a section of the MN73 road traversing Portion 4 of the Farm Scuitklip 92 is realigned (refer to **Figure 1.1** and **Table 1.1**). The construction of the realigned section will be undertaken by Abengoa Solar Power South Africa (Pty) Ltd.

The MN73 road is proposed to be realigned in order to accommodate the Paulputs CSP Facility while ensuring safe road use for the surrounding landowners currently utilising the MN73. The realignment of the road will entail the following:

- » the construction of a new section of road ~4km in length and ~7m wide (with a road reserve of 20m) according to approved Northern Cape Department of Roads and Public Works (NC DR&PW) plans and standards; and
- » the decommissioning of ~3km of the existing MN73 road as and where required after the commissioning of the realigned section. Portions of the decommissioned section of the MN73 road will not be rehabilitated where these are used to provide internal access for the Paulputs CSP Facility.

The Northern Cape Department of Roads and Public Works (NC DR&PW) will be responsible for road operation and maintenance.

The realignment of the road will include the decommissioning of ~3km of the existing MN73 and the construction of a new section of road ~4km in length (approximately 7m in width). The newly constructed section of road will be aligned along the western boundary of the heliostat field of the Paulputs CSP Facility. A 40m wide corridor has been investigated for the siting of the proposed realignment of the MN73 road. No alternatives have been considered for the realignment of the MN73 main road. A detailed motivation for why no other feasible alternatives were assessed have been included in Section A of this Basic Assessment.

The project site is defined as Portion 4 of the Farm Scuitklip 92, which has a total extent of ~3518ha. The 40m wide corridor investigated for the siting of the proposed realignment of the MN73 road is the project development area and is limited to the western portion of the project site (refer to Figure 1).

Table 1.1: Detailed description of the location project site¹.

Province	Northern Cape Province
District Municipality	Namakwa District Municipality
Local Municipality	Khai-Ma Local Municipality
Ward number(s)	1
Nearest town(s)	Onseepkans (~30km north west) and Pofadder (~35km south west)
Farm name(s) and number(s)	Farm Scuitklip 92
Portion number(s)	Portion 4
SG 21 Digit Code (s)	C0360000000009200004
Current Landowner	KaXu CSP South Africa (Pty) Ltd
Current zoning	The site for the proposed project is zoned for Agricultural use. A re-zoning process will be undertaken for the Abengoa Solar Power South Africa (Pty) Ltd project site for the Paulputs CSP Facility, which includes the section of the MN73 road to be realigned.
Current land use and land use activities	The existing Paulputs Substation is located within Portion 4 of the Farm Scuitklip 92. Two CSP facilities, KaXu Solar One and Xina Solar One are located on the southern portion of the project site. The Paulputs CSP Facility has been authorised on the northern portion of the project site, east of the 40m corridor proposed for the MN73 road realignment. There is no cultivated agricultural land or other commercial

¹ The project site is defined as Portion 4 of the Farm Scuitklip 92, which has a total extent of ~3518ha.

agricultural activities within the farm portion which could be impacted upon by the proposed development.

Pre-Construction Surveys:

Prior to initiating construction, a number of detailed surveys will be required including, but not limited to:

- » Geotechnical survey – The geotechnical study will look at the availability of natural construction materials. This study will serve to inform the extent of earthworks and compaction required as well as the final micro-sitting of the realigned road which includes a 20m road reserve.
- » Site survey - in order to finalise the design layout of the road and the 20m road reserve. The finalisation will need to be confirmed in line with the Environmental Authorisation issued for the road realignment.

Construction of the new section of the MN73:

The realigned section of the MN73 road considered within this Basic Assessment Report will be approximately 4km in length. The realigned section of the MN73 will be in accordance with the Advertising on Roads and Ribbon Development Act No. 21 of 1940 and the Road Ordinance, 19 of 1976 and will be constructed in the following simplified sequence:

- Step 1: Final design and micro-siting of the infrastructure based on geotechnical, topographical conditions and potential environmental sensitivities;
- Step 2: Vegetation clearance within the development footprint (where required);
- Step 3: The development of stormwater control management systems which will divert water from the construction areas and will also be applicable to the operation phase of the road.
- Step 4: Construction of ~4km long and 7m wide gravel road within a road reserve of 20m.

The newly constructed road will be a single carriageway gravel road. Construction of the road realignment will take approximately 3 to 4 months to complete.

Undertake site rehabilitation

- Step 1: Areas requiring rehabilitation will include those areas disturbed during the construction phase which are not required for operation. Rehabilitation should be undertaken in an area as soon as possible after the completion of construction activities within that area.

Step 2:	Re-vegetated areas may have to be protected from wind erosion and maintained until an acceptable plant cover has been achieved.
Step 3:	Erosion control measures (i.e. drainage works and anti-erosion measures) should be used in sensitive areas to minimise loss of topsoil and control erosion.
Step 4:	All temporary facilities, temporary equipment, and waste materials must be removed from site.
Step 5:	Any access points and/or access roads which are not required during the operational phase must be closed as part of the post-construction rehabilitation.
<u>Operation and Maintenance Phase</u>	
Following completion of construction and commissioning, the Northern Cape Department of Roads and Public Works (NC DR&PW) will be responsible for the operation and routine maintenance of the road infrastructure.	

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN R 983, 984 and 985	Description of project activity that triggers listed activity
<p>GN R.983, Activity 12: A development of – (xii) infrastructure or structures with a physical footprint of 100 square metres or more;</p> <p>where such development occurs – (a) within a watercourse (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse.</p>	The section of the MN73 to be realigned will have a physical footprint of more than 100 square metres and will traverse and be within 32m of an ephemeral watercourse.
<p>GN R.983, Activity 19: The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from – (i) a watercourse.</p>	The construction of the realigned section of the MN73 will require material being deposited into or removed from the ephemeral watercourse which traverses the 40m assessment corridor.
<p>GN R.983, Activity 24: A development of – (ii) a road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres.</p>	The realigned section of the MN73 will have a road surface width of 7m, with a road reserve of 20m (the statutory width for the road reserve of Minor roads).

Listed activity as described in GN R 983, 984 and 985	Description of project activity that triggers listed activity
<p>GN R.985, Activity 14: The development of (xii) infrastructure covering 10 square metres or more where such construction occurs within a watercourse or within 32m measured from the edge of the watercourse; in a) Northern Cape (ii) Outside urban areas, in (dd) sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority.</p>	<p>The section of the MN73 to be realigned will cover an area more than 10m² and will occur within 32m of an ephemeral watercourse. The realignment is within an ecosystem service area (Ecological Support Area) as identified in the Environmental Management Framework (EMF) for the Namakwa District Municipality.</p>

2. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h), Regulation 2014. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and

seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

A regional site identification process undertaken in 2010 included the consideration of sites/areas of special environmental importance and planning criteria, as well as issues relating to landscape character, value, sensitivity and capacity for the development of CSP facilities. These aspects were then balanced with technical constraining factors affecting the siting of the KaXu Solar One and Xina Solar One, and included the solar resource, land availability, accessibility and existing grid infrastructure. The remaining area of Portion 4 of the Farm Scuitklip was then earmarked by Paulputs (Pty) Ltd as being potentially suitable for another CSP Project.

The area immediately surrounding the Paulputs Substation (located approximately 45km north-east of Pofadder), and specifically Portion 4 of the Farm Scuitklip 92 has become a node for solar energy facility development. Two Concentrated Solar Power (CSP) facilities and one photovoltaic (PV) facility have already been constructed in this area. These are known as the Kaxu Solar One, Xina Solar One and Konkoonsies I PV plants respectively. Another PV facility (known as Konkoonsies II PV) is to be constructed during 2017, and a third CSP facility (known as the Paulputs CSP project DEA Ref No.: 14/12/16/3/3/2/870) received an environmental authorisation on 16 November 2016.

In order to accommodate the solar energy facilities near the Paulputs Substation and specifically the authorised Paulputs CSP Facility, the road realignment is required on Portion 4 of the Farm Scuitklip 92. Therefore, no feasible alternative sites are available for consideration, and are not considered/assessed further.

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

Alternative 1:	Latitude (S):	Longitude (E):
Alternative S1 (preferred)		
• Starting point of the activity	28° 50' 50.361" S	19° 34' 42.870" E
• Middle/Additional point of the activity	28° 51' 24.057" S	19° 33' 44.290" E
• End point of the activity	28° 52' 26.737" S	19° 34' 3.661" E
Alternative S2 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

A table has been attached as **Appendix J1** detailing the proposed road realignment co-ordinates. Please note that the co-ordinates in Appendix J1 are the approximate centreline of the proposed corridor. These are not fixed and would be defined following the final micro-siting of the road alignment. A corridor of 40m is currently applied for to allow for micro-siting of the 7m wide road and road reserve of 20m. The corner co-ordinates of the corridor are provided in Appendix J1.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the layout map provided in Appendix A of this form.

b) Layout alternatives

The consideration of layout alternatives are constrained on the basis of the approved CSP facility layout plan, as well as potential environmental sensitivities identified. Following specialist investigations of Portion 4 of the Farm Scuitklip 92 for the Paulputs CSP Facility and for the proposed project, it was determined that the area to the east of the Paulputs CSP heliostat field was deemed unsuitable due to known environmental sensitivities, as well as space and technical constraints. The possibility of utilising the eastern section of Portion 4 of the Farm Scuitklip 92 for the proposed MN73 realignment was therefore excluded as a reasonable and feasible layout alternative. Technical and environmental constraints identified within the eastern section of the farm include:

- » Technical constraint: The Paulputs-Scuitdrift 1 132kV and Paulputs-Kaxu Solar 1 132kV power lines traverse the centre of the project site between the authorised Paulputs CSP Facility and the existing Kaxu CSP Facility. There is not sufficient space for the construction of a 7m road with a 20m road reserve between these facilities and two existing power lines.
- » Technical constraint: The associated infrastructure of the authorised Paulputs CSP Facility is to be located on the eastern side of the heliostat field. For the road realignment to follow the eastern boundary of the heliostat field is not feasible due to space constraints.
- » Environmental constraint: Areas of heritage sensitivity on the project site include terrain close to hills or rocky features, and the memorial sites below Ysterberg. The rocky outcrops that occur on the north eastern side of the farm are regarded as no-go areas and a 60m buffer around each outcrop has been recommended by the heritage specialist. These sites and others like them in the broader landscape provided shelter and variety of resources that attracted human activity through Stone Age times.

Due to environmental and technical constraints, only one alternative is proposed for the realignment and is therefore the preferred alternative. A 40m wide corridor has been investigated and assessed.

The 40m corridor for the proposed realignment starts approximately 600m north of the Paulputs Substation in the southern portion of the project site, adjacent to the heliostat field of the authorised Paulputs CSP Facility. The realignment route follows the boundary of the heliostat field and intersects with the existing R357 (also known as the Onseepkans road) on the northern boundary of Portion 4 of the Farm Scuitklip 92, at a point approximately 370m north west from the current intersection. The length of the realigned section of road is approximately 4km.

In the case of linear activities:

Alternative 1:	Latitude (S):	Longitude (E):
Alternative S1 (preferred)		
• Starting point of the activity	28° 50' 50.361" S	19° 34' 42.870" E
• Middle/Additional point of the activity	28° 51' 24.057" S	19° 33' 44.290" E
• End point of the activity	28° 52' 26.737" S	19° 34' 3.661" E
Alternative S2 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

Alternative S3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

c) Technology alternatives

No technology alternatives are applicable for the proposed realignment. The proposed project will need to conform to the Road Ordinance, 19 of 1976 and the Advertising on Roads and Ribbon Development Act, No. 21 of 1940.

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

The design of the section of the MN73 to be realigned will be based on widely proven and accepted industry standards (in accordance with the Road Ordinance, 19 of 1976 and the Advertising on Roads and Ribbon Development Act, No. 21 of 1940) therefore no other alternatives were considered for the proposed road realignment.

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

e) No-go alternative

The do nothing alternative is the option of not realigning the section of the MN73 which traverses Portion 4 of the Farm Scuitklip 92 and the authorised Paulputs CSP facility development footprint. The farm portion has been disturbed by numerous other infrastructure and will be zoned to Special: Solar Use to accommodate the Paulputs CSP Facility. There is no cultivated agricultural land or any other commercial agricultural activities within the farm portion. The current land uses do not preclude

the planned road realignment, predominantly as this is a 4km realignment of an existing road, and not a greenfields development. The need and rationale for the road realignment is to ensure road safety for road users within an area which has become a node for solar energy facilities. This option is assessed as the "no go alternative" in this Basic Assessment Report (also refer to **Appendix F**).

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	Size of the activity:
Alternative A1 (preferred activity alternative)	m ²
Alternative A2 (if any)	m ²
Alternative A3 (if any)	m ²

or, for linear activities:

Alternative:	Length of the activity:
Road Realignment Corridor Alternative (preferred activity alternative)	4km
Alternative A2 (if any)	m
Alternative A3 (if any)	m

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:	Size of the site/servitude:
Road Realignment Corridor Alternative (preferred activity alternative)	Servitude/road reserve = 20m (within an assessed 40m wide corridor)
Alternative A2 (if any)	m ²
Alternative A3 (if any)	m ²

4. SITE ACCESS

Does ready access to the site exist?

If NO, what is the distance over which a new access road will be built

YES	
	m

Describe the type of access road planned:

The proposed realigned road will be a single carriageway gravel road with a road reserve of 20m. Portion 4 of the Farm Scuitklip 92 can be readily accessed from two points located along the property boundary. The eastern access point is positioned on the eastern side of the farm portion and can be accessed via the N14. This eastern access point is currently being used for access to the other two CSP facilities on the farm portion. The northern access point is via the N14 via the existing tarred road off the R357 Onseepkans road and onto the existing MN73 gravel road. After the MN73 has been realigned, the access point will be ~370m north west from the current access point.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site. The position of the road in relation to the project site has been illustrated in the locality map included in **Appendix A**.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as **Appendix A**. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s);
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

An A3 Layout Map has been attached to **Appendix A**. The map indicates the following:

- » the closest town to the project site (i.e. Onseepkans);
- » road access from all major roads in the area;
- » road numbers of all major roads as well as the roads that provide access to the project site;
- » all roads within a 1km radius of the project site;
- » a north arrow;
- » a legend; and
- » locality GPS co-ordinates indicating the position of the section of the MN73 to be realigned using the latitude and longitude of the start, centre and end point.

No alternative are illustrated in the map as no alternatives have been assessed for the section of the MN73 to be realigned.

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

An A3 Layout Map also referred to as the route plan has been attached to **Appendix A**. The map indicates the following:

- » the property boundaries and numbers of all the properties within 50 metres of the site;
- » the exact position of each listed activity applied for (excluding alternatives);
- » servitude(s) indicating the purpose of the servitude;
- » a north arrow; and
- » a legend.

Spatial data regarding the current land use and zoning of the properties adjoining the site were unavailable at the time the report was compiled and was therefore not illustrated on the map. No alternative are illustrated in the map as no alternatives have been assessed for the section of the MN73 to be realigned.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

An A3 Sensitivity map and a Critical Biodiversity Area (CBA) map has been included within **Appendix A**. The map indicates the following:

- » all watercourses identified within the project site;
- » ridges and outcrops identified;
- » cultural and historical features identified by the specialist;
- » areas with indigenous vegetation ; and
- » critical biodiversity areas.

Ecological Sensitivity

The majority of the realignment corridor occurs within an area of moderate ecological sensitivity. Areas of moderate and low ecological sensitivity within Portion 4 of Farm Scuitklip 92 refer to areas where a great amount of disturbance has already occurred and species of concern are less likely to be present. Areas that have been severely disturbed are considered of low conservation importance. Areas that have been disturbed by farming are considered to be of moderate ecological sensitivity. These areas are disturbed mostly by overgrazing as well as denudation of some areas around watering holes and roads. Ecological integrity and conservation importance of the areas that will be affected by the clearing of vegetation are low to moderate, however species of concern (such as *Hoodia gordonii* and *Boscia foetida*) may be impacted upon. *Boscia foetida* have been identified within the assessment corridor, while *Hoodia gordonii* have

not been identified. However, *Hoodia gordonii* is not a large conspicuous species and the likelihood that isolated species or colonies occurring in the area can be high.

An ephemeral drainage line (wash) bisects the northern section of the study area² from east to west, gradually narrowing towards the east. This system is highly fragmented by the roads and past land use practices, and the adjacent facilities have disrupted any flows within this system (Scherman Colloty & Associates, 2016)³. Therefore, the wash (drainage line) is considered to be of low sensitivity and impact to the feature would be of low significance.

Although the realignment is situated within an Ecological Support Area (ESA), which is listed as a migration route, the consideration of this area as a migration route does seem to be counter-intuitive as it seems to start in the lowlands of the Gariep River, crosses over rocky mountainous areas only to return to the lowlands of the Gariep River again. Regardless, the realignment of the MN73 will not impact the migration route and would have very little impact on species using this route.

Heritage sensitivity

Areas of heritage sensitivity on Portion 4 of the Farm Scuitklip 92 include terrain close to hills or rocky features and the memorial sites below Ysterberg. The rocky outcrops that occur to the north east of the Paulputs CSP project footprint are regarded as no go areas and a 60m buffer around each outcrop has been considered. These sites and others like them in the broader landscape provided shelter and a variety of resources that attracted human activity through Stone Age times. All these rocky outcrops fall outside of the 40m assessment corridor and is therefore avoided by the road realignment. The memorial sites located below Ysterberg are regarded as high sensitivity and it is recommended that these memorial markers be respected by way of a 10m buffer zone. These memorials are completely avoided by the realignment of a section of the MN73 and the 40m assessment corridor. The open plains have been found to have sparsely scattered artefacts of which none are located within the 40m assessment corridor. Therefore, all these heritage features i.e. memorial sites rocky features and scattered artefacts have been considered and will not be impacted by the realignment.

A desktop Palaeontological Impact Assessment (PIA) of the full extent of Portion 4 of the Farm Scuitklip 92 has previously been undertaken by John Pether in 2010⁴. The

² The study area is defined as the area west of the MN73 to be decommissioned and north of the existing Paulputs/Scuitdrift 1 132kV and Paulputs/Kaxu Solar 1 132kV power lines and includes the 40m corridor.

³ Scherman Colloty and Associates. 2012. Water Resources Assessment: Paulputs Concentrated Solar Plant, Northern Cape Province.

⁴ Pether, J. 2010. Brief Palaeontological Impact Assessment (Desktop Study). Proposed Pofadder Solar Thermal Plant. Portion 4 of the Farm Scuit-Klip 92, Kenhardt District, Northern Cape. 3 December 2010.

section of the MN73 road realignment entails shallow disturbance of superficial, geologically young (Quaternary) deposits which have low fossil potential and sensitivity.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

Site photographs are attached within **Appendix B.**

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

A facility illustration is included within **Appendix C.**

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	YES		Please explain
<p>The realignment route is currently zoned for Agriculture. There is no cultivated agricultural land or other commercial agricultural activities within the farm portion which could be impacted upon by the proposed development. Two CSP facilities, KaXu Solar One and Xina Solar One are located in the southern portion of the site. The landowner, Kaxu CSP South Africa (Pty) Ltd has rezoned the KaXu Solar One and Xina Solar One sites for Special Solar use, which is consistent with the intended land use. A similar rezoning process will be undertaken for the Paulputs CSP Facility, including the road realignment.</p>			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES		Please explain
<p>The Northern Cape Provincial Spatial Development Framework (NCPSDF) includes objectives that refer to the restructure of road networks to promote economic activity in</p>			

<p>appropriate locations. This framework aims to provide and maintain an adequate road and railway transport system throughout the Province.</p> <p>The NCPSDF also makes reference to the need to ensure the availability of inexpensive energy. The section notes that in order to promote economic growth in the Northern Cape the availability of electricity to key industrial users at critical localities at rates that enhance the competitiveness of their industries must be ensured. At the same time, the development of new sources of energy through the promotion of the adoption of energy applications that display a synergy with the province's natural resource endowments must be encouraged. In this regard the NCPSDF includes the reference to renewable energy resources in "the development of energy sources such as solar energy, the natural gas fields, bio-fuels, etc., could be some of the means by which new economic opportunity and activity is generated in the Northern Cape". The NCPSDF also highlights the importance of close co-operation between the public and private sectors in order for the economic development potential of the Northern Cape to be realised. The MN73 road needs to be realigned in order for the authorised Paulputs CSP Facility to be constructed, which will contribute towards this objective.</p>		
<p>(b) Urban edge / Edge of Built environment for the area</p>	<p>NO</p>	<p>Please explain</p>
<p>The site for the road realignment falls outside the urban edge. Therefore, the proposed project does not impact upon the urban edge.</p>		
<p>(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).</p>	<p>YES</p>	<p>Please explain</p>
<p>The project will not compromise IDP objectives but will assist in reaching these objectives as the IDPs of the respective municipalities aim to ensure that the quality of life of the District community through purposeful and quality service, and the effective and optimal utilisation of resources is achieved. This project will assist in supporting the local electricity supply through accommodating the authorised Paulputs CSP Facility, the existing KaXu Solar One, the existing Xina Solar One and the existing Konkoonsies Solar I Facility which are and will be contributing to the National Eskom Grid. The project will further assist in job creation which will assist in achieving IDP objectives.</p>		
<p>(d) Approved Structure Plan of the Municipality</p>	<p>YES</p>	<p>Please explain</p>
<p>The purpose of the road realignment is to provide safe and adequate access to users utilising the MN73. The local and district municipalities were included as part of the Public Participation Process for the approved Paulputs CSP Facility project. The proposed realignment supports this approved project, as well as other solar energy facilities in the area and does not compromise the structure of the municipal plans.</p>		

<p>(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)</p>		NO	Please explain
<p>The approval of this application will not compromise the Namakwa District Municipality Environmental Management Framework. Although the MN73 alignment traverses an Ecological Support Area (ESA), the realignment of the MN73 will not impact migration routes and would have very little impact on species within the ESA.</p> <p>The proposed realignment will support the authorised Paulputs CSP Facility as well as other solar energy facilities near the Paulputs Substation and will therefore indirectly contribute to clean energy generation as a sustainable resource and holds significant benefits for the local region and the country as a whole. Renewable resources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future. The project aims at achieving the set goals for the Plan through addressing all possible environmental issues associated with the development and addressing measures to mitigate environmental issues.</p>			
<p>(f) Any other Plans (e.g. Guide Plan)</p>	YES		Please explain
<p>Environmental Implementation Plan (EIP)</p> <p>An Environmental Implementation Plan (EIP) was compiled by the Northern Cape Province. The EIP was compiled in order to encourage co-operative governance across departments as NEMA calls for the development of a national and provincial Environmental Implementation Plans (EIPs) and Environmental Management Plans (EMPs). The EIP aims to ensure that land use decision-making is carried out using adequate available environmental resource information in order to ensure sustainable and appropriate environmental management to the benefit of its residents. One of the set goals for the Programme is ensuring that all environmental issues are appropriately addressed. This is achieved for this project through the execution of this Basic Assessment process.</p>			
<p>3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?</p>	YES		Please explain
<p>The main purpose of the proposed realignment is to accommodate the authorised Paulputs CSP Facility as well as the other solar energy facilities near the Paulputs Substation (i.e. KaXu Solar One, Xina Solar One and Konkoonsies Solar I Facility) which</p>			

<p>will contribute to the National Eskom electricity grid. These projects are in line with the current IDP objectives. The realignment of the MN73 is not specifically considered within the existing approved SDF, but as the project is the realignment of an existing road, the project would contribute to economic development, and provide safe and adequate access.</p>		
<p>4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)</p>	<p>YES</p>	<p>Please explain</p>
<p>The section of the MN73 to be realigned will contribute to economic development in the area and provide safe and adequate access. The main purpose of the proposed Project is to enable the connection of the authorised Paulputs CSP Facility to the National Eskom electricity grid by realigning the MN73 which traverses the centre of the development footprint of the CSP facility as well as to accommodate other solar energy facilities near the Paulputs Substation. The proposed Project will accommodate the authorised Paulputs CSP Facility as well as the other solar energy facilities in the area, which are and will be contributing to the National Eskom electricity grid. This will have a positive economic impact at a local and regional level in terms of job creation (directly and indirectly) as well as contributing to alleviate South Africa’s existing energy supply shortage.</p> <p>Furthermore, the local regional Integrated Development Plan (IDP) and Spatial Development Framework (SDF) call for opportunities for the creation of jobs. Up to 18 employment opportunities will be created during the construction phase of the road.</p>		
<p>5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>	<p>YES</p>	<p>Please explain</p>
<p>All the necessary services with adequate capacity are currently available, and no additional capacity is required to cater for the road realignment. The MN73 is an existing road, and this application is for a realignment of a section of this road only. All the services needed for the realignment of the MN73 have been adequately provided for and should any need for other services arise the relevant authority will be communicated with.</p>		

<p>6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>		NO	Please explain
<p>The Project will not have any negative implications for the municipality in terms of priority and placement of services and opportunity costs.</p>			
<p>7. Is this project part of a national programme to address an issue of national concern or importance?</p>		NO	Please explain
<p>The MN73 is an existing road, and this application is for a realignment of a section of this road only. This road is owned and managed by the NC DR&PW, a provincial authority. However, the need for the realignment is for the development of the Paulputs CSP project, and is aimed at providing safe and adequate access for the road users that utilises the MN73.</p> <p>Within a policy framework, the development of renewable energy in South Africa is supported by the White Paper on Renewable Energy (November 2003). In order to meet the long-term goal of a sustainable renewable energy industry, a goal of 17,8GW of renewables by 2030 has been set by the Department of Energy (DoE) within the Integrated Resource Plan (IRP) 2010.</p> <p>Renewable Energy projects also form a key part of the National Development Plan which aims to “speed up and expand renewable energy...” in order to facilitate the transition of South Africa to low-carbon economy.</p> <p>The proposed section of the MN73 to be realigned will support many of the objectives of the National Development Plan (NDP). Some of these objectives are listed below:</p> <ul style="list-style-type: none"> • Create 11 million jobs by 2030; and • Procuring about 20 000MW of renewable electricity by 2030. <p>In order to construct and integrate the power generated at Paulputs CSP Facility into the National Eskom electricity grid, MN73 is required to be realigned as it traverse the development footprint of the CSP Facility. Therefore, the road realignment is a key part of the Paulputs CSP Facility without which the CSP facility cannot be constructed.</p>			
<p>8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)</p>	YES		Please explain
<p>There are several existing infrastructure situated within the project site. This includes:</p> <ul style="list-style-type: none"> • two existing CSP facilities i.e. KaXu Solar One and Xina Solar One; 			

- the Paulputs/KaXu Solar 1 132kV power line and the Paulputs/Schuitdrift 1 132kV power line;
- the existing Paulputs and KaXu Substations; and
- the existing MN73 which is proposed to be realigned.

One of the main reasons why the land use is favourable for the location of the CSP facilities, including the Paulputs CSP Facility, is the flat terrain, with moderate to low ecological sensitivity, as well as low agricultural potential, proximity to an existing substation, proximity to existing access routes and road networks and the availability of land. The position of the proposed section of the MN73 to be realigned is considered to be the most feasible options for the location of this infrastructure, taking technical and environmental (social and biophysical) issues into consideration.

The realignment on this site does not detract from the current land uses, and is considered to be a practicable land use option.

9. Is the development the best practicable environmental option for this land/site?	YES	Please explain
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The MN73 is an existing road which traverses Portion 4 of the Farm Scuitklip 92. The realignment of a portion of this road will be on the same farm portion. This farm is currently occupied by two existing CSP facilities which includes KaXu Solar One and Xina Solar One, as well as the Paulputs CSP Facility which has been authorised. The project site is traversed by the existing Paulputs/KaXu Solar 1 132kV power line and the existing Paulputs/Schuitdrift 1 132kV power line and the existing Paulputs and KaXu Substations are situated in the southern section of the farm portion. The centre of the project site is traversed by the existing MN73 which is proposed to be realigned. The realignment on this site does not detract from the current land uses, and is considered to be a practicable land use option.

The Paulputs CSP Facility is an authorised facility. The purpose of the proposed Project is to accommodate the Paulputs CSP facility as well as other solar energy facilities near the Paulputs Substation and therefore, the location of the proposed Project is dependent of the development footprint of the solar energy facilities and specifically the Paulputs CSP Facility. The realignment route assessed in this Basic Assessment is considered to be the most feasible option for the location of this infrastructure, taking technical and environmental (social and biophysical) issues into consideration.

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES	Please explain
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The specialist studies undertaken as part of this Basic Assessment conclude that the development of the proposed Project will have environmental impacts which can be mitigated to acceptable levels. The project is proposed adjacent to the boundaries of the already authorised Paulputs CSP Facility. The proposed Project will accommodate

<p>the CSP facility and other solar energy facilities near the Paulputs Substation which will connect and are already connected to the National Eskom electricity grid thereby facilitating the distribution of renewable energy nationally. This will have a positive impact at a local, regional and national level and concur with various national policies (as discussed earlier). The benefits of the Project are considered to outweigh the negative impacts (none of which are considered fatal flaws to the project). Further direct and indirect benefits in the form of job creation and direct and indirect economic benefits will also be realised.</p>		
<p>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</p>	<p>NO</p>	<p>Please explain</p>
<p>The MN73 is an existing road which provides access to Pofadder and the Onseepkans. There will be no disruption to the use of the road as the section of the MN73 will only be decommissioned after the realignment has been fully commissioned. The MN73 intersects the R357 (Onseepkans road). The point of intersection will be 370m north west of the current intersection. The realignment of a section of the MN73 will not encourage other similar road realignments and will therefore not set a precedent.</p>		
<p>12. Will any person's rights be negatively affected by the proposed activity/ies?</p>	<p>NO</p>	<p>Please explain</p>
<p>The realigned section of road is within a single farm portion, and the affected landowner will benefit from the realignment of the road in order to facilitate the construction of the Paulputs CSP facility. Private landowners surrounding Portion 4 of the Farm Scuitklip 92 which utilise the MN73 will be impacted by the realignment, but their rights to the access which is currently provided will not be negatively affected or compromised as access will not be restricted at any time. The realigned section will be constructed and commissioned prior to the existing section of road being closed.</p>		
<p>13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?</p>	<p>NO</p>	<p>Please explain</p>
<p>The proposed project falls outside the urban edge. Portion 4 of the Farm Scuitklip is ~35km from Pofadder, ~85km from Augrabies and ~95km from Kakamas. Therefore, the proposed Project does not impact upon the urban edge.</p>		
<p>14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?</p>	<p>NO</p>	<p>Please explain</p>
<p>The proposed project will not support any of the objectives for Strategic Infrastructure Projects (SIP) as it does not form part of integrated rail and port expansion, back-of-port industrial capacity (including an IDZ), strengthening maritime support capacity for oil and gas along African West Coast or the expansion of iron ore mining production and beneficiation or any of the other SIPS.</p>		

<p>15. What will the benefits be to society in general and to the local communities?</p>	<p>Please explain</p>
<p>The main benefit of the realignment to society will be to ensure road safety, especially within an area which has become a node for solar energy facilities. The main purpose of the proposed Project is to accommodate the authorised Paulputs CSP Facility and the other solar energy facilities near the Paulputs Substation which will connect and are already connected to the National Eskom electricity grid. This will have a positive economic impact at a National, local and regional level. This will also result in job creation (directly and indirectly) as well as contributing to alleviate South Africa’s existing energy supply shortage.</p>	
<p>16. Any other need and desirability considerations related to the proposed activity?</p>	<p>Please explain</p>
<p>The area surrounding the Paulputs Substation has become a node for solar energy facilities. The MN73 road which currently traverses the development footprint of the authorised CSP Facility is required to be realigned outside of the planned development footprint to ensure road safety.</p>	
<p>17. How does the project fit into the National Development Plan for 2030?</p>	<p>Please explain</p>
<p>The MN73 is an existing road, and this application is for a realignment of a section of this road only. This road is owned and managed by the NC DR&PW, a provincial authority. The MN73 currently traverses the development footprint of the authorised Paulputs CSP Facility. The need for the realignment is to provide safe and adequate access for the road users that utilises the MN73.</p> <p>By 2030 South Africa aims to reduce carbon emissions, promote economic development and increase the GDP. To achieve this, the Provinces have aimed to improve Infrastructure and Basic Services; Socio-economic Development; Institutional Transformation; Good Governance and Public Participation; Financial viability and Management. The Paulputs CSP facility will assist in reducing the carbon footprint, as it will be transporting energy produced from a renewable energy project (solar) and it will facilitate the infrastructure growth in the area including job creation, local content, enterprise development and other socio-economic benefits and the positive impacts will therefore be realised. The realignment of a section of the MN73 will provide safe and adequate access while the CSP facility assist in reducing the carbon footprint.</p> <p>Renewable Energy projects also form a key part of the National Development Plan which aims to “speed up and expand renewable energy...” in order to facilitate the transition of South Africa to low-carbon economy.</p> <p>The National Development Plan contains a plan aimed at eliminating poverty and reducing inequality by 2030. The NDP identifies 9 key challenges and associated remedial plans. Managing the transition towards a low carbon national economy is</p>	

identified as one of the 9 key national challenges. Expansion and acceleration of commercial renewable energy is identified as a key intervention strategy.

The proposed project will support many of the objectives of the National Development Plan (NDP). Some of these objectives are listed below:

- Create 11 million jobs by 2030; and
- Procuring about 20 000MW of renewable electricity by 2030.

18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.

The general objectives of Integrated Environmental Management have been taken into account for this Basic Assessment report by means of identifying, predicting and evaluating the actual and potential impacts on the biophysical environment, socio-economic conditions and cultural heritage.

The risks, consequences, alternatives as well as options for mitigation of activities have also been considered with a view to minimise negative impacts, maximise benefits, and promote compliance with the principles of environmental management.

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

Section 2 of NEMA states that environmental management must place people and their needs at the forefront, and serve their physical, psychological, developmental, cultural and social interests equitably. These principles of NEMA include the following:

- » Development must be sustainable;
- » Pollution must be avoided or minimised and remedied;
- » Waste must be avoided or minimised, reused or recycled;
- » Negative impacts must be minimised; and
- » Responsibility for the environmental health and safety consequences of a policy, project, product or service exists throughout its life cycle.

The principles of NEMA have been considered in this assessment through compliance with the requirements of the relevant legislation in undertaking the assessment of potential impacts, as well as through the implementation of the principle of sustainable development where appropriate mitigation measures have been recommended for impacts which cannot be avoided. In addition, the successful implementation and appropriate management of this proposed project will aid in achieving the principle of minimisation of pollution and environmental degradation. The project also forms part of a renewable energy project which contributes to reducing the release of CO₂ into the atmosphere through energy production by means of coal and thereby helping to curb climate change.

This process has been undertaken in a transparent manner and all effort has been made to involve interested and affected parties, stakeholders and relevant Organs of State such that an informed decision regarding the project can be made by the Competent Authority.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable (refer to **Table 3.1** below):

Table 3.1: Relevant legislative and permitting requirements applicable to the MN73 realignment

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
National Legislation			
National Environmental Management Act (Act No. 107 of 1998)	<p>EIA Regulations have been promulgated in terms of Chapter 5. Activities which may not commence without an environmental authorisation are identified within these Regulations.</p> <p>In terms of S24(1) of NEMA, the potential impact on the environment associated with these listed activities must be considered, investigated, assessed and reported on to the competent authority (the decision-maker) charged by NEMA with granting of the relevant environmental authorisation.</p> <p>In terms of the NEMA EIA Regulations a Basic Assessment Process is required to be undertaken for the proposed Project.</p>	Northern Cape Department of Environment and Nature Conservation (DENC)	» The listed activities triggered by the proposed road realignment have been identified and assessed. An application has been lodged with the DENC. The Final Basic Assessment Report is to be submitted to the DENC for review and decision making.
National Environmental Management Act (Act No. 107 of 1998)	<p>In terms of the Duty of Care provision in S28(1) the project proponent must ensure that reasonable measures are taken throughout the life cycle of this project to ensure that any pollution or degradation of the environment associated with a project is avoided, stopped or minimised.</p> <p>In terms of NEMA, it has become the legal duty of a project proponent to consider a project</p>	Northern Cape Department of Environment and Nature Conservation (DENC)	<p>While no permitting or licensing requirements arise directly, the holistic consideration of the potential impacts of the proposed Project has found application in the BA process.</p> <p>The implementation of mitigation measures are included as part of the Draft EMPr and will continue to apply throughout the life cycle of the project.</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
<p>Environment Conservation Act (Act No 73 of 1989)</p>	<p>holistically, and to consider the cumulative effect of a variety of impacts.</p> <p>In terms of section 25 of the ECA, the national noise-control regulations (GN R154 in Government Gazette No. 13717 dated 10 January 1992) were promulgated. The NCRs were revised under Government Notice Number R. 55 of 14 January 1994 to make it obligatory for all authorities to apply the regulations.</p> <p>» Subsequently, in terms of Schedule 5 of the Constitution of South Africa of 1996, legislative responsibility for administering the noise control regulations was devolved to provincial and local authorities. Provincial Noise Control Regulations exist in the Free State, Western Cape and Gauteng provinces, but the Northern Cape province have not yet adopted provincial regulations in this regard and Allows the Minister of Environmental Affairs to make regulations regarding noise, among other concerns</p>	<p>» Northern Cape Department of Environment and Nature Conservation (DENC).</p> <p>» Khai-Ma Local Municipality</p>	<p>Noise impacts are expected to be associated with the construction phase of the road and are not likely to present a significant intrusion to the local community. There is no requirement for a noise permit in terms of the legislation.</p>
<p>National Environmental Management: Biodiversity Act (Act No. 10 of 2004)</p>	<p>» In terms of the Biodiversity Act, the developer has a responsibility for:</p> <ul style="list-style-type: none"> * The conservation of endangered ecosystems and restriction of activities according to the categorisation of the area (not just by listed activity as specified in the EIA regulations). * The application of appropriate environmental management tools to 	<p>Northern Cape Department of Environment and Nature Conservation (DENC)</p>	<p>Under this Act, a permit would be required for any activity which is of a nature that may negatively impact on the survival of a listed protected species.</p> <p>An ecological study has been undertaken as part of the Basic Assessment process (refer to Appendix D1). As such the potential occurrence of critically endangered,</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	<p>ensure integrated environmental management of activities.</p> <ul style="list-style-type: none"> * Limit further loss of biodiversity and conserve endangered ecosystems. » In terms of GNR 1477 of 2009: Draft National List of Threatened Ecosystems published under S52(1)(a) of the Act provides for the listing of threatened or protected ecosystems based on national criteria. The list of threatened terrestrial ecosystems supersedes the information regarding terrestrial ecosystem status in the National Spatial Biodiversity Assessment (2011). » GNR1187 Amendment of Critically Endangered, Endangered, Vulnerable and Protected Species List published under S56(1) of the Act. 		<p>endangered, vulnerable, and protected species and the potential for them to be affected has been considered.</p> <p>A permit may be required should any listed plant species be disturbed or destroyed as a result of the proposed Project.</p>
<p>National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)</p>	<p>The purpose of this Act is to reform the law regulating waste management in order to protect health and the environment by providing for the licensing and control of waste management activities. To set standards for waste management on the project</p> <p>The Minister may by notice in the Gazette publish a list of waste management activities that have, or are likely to have, a detrimental effect on the environment.</p>	<p>Northern Cape Department of Environment and Nature Conservation (DENC)</p>	<ul style="list-style-type: none"> » As no waste disposal site is to be associated with the proposed realignment, no permit is required in this regard. » Waste handling, storage and disposal during construction is required to be undertaken in accordance with the requirements of the Act, (GN R926, of November 2013) and as detailed in the EMPr (refer to Appendix G). » The volumes of waste to be generated and stored on the site during construction of the road will not require

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	<p>In terms of the regulations published in terms of this Act (GN 921 of 29 November 2013), a Basic Assessment or Environmental Impact Assessment is required to be undertaken for identified listed activities.</p> <p>Any person who stores waste must at least take steps, unless otherwise provided by this Act, to ensure that</p> <ul style="list-style-type: none"> (a) The containers in which any waste is stored, are intact and not corroded or in any other way rendered unfit for the safe storage of waste; (b) Adequate measures are taken to prevent accidental spillage or leaking; (c) The waste cannot be blown away; (d) Nuisances such as odour, visual impacts and breeding of vectors do not arise; and (e) Pollution of the environment and harm to health are prevented. 		<p>a waste license (provided these remain below the prescribed thresholds).</p>
<p>National Environmental Management: Air Quality Act (Act No. 39 of 2004)</p>	<ul style="list-style-type: none"> » Measures in respect of dust control (S32) and National Dust Control Regulations of November 2013. » Measures to control noise (S34) - no regulations promulgated yet. » The Act provides that an air quality officer may require any person to submit an atmospheric impact report if there is reasonable suspicion that the person has failed to comply with the Act. 	<ul style="list-style-type: none"> » Northern Cape Department of Environment and Nature Conservation (DENC). » Khai-Ma Local Municipality 	<p>No permitting or licensing requirements arise from this legislation for the proposed Project.</p> <p>Dust Control Regulations describe the measures for control and monitoring of dust, including penalties. These regulations might be applicable during the construction phase of the project. Dust management have also been accounted for in the EMPr (see Appendix G)</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
National Water Act (Act No. 36 of 1998)	<ul style="list-style-type: none"> » Water uses under Section 21 of the Act must be licensed, unless such water use falls into one of the categories listed in S22 of the Act or falls under the general authorisation (and then registration of the water use is required). » Consumptive water uses may include the taking of water from a water resource and storage - Sections 21a and b. » Non-consumptive water uses may include impeding or diverting of flow in a water course - Section 21c; and altering of bed, banks or characteristics of a watercourse - Section 21i. » In terms of S19, the project proponent must ensure that reasonable measures are taken throughout the life cycle of this project to prevent and remedy the effects of pollution to water resources from occurring, continuing, or recurring. 	<ul style="list-style-type: none"> » Department of Water and Sanitation (DWS) 	<p>A water use license (WUL) is required in terms of sections 21(c) and 21 (i) of the National Water Act, if wetlands or drainage lines are impacted on, or the regulated area of a watercourse (being the riparian zone or the 1:100yr floodline whichever is greatest).</p>
National Heritage Resources Act (Act No. 25 of 1999)	<p>Section 38 states that Heritage Impact Assessments (HIAs) are required for certain kinds of development including</p> <ul style="list-style-type: none"> » the construction of a road, power line, pipeline, canal or other similar linear development or barrier exceeding 300 m in length; and 	<ul style="list-style-type: none"> » South African Heritage Resources Agency (SAHRA) » Northern Cape Provincial Heritage Resources Authority (Ngwao-Boswa Ya Kapa Bokone) 	<p>A permit may be required should heritage sites be unearthed on site during the construction phase.</p> <p>The relevant mitigation measures for the protection of heritage resources are included in the EMPr (refer to Appendix G).</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	<p>» any development or other activity which will change the character of a site exceeding 5000m² in extent.</p> <p>The relevant Heritage Resources Authority must be notified of developments such as linear developments (such as roads and power lines), bridges exceeding 50m, or any development or other activity which will change the character of a site exceeding 5000m²; or the re-zoning of a site exceeding 10 000m² in extent. This notification must be provided in the early stages of initiating the development, and details regarding the location, nature and extent of the proposed development must be provided.</p> <p>Standalone HIAs are not required where an EIA is carried out as long as the EIA contains an adequate HIA component that fulfils the provisions of section 38. In such cases only those components not addressed by the EIA should be covered by the heritage component.</p>		
<p>National Forests Act (Act No. 84 of 1998)</p>	<p>Protected trees: According to this act, the Minister may declare a tree, group of trees, woodland or a species of trees as protected. The prohibitions provide that 'no person may cut, damage, disturb, destroy or remove any protected tree, or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected</p>	<p>» Department of Agriculture, Forestry and Fisheries Northern Cape Department of Environment and Nature Conservation (DENC).</p>	<p>A permit or license is required for the destruction of protected tree species and/or indigenous tree species within a natural forest.</p> <p>No protected tree species and/or indigenous tree species were identified within the proposed 40m corridor.</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	<p>tree, except under a licence granted by the Minister’.</p> <p>Forests: Prohibits the destruction of indigenous trees in any natural forest without a licence.</p>		
<p>Hazardous Substances Act (Act No 15 of 1973)</p>	<p>This Act regulates the control of substances that may cause injury, or ill health, or death by reason of their toxic, corrosive, irritant, strongly sensitising or inflammable nature or the generation of pressure thereby in certain instances and for the control of certain electronic products. To provide for the rating of such substances or products in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, modification, disposal or dumping of such substances and products.</p> <ul style="list-style-type: none"> » Group I and II: any substance or mixture of a substance that might by reason of its toxic, corrosive etc., nature or because it generates pressure through decomposition, heat or other means, cause extreme risk of injury etc., can be declared to be Group I or Group II hazardous substance; » Group IV: any electronic product; » Group V: any radioactive material. <p>The use, conveyance or storage of any hazardous substance (such as distillate fuel) is</p>	<p>Department of Health.</p>	<p>It is necessary to identify and list all the Group I, II, III and IV hazardous substances that may be on the site and in what operational context they are used, stored or handled. If applicable, a license is required to be obtained from the Department of Health.</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	prohibited without an appropriate license being in force.		
Advertising on Roads and Ribbon Development Act 21 of 1940	<p>Section 9 refers to the "Prohibition of erection of structures near certain roads.- (1) Subject to the provisions of Section 9A no person shall erect or permit the erection of any structure or any other things which is attached on the land on which it stands, even though it does not form part of that land, or construct or lay or permit the construction or laying of anything under or below the surface of any land within a distance of ninety-five metres from the centre line of a building restriction road, or make or permit to be made any structural alteration or addition to any such structure or thing situated, except in accordance with the permission in writing granted by the controlling authority concerned: Provided that the preceding provisions of this section shall not apply in connection with –</p> <p>Section 9A, the prohibition of erection of structures or construction of other things near intersection of certain roads. – (1) No person shall –</p> <p>a) on land situated within a distance of 500m from the intersection of the centre line of –</p> <p>i. a building restriction road with the centre line of another building restriction road or any other road;</p>	The Northern Cape Department of Roads and Public Works	Being proclaimed roads, MN73 and R357 are Building Restriction Roads. As such they are subject to a 95m building line in terms of the Advertising on Roads and Ribbon Development Act 21 of 1940. The roads are also subject to a 500m building line measured from road intersections in terms of said Act. The Provincial Roads Authority would need to grant permission for encroachment on said building lines

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	ii. any road with the boundary of any building restriction road with which it links up, except a national road as defined in the National Roads Act, 1971 (Act No. 54 of 1971), erect any structure or any other thing which is attached to the land on which it stands, whether or not it forms part of that land.		
Provincial Legislation			
Northern Cape Nature Conservation Act, No. 9 of 2009	Nature Conservation Act accompanied by all amendments is regarded by the Northern Cape Province as the legal binding, provincial documents, providing regulations, guidelines and procedures with the aim of protecting game and fish, the conservation of flora and fauna and the destruction of problematic (vermin and invasive) species. This act should be considered in its entirety, with special reference to: » Schedule 1: Specially Protected Species » Schedule 2: Protected Species » Schedule 6: Invasive Species	Northern Cape Department of Environment and Nature Conservation (DENC).	A collection/destruction permit must be obtained from Northern Cape Nature Conservation for the removal of any protected plant or animal species found on site.

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

If YES, what estimated quantity will be produced per month?

YES

Not determined at this time. Minimal waste is expected to be generated by the activity and can be managed effectively through the management measures included in the EMPr (refer to **Appendix G**).

How will the construction solid waste be disposed of (describe)?

It is anticipated that construction waste will be comprised mainly of soil material from excavation activities. Non-recyclable waste will be removed from site by a suitable contractor and will be transported to the nearest registered waste disposal facility for appropriate disposal.

Where will the construction solid waste be disposed of (describe)?

In order to comply with legal requirements, should there be excess solid construction waste after recycling options have been exhausted, the waste will be transported to the nearest registered waste disposal facility for appropriate disposal.

Will the activity produce solid waste during its operational phase?

If YES, what estimated quantity will be produced per month?

NO

m³

How will the solid waste be disposed of (describe)?

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA? **NO**

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility? **NO**

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? **NO**

If YES, what estimated quantity will be produced per month? m³

Will the activity produce any effluent that will be treated and/or disposed of on site? **NO**

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility? **NO**

If YES, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

Waste separation will be implemented as far as possible to allow for recycling if feasible.

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

	NO

If YES, is it controlled by any legislation of any sphere of government?

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

During the construction phase, it is expected that there will be short term, localised dust generation and exhaust emissions from vehicles and machinery. However, the dust and emissions will be of short term duration and have limited impact in terms of extent and severity. Appropriate dust suppression measures must be implemented to reduce the impacts. It is recommended that construction vehicles be serviced and kept in good mechanical condition in order to minimise possible exhaust emission. In this regard, the EMPr includes the relevant mitigation measures (refer to **Appendix G**).

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

	NO
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If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority.

e) Generation of noise

Will the activity generate noise?

YES	
	NO

If YES, is it controlled by any legislation of any sphere of government?

Describe the noise in terms of type and level:

Short term noise impacts are anticipated during the construction phase of the project from trucks and construction equipment. It is however anticipated that the noise will be localised and contained within the construction area and its immediate surroundings. Noise and vibrations from heavy vehicle traffic during the construction phase are unlikely to result in disruptions in daily living, movement patterns and quality of life for the local community due to the location of the realignment site. In this regard, the EMPr includes the relevant mitigation measures (refer to **Appendix G**).

13. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal	Water board	Groundwater	River, stream, dam or lake	Water will be supplied by means of trucks	The activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

Approximately 800 - 1200m³ per month

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

	NO
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If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

A water use license (WUL) will be required in terms of sections 40, 21(c) and 21 (i) of the National Water Act. An application will be submitted to the Department of Water and Sanitation (DWS) prior to the commencement of the construction phase.

14. ENERGY EFFICIENCY

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

Not applicable. The purpose of the road realignment is to ensure safe and adequate road access while accommodating the authorised Paulputs CSP Facility and other solar energy facilities near the Paulputs Substation.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

Not applicable. The activities to be undertaken during the construction and operation phase of this project will not require alternative energy sources.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

- Paragraphs 1 - 6 below must be completed for each alternative.

- Has a specialist been consulted to assist with the completion of this section?

YES

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D. The specialist reports are included in **Appendix D1 – D4** and the associated declarations of each specialist have been included in **Appendix I**.

Property

description/physical address:

Province	Northern Cape Province
District Municipality	Namakwa District Municipality
Local Municipality	Khai-Ma Local Municipality
Ward Number(s)	1
Farm name and number	Scuitklip 92
Portion number	Portion 4
SG Code	C0360000000009200004

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:	The northern section of Portion 4 of the Farm Scuitklip 92 is zoned for Agricultural use. A re-zoning process to Special Solar use will be undertaken by Abengoa Solar Power South Africa (Pty) Ltd for the authorised Paulputs CSP Facility footprint, which includes the section of
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	the MN73 road to be realigned. The footprints of the existing KaXu CSP and Xina CSP Facilities on the southern section of Portion 4 of the Farm Scuitklip 92 has already been rezoned as Special Solar use.
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In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

YES

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative 1: Realignment of MN73

Flat	1:50	-	1:20	-	1:15	-	1:10	-	1:7,5	-	Steeper than 1:5
	1:20		1:15		1:10		1:7,5		1:5		

Alternative S2 (if any):

Flat	1:50	-	1:20	-	1:15	-	1:10	-	1:7,5	-	Steeper than 1:5
	1:20		1:15		1:10		1:7,5		1:5		

Alternative S3 (if any):

Flat	1:50	-	1:20	-	1:15	-	1:10	-	1:7,5	-	Steeper than 1:5
	1:20		1:15		1:10		1:7,5		1:5		

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline

2.4 Closed valley

2.7 Undulating plain / low hills

2.2 Plateau

2.5 Open valley

2.8 Dune

2.3 Side slope of hill/mountain

2.6 Plain

2.9 Seafront

2.10 At sea

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

Alternative 1:

Shallow water table (less than 1.5m deep)	NO
Dolomite, sinkhole or doline areas	NO
Seasonally wet soils (often close to water bodies)	NO
Unstable rocky slopes or steep slopes with loose soil	NO
Dispersive soils (soils that dissolve in water)	NO
Soils with high clay content (clay fraction more than 40%)	NO
Any other unstable soil or geological feature	NO
An area sensitive to erosion	YES

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition^E	Natural veld with scattered aliens^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "E" is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise (refer to the Ecological Report in **Appendix D1**).

The study area falls within the Karoo Biome and the 40m corridor proposed for the road realignment consists solely of one vegetation type, namely Bushmanland Arid Grassland (i.e. the plains within the Portion 4 of the Farm Scuitklip 42). This vegetation type is classified as Least Threatened.

Bushmanland Arid Grassland occurs on extensive, relatively flat plains and is sparsely vegetated by tussock grasses as well as abundant displays of annual herbs following heavy rain. This vegetation type contains endemic species belonging to the Griqualand West or Gariiep Centres of Endemism. At a national scale this vegetation type has been

transformed to a slight degree and only small patches are statutorily conserved in Augrabies Falls National Park and Goegab Nature Reserve.

The study area consists mainly of three vegetation communities which includes:

» *Acacia mellifera* – *Aristida congesta* dune open shrubland

This vegetation community is typically covered by sparse open grassland, with *Stipagrostis ciliata* and *Aristida congesta* being the dominant grass species. Due to the deeper soils, as well as soil chemistry and an increased water retention potential, larger *Acacia mellifera* are dominant in this vegetation community, with scattered, drought resistant dwarf shrubs or small trees, e.g. *Rhigozum trichotomum* and *Boscia foetida*. Species of concern found to occur in this vegetation community are the protected species *Aloe dichotoma* and *Boscia foetida* therefore suitability of the habitat for flora and fauna species of concern is high.

» *Acacia mellifera* – *Parkinsonia africana* wash open shrubland

The drainage line within the plains of the study area is regarded as a wash, as water will only flow after good rains, and soon will be dry again. The increased water retention in the underlying substrate allows for the growth of larger individuals of the species *Acacia mellifera* and *Parkinsonia africana*. This wash are wide and sandy, and blend into the landscape, merging with the adjacent grassland vegetation, but are nevertheless visible due to their microtopography and change in species composition.

The vegetation is often somewhat heterogeneous and with weeds, due to the disturbance of the periodic flooding. Suitability of the habitat for Red Data flora and fauna species is low.

» *Stipagrostis ciliata* – *Aristida congesta* open grassland

The open, sparse grassland is dominated by *Stipagrostis ciliata* and *Aristida congesta*. The shrubby *Rhigozum trichotomum* is prominent on the sandy localities while *Salsola aphylla* is more prominent where calcrete is exposed. Other dominant grass species occurring in this vegetation community include *Stipagrostis obtusa*, *Aristida adscensionis* and, to a much lesser extent, *Fingerhuthia africana* and *Eragrostis lehmanniana*. Suitability of the habitat for Red Data flora and fauna species is high (*Hoodia gordonii* recorded as well as isolated individuals of *Boscia foetida*).

Refer to the Ecological Report in **Appendix D1** for additional detail.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		NO	
Non-Perennial River	YES		
Permanent Wetland		NO	
Seasonal Wetland		NO	
Artificial Wetland		NO	
Estuarine / Lagoonal wetland		NO	

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

Portion 4 of the Farm Scuitklip 92 is situated within quaternary catchment D81E and is dominated by highly ephemeral river systems (DWAF, 2004). Potential runoff would flow in a north westerly direction towards the Gariiep River, while runoff from the elevated portions of the Skuitklip ridges flows in a northerly direction towards the Kaboep River, which then flows into the Gariiep River.

The region is however dominated by several dry alluvial watercourses which only hold water during high rainfall events. These systems have been highly fragmented by the existing roads and land use practices in the past, while the existing CSP facilities on the farm portion have now disrupted any flows within these systems. The significance of impact on the dry alluvial watercourse was assessed as being of low significance, due to the impacts and high degree of fragmentation coupled to the general lack of any important/visible aquatic habitat.

An ephemeral drainage line (or wash) bisects the northern section of Portion 4 of the Farm Scuitklip 92 from east to west, gradually narrowing towards the east of the project site. This ephemeral drainage line is regarded as a wash, as water will only flow after good rains, and soon dry up again.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

<p>Natural area Although overgrazed in some areas, the vegetation of the <i>Acacia mellifera</i> – <i>Aristida congesta</i> dune open shrubland and <i>Stipagrostis ciliata</i> – <i>Aristida congesta</i></p>	<p>Dam or reservoir</p>	<p>Polo fields</p>
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open grassland can be described as natural vegetation. Generally, this vegetation community contains all the elements that can be expected in natural vegetation in this area.		
Low density residential	Hospital/medical centre	Filling station ^H
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential ^A	Church	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland No natural wetlands were observed. There are ephemeral drainage lines within the broader study area which are highly fragmented by existing facilities, and have disrupted any flows within these systems.
Light industrial	Sewage treatment plant ^A	Nature conservation area
Medium industrial ^{AN}	Train station or shunting yard ^N	Mountain, koppie or ridge The broader study area is located on flat plains, gently sloping from the south to the north, dunes to the west and several rocky features in the north eastern part of Portion 4 of the Farm Scuitklip.
Heavy industrial ^{AN}	Railway line ^N	Museum
Power station There are currently two existing CSP facilities; KaXu Solar One and Xina Solar One are located on the southern section of the farm portion.	Major road (4 lanes or more) ^N	Historical building
Office/consulting room	Airport ^N	Protected Area

Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam ^A	Sport facilities	<p>Archaeological site</p> <p>The rocky outcrops that occur on the north eastern boundary of the farm portion provided shelter and variety of resources that attracted human activity in the Stone Age. The outcrop situated nearest to the 40m road realignment corridor is approximately 1.5km away. Memorial sites are located below Ysterberg. All of these features are well outside of the area considered for the road realignment.</p>
Quarry, sand or borrow pit	Golf course	<p>Other land uses (describe)</p> <p>The project site is traversed by two existing power lines which includes the Paulputs/KaXu 1 132kV power line and the Paulputs/Schuitdrift 1 132kV power line, as well as the existing MN73 which is proposed to be realigned. There are currently two existing substations situated within Portion 4 of the Farm Scuitklip 92 and includes the Paulputs Substation and the KaXu Substation. A third substation has been approved as part of the Paulputs CSP Facility's environmental authorisation</p>

If any of the boxes marked with an "N" are ticked, how this impact will / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)		NO
Core area of a protected area?		NO
Buffer area of a protected area?		NO
Planned expansion area of an existing protected area?		NO
Existing offset area associated with a previous Environmental Authorisation?		NO
Buffer area of the SKA?		NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

The study area falls within an Ecological Support Area (ESA) and is adjacent to a Critical Biodiversity Area (CBA), but does not infringe on this area. Refer to the map illustrating the ecological support and critical biodiversity areas in **Appendix A**.

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES	NO
	Uncertain	
No buildings older than 60 years and heritage significance were identified within the 40m corridor for the proposed MN73 realignment or within 20m from the corridor.		

No significant archaeological occurrences were found on within the 40m corridor, however, Stone Age artefacts associated with the rocky outcrops were found to be sensitive and the feature is therefore excluded from the development footprint. The outcrop situated nearest to the 40m road realignment corridor is approximately 1.5km away.

Several memorial sites have been identified Portion 4 of the Farm Scuitklip 92 but not in the 40m corridor proposed for the road realignment. The closest memorial site is approximately 370m from the 40m corridor. Since these sites are not actually graves, a 10m no-go buffer has been recommended.

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

A specialist investigation of the full extent of Portion 4 of the Farm Scuitklip 92 was conducted by the McGregor Museum and assessed both the authorised Paulputs CSP Facility and the road realignment. Through this assessment the heritage features occurring in the broader study area have been identified (refer to **Appendix D3**). It is confirmed that no heritage features are impacted by the proposed realignment of the MN73.

A desktop Palaeontological Impact Assessment (PIA) of the full extent of Portion 4 of the Farm Scuitklip 92 has previously been undertaken by John Pether in 2010⁵. The section of the MN73 road realignment entails shallow disturbance of superficial, geologically young (Quaternary) deposits which have low palaeontological potential and sensitivity and very few fossils have been found in this context. It was concluded that the potential of palaeontological features occurring within Portion 4 of the Farm Scuitklip 92 is low, and that no field surveys and monitoring of bulk earth works would be required (refer to **Appendix J3**).

The rocky outcrops and hills all had some trace of human activity from Stone Age to colonial times, with (from the Later Stone Age) small scatters of ostrich eggshell, quartz flakes and an upper grindstone adjacent to a bedrock grinding surface; a large core (Earlier Stone Age); and two instances of rectangular dry-packed stone walling (colonial). The landscape features are considered as sensitive and a no-go buffer of 60m has been recommended. Stone Age artefacts are considered to be of low sensitivity, but their cumulative significance is higher as the artefacts are particularly focused at these landscape features.

⁵ Pether, J. 2010. Brief Palaeontological Impact Assessment (Desktop Study). Proposed Pofadder Solar Thermal Plant. Portion 4 of the Farm Scuit-Klip 92, Kenhardt District, Northern Cape. 3 December 2010.

Several memorial sites are located below Ysterberg which are regarded as high sensitivity and it is recommended that these memorial markers be respected by way of a 10m buffer zone. These memorials are completely avoided by the realignment of a section of the MN73 and the 40m assessment corridor. The open plains have been found to have sparsely scattered artefacts of which none have been identified within the 40m assessment corridor. Therefore, all these heritage features i.e. memorial sites, rocky features and scattered artefacts have been considered and will not be impacted by the realignment.

The project site straddles a sediment-choked drainage plain crossed by ephemeral, braided stream flows produced in a sheetflood and flashflood sediment-transport regime. Colluvial and Aeolian deposits occur along the drainage-plain margins. The section of the MN73 road to be realigned entails shallow disturbance of these superficial, geologically young (Quaternary) deposits which have low palaeontological potential and sensitivity. Very few fossils have been found in this context in the Northern Cape Province. In view of the low fossil potential of the project site, field surveys and monitoring of bulk earth works by a specialist are not justified.

Will any building or structure older than 60 years be affected in any way?

NO

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

NO

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

A Social Impact Assessment has been undertaken specifically for the section of the MN73 to be realigned and is included as **Appendix D4**.

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

The total unemployment rate in the Khai-Ma Local Municipality (KMLM) is 22.1%. Youth unemployment rate is currently 23.6%. Amongst the population, 4600 people are employed, 1304 people are unemployed, 322 are classified as discouraged work-seekers, and 2327 are not economically active. The unemployment rate is therefore considered high.

Economic profile of local municipality:

Agricultural activities and mining are the main economic activities in the local Municipality. The agricultural sector includes livestock (i.e. cattle, sheep and goat rearing) and flower bulbs farming as well as wool production. The Gariiep River plays a critical role in the region’s agricultural and alluvial diamond mining activities. The highest number of individuals in the Namakwa District Municipality is employed within the agricultural sector; (hunting, forestry and fishing) followed by the mining and quarrying sector. Agriculture is the dominant employment sector within the district and only a small number of people are employed within alternative industries. The two emerging sectors are renewable energy as well as conservation and ecological restoration.

Level of education:

The majority of the adult population (individuals aged 20 years and above) that reside in KMLM have some form of education. However, only 9.8% completed secondary education, with only 1.2% of the population having attained higher education, and 2% had no schooling.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	~R 3 267 000.00
What is the expected yearly income that will be generated by or as a result of the activity?	This activity does not form part of the associated infrastructure of the Paulputs CSP Facility, and as this is an application for a realignment of a public road (MN73), no yearly income will be generated.
Will the activity contribute to service infrastructure?	YES
Is the activity a public amenity?	YES
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	~15
What is the expected value of the employment opportunities during the development and construction phase?	~R 980 100.00
What percentage of this will accrue to previously disadvantaged individuals?	~75%

How many permanent new employment opportunities will be created during the operational phase of the activity?	Zero. This is an existing road which is to be realigned only.
What is the expected current value of the employment opportunities during the first 10 years?	None
What percentage of this will accrue to previously disadvantaged individuals?	None, as this is an existing road which is to be realigned only.

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report (refer to the Ecological Report in **Appendix D1**).

The specialist investigation assessed the study area which includes the area west of the MN73 to be decommissioned and north of the existing Paulputs/Scuitdrift 1 132kV and Paulputs/KaXu Solar 1 132kV power lines and was conducted by Hudson Ecology.

- a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)**

Systematic Biodiversity Planning Category	If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan.
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Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	Ecological Support Areas (ESAs) are less critical areas that still provide valuable habitat and support the CBAs. According to the Khai-Ma Land Use Decision Support tool, the entire study area falls within an ESA. The ESA is listed as a migration route, although the species utilising this migration route are not known. This large mapped unit (i.e. much larger than just the study area) supports a significant number of rare and localised plant species, and provides ecological connectivity in all directions, at a regional scale. All of these factors are reasons for its selection as an ESA.
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b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	74%	Although overgrazed in some areas, the vegetation of the <i>Acacia mellifera</i> – <i>Aristida congesta</i> dune open shrubland and <i>Stipagrostis ciliata</i> – <i>Aristida congesta</i> open grassland can be described as natural vegetation. Generally, this vegetation community contains all the elements that can be expected in natural vegetation in this area.
Near Natural (includes areas with low to moderate level of alien invasive plants)	26%	The <i>Acacia mellifera</i> – <i>Parkinsonia africana</i> wash open shrubland can generally be described as natural vegetation with a low level of alien invasive species.

Degraded (includes areas heavily invaded by alien plants)	0%	No areas of severe infestation of exotic species occur along or within the 40m road realignment corridor.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	0%	No transformed areas occur within the 40m road realignment corridor.

c) Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems			
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)	Estuary	Coastline	
	Endangered				
	Vulnerable				
	Least Threatened	YES		NO	

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

The project site is situated within quaternary catchment D81E and is dominated by highly ephemeral river systems (DWAF, 2004). Potential runoff would flow in a north westerly direction towards the Gariep River, while runoff from the elevated portions of the Skuitklip ridges flows in a Northerly direction towards the Kaboep River, which then flows into the Gariep River.

No natural wetlands were observed within the 40m assessment corridor for the MN73 road realignment. There are several dry alluvial watercourses, which only flow during high rainfall events. These systems are highly fragmented by the roads and farming practices undertaken on the property in the past, while the CSP trough plants which have been constructed adjacent to and upstream of the project development area have

now disrupted and diverted any flows within these systems. The significance of this impact at the time of assessing the adjacent CSP projects was low due to the high degree of long-term and historic fragmentation of the system, coupled to the general lack of any important / visible aquatic habitat (Scherman Colloty & Associates, 2016)⁶.

The project site falls within the Karoo Biome and the 40m corridor proposed for the road realignment consists solely of one vegetation type, namely Bushmanland Arid Grassland (i.e. the plains within the Portion 4 of the Farm Scuitklip 42). This vegetation type is classified as Least Threatened.

Bushmanland Arid Grassland occurs on extensive, relatively flat plains and is sparsely vegetated by tussock grasses as well as abundant displays of annual herbs following heavy rain. This vegetation type contains endemic species belonging to the Griqualand West or Gariep Centres of Endemism. At a national scale this vegetation type has been transformed to a slight degree and only small patches are statutorily conserved in Augrabies Falls National Park and Goegab Nature Reserve.

The study area consists mainly of three vegetation communities which includes:

» *Acacia mellifera* – *Aristida congesta* dune open shrubland

This vegetation community is typically covered by sparse open grassland, with *Stipagrostis ciliata* and *Aristida congesta* being the dominant grass species. Due to the deeper soils, as well as soil chemistry and an increased water retention potential, larger *Acacia mellifera* are dominant in this vegetation community, with scattered, drought resistant dwarf shrubs or small trees, e.g. *Rhigozum trichotomum* and *Boscia foetida*. Species of concern found to occur in this vegetation community are the protected species *Aloe dichotoma* and *Boscia foetida* therefore suitability of the habitat for flora and fauna species of concern is high. Ecological integrity of this community is high and the conservation importance of the community is moderate to high.

» *Acacia mellifera* – *Parkinsonia africana* wash open shrubland

The drainage line within the plains of the study area are regarded as a wash, as water will only flow after good rains, and soon they will be dry again. The increased water retention in the underlying substrate allows for the growth of larger individuals of the species *Acacia mellifera* and *Parkinsonia africana*. This wash is wide and sandy, and blend into the landscape, merging with the adjacent grassland vegetation, but are nevertheless visible due to their microtopography and change in species composition.

⁶ Scherman Colloty and Associates. 2012. Water Resources Assessment: Paulputs Concentrated Solar Plant, Northern Cape Province.

The vegetation is often somewhat heterogeneous and with weeds, due to the disturbance of the periodic flooding. Suitability of the habitat for Red Data flora and fauna species is low. The ecological integrity of this community is low - moderate and the conservation importance is low - moderate.

» *Stipagrostis ciliata* – *Aristida congesta* open grassland

The open, sparse grassland is dominated by *Stipagrostis ciliata* and *Aristida congesta*. The shrubby *Rhigozum trichotomum* is prominent on the sandy localities while *Salsola aphylla* is more prominent where calcrete is exposed. Other dominant grass species occurring in this vegetation community include *Stipagrostis obtusa*, *Aristida adscensionis* and, to a much lesser extent, *Fingerhuthia africana* and *Eragrostis lehmanniana*. Suitability of the habitat for Red Data flora and fauna species is high (*Hoodia gordonii* recorded as well as isolated individuals of *Boscia foetida*). The ecological integrity of this community is low - moderate; while the conservation importance of this community is moderate - high.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Volksblad	
Date published	27 February 2017	
Site notice position	Latitude	Longitude
	28°50'56.12"	19°34'54.08"
Date placed	May 2016	

Include proof of the placement of the relevant advertisements and notices (refer to **Appendix E1**).

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.982.

- » A2 Site notices were placed on the farm boundary, adjacent to the access road to the site.
- » A4 notices were placed at the Pofadder Supermarket and at the Pofadder Library.
- » An advert was placed in one local newspaper (Gemsbok) to notify the public of the EIA process and availability of the Basic Assessment Report for review.
- » Focus group meetings were held concurrently with the public participation meetings arranged for the Paulputs CSP Facility. Focus group meeting were held with:
 - Northern Cape Department of Roads and Public Works (DR&PW) – 26 May 2016
 - Mr F Van Der Heever (Neighbouring landowner) – 26 May 2016
 - Mr W Burger (Neighbouring landowner) – 26 May 2016
 - Department of Water and Sanitation – 27 May 2016
- » All impacted and adjacent landowners were contacted telephonically in August 2016. The purpose of these telephonic consultations was to determine whether landowners had any further issues or concerns regarding the proposed road realignment. Some of the concerns raised included the increase of dust that settles on grass and that livestock does not eat dust covered grass.
- » Stakeholder and I&AP issues and comments that have been raised for this Basic Assessment however are included in the Comments and Responses Report in Appendix E3.

Refer to **Appendix E6 and E7** for a record of the consultation undertaken to date. This includes the records of telephone discussions as well as the minutes compiled for the telephonic discussions.

Key stakeholders (other than organs of state) identified in terms of Regulation 40(2)(c) and (d) of GN R.982 (the details of the stakeholders are included in **Appendix E5** - I&AP Database).

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2 (refer to **Appendix E2**; additional proof will be included with the Final BAR). This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

Notification letters sent to key stakeholders will be included in **Appendix E2** of this report.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

All comments received during the review period of the Basic Assessment report, as well as responses provided are captured and recorded within the Comments and Response Report attached as Appendix E.

Summary of main issues raised by I&APs	Summary of response from EAP
DR&PW: How long will the section of the road be that will decommissioned?	Approximately 3km of the road would be decommissioned. The realigned section of the road would be approximately 4km and that the road would be 7m wide within a road reserve of 20m.
DR&PW: What will the displacement be from the existing route alignment?	The route would be realigned around the heliostat field of the planned Paulputs CSP project. The realigned road would be approximately 1km longer than the current alignment.

<p>DR&PW: The wayleave application for requested road deviation would need to be undertaken by the DR&PW in terms of Roads Ordinance (19/1976) – Closing and proclamation of roads.</p> <p>A public participation process is required to be undertaken in terms of this process. Written notices will be issued by the DR&PW to the affected property owner/s as well as property owners located along the MN73 south of the project site. A newspaper advertisement announcing the process will be placed in a local newspaper. I&APs would have 21-days to lodge objections on the application. The realigned road would be declared and gazetted if no objections are lodged by I&APs.</p> <p>The environmental assessment process can run concurrently with the wayleave application process.</p>	<p>It is acknowledged that the NC DR&PW would undertake the wayleave application for the road realignment in terms of Roads Ordinance (19/1976) – Closing and proclamation of roads.</p> <p>The public participation process required for the wayleave application will be undertaken by DRPW. Savannah Environmental has provided the DRPW with the contact details of the affected road users and have also engaged with them as part of this Basic Assessment Process. To date no objections have been received regarding the planned realignment.</p>
<p>DWS: Will drainage lines be impacted on by the proposed road realignment?</p>	<p>An ephemeral drainage line (wash) will be traversed by the road corridor but is considered to be of low significance as this system is highly fragmented by the existing MN73 and other road and past land use practices, and the adjacent KaXu and Xina CSP facilities have now disrupted any flows within this system.</p>
<p>DWS: Who owns the property where the proposed road realignment is to be undertaken?</p> <p>Please note that the proposed activity requires a water use licence in terms of section 40 of the National Water Act (Act 36 of 1998) therefore an application should be submitted to this Department.</p>	<p>The property belongs to KaXu CSP South Africa (Pty) Ltd.</p> <p>It is noted that the realignment of a section of the MN73 will require a water use license in terms of section 40 and section 21 (c) and (i) of the National Water Act (Act 36 of 1998) and an application will be submitted to DWS for approval prior to the commencement of the construction phase.</p>

<p>F Van Der Heever (Adjacent Landowner): I do not have an objection to the road being realigned. It is important that the construction of the new road be done properly and that it is adequately maintained. We are currently experiencing issues regarding stormwater runoff from the existing Abengoa project which floods the Paulputs road when it rains. Proper stormwater management systems must be constructed.</p>	<p>Abengoa are investigating ways in which to address the stormwater runoff on their existing sites.</p> <p>A stormwater management plan will form part of the design documents prepared prior to the construction of the realigned section of road.</p>
<p>Willem Burger (Adjacent Landowner): I have no issues with the development. Will the road realignment remain within the applicant's property? When will construction will start? The MN73 is in a very poor state at the moment.</p>	<p>The road would remain within Portion 4 of the Farm Scuitklip 92. Construction will commence with the construction of the Paulputs CSP Project. After the realignment, the MN73 will be maintained by the DR&PW.</p>
<p>DAFF: The report confirmed the presence of the provincially protected Quiver tree <i>Aloidendron dichotomum</i>. There is currently a Moratorium in place in the Northern Cape, prohibiting removal of this species from the wild.</p> <p>The report stated that there is a high probability that Camel thorn <i>Vachellia erioloba</i> may occur on site. All possible efforts should be made to minimise impacts on protected tree.</p>	<p>The <i>Aloidendron dichotomum</i> Quiver tree was only recorded in the eastern section of Portion 4 of the Farm Scuitklip 92. All individuals of this species were observed outside of the footprint of the MN73 realignment. Therefore this species will not be affected by the development and is complies with the Moratorium which prohibits removal of the Quiver tree <i>Aloidendron dichotomum</i> from the wild.</p> <p><i>Acacia erioloba</i>, also known as Camel thorn <i>Vachellia erioloba</i> has a high probability of occurring in the area, or within the defined corridor. Mitigation measures to minimise impacts on protected tree species have been included within the Environmental Management Programme (refer to Appendix G) as well as within Appendix D1 of the Basic Assessment.</p>

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as **Appendix E3**. Comments received during the public review also form part of this Final BAR submitted to the DENC for review and consideration.

The comments and responses have been captured in a Comments and Response report and attached as **Appendix E3**.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders (refer to **I&AP database contained in Appendix E5**).

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address

Include proof that the Authorities and Organs of State received written notification of the proposed activities – this evidence is provided in **Appendix E3 and E6**.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation 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. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs is included as **Appendix E5**.

Copies of all correspondence and minutes of all meetings and telephonic discussions held are included in **Appendix E6**.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 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. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION AND OPERATIONAL PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts 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. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

1.1 Planning and/or Design Phase

Activities associated with the design and pre construction phase pertains mostly to feasibility assessments undertaken at a desktop level. Geotechnical surveys are usually undertaken in this phase and could result in impacts mainly associated with disturbance of vegetation and soils at localised areas where the development activities are said to commence.

1.2 Construction and Operation Phase/Maintenance

A summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the Construction and Operation/Maintenance Phase of the proposed Project are provided in the tables which follow.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
<i>Ecological impacts</i>			
Construction of the realigned road	<p><i>Direct impacts:</i></p> <ul style="list-style-type: none"> » Disturbance of vegetation and protected plant species » Soil erosion » Alien plant species invasion » Loss of habitat for resident fauna » Effects on local migrations. 	Low	<ul style="list-style-type: none"> » Vegetation clearing is inevitable and unavoidable. Mitigation of this impact can, however, be implemented by keeping the area cleared to a minimum and careful removal and replanting of plants and trees of conservation importance. Seed collection, propagation and re-planting of saplings to make up for lost species should also be considered. » Areas of high conservation importance and/or ecological integrity should be avoided if possible, or kept to a minimum and any species of concern relocated, or demarcated to prevent destruction, before the ground clearing begins. » Ground clearing should take place at the beginning of winter in order to minimise impacts on young of burrowing animals and nesting birds. » The impact of vegetation clearing is likely to be a long term impact, but through careful planning and rehabilitation can be greatly reduced. Topsoil should be stockpiled for revegetation once construction is completed. Search and rescue of species of concern should take place before ground clearing. » A low speed limit can be strictly enforced in order to reduce collisions with animals on the roads during construction phase. » An exotic/invasive species monitoring and management plan should be put in place to manage exotic and invasive species.

			<ul style="list-style-type: none"> » An erosion monitoring and mitigation plan should be put in place to help with the early detection of erosion and advising management on problem areas and remediation plans. » The implementation of a stormwater management plan and the management of stormwater to prevent large volumes of high energy, especially within the road reserve.
	<p>Indirect impacts:</p> <ul style="list-style-type: none"> » Limited biodiversity loss of floral and faunal species » Limited disruption of ecosystem functions i.e. fragmentation » Spillage of harmful or toxic substances » Increased levels of noise, pollution, disturbance and human presence impacting on fauna. 	<p>Low</p>	<ul style="list-style-type: none"> » The spillage of harmful or toxic substances can be mitigated by the implementation of best practice management measures for the storage and handling of all hazardous substances as well as through the implementation of a sound emergency spillage containment plan, which can be implemented as soon as a spill of harmful or toxic substances occurs. » Vibration and noise from heavy machinery can be kept to a minimum by reducing the movement of heavy vehicles to a minimum necessary for construction. » Placing the vehicle yard as close to the construction area as possible will also reduce the scale of impact of vibration. » Dust suppression on roads by water bowsers or the use of other appropriate dust suppressants, if no water is available; » Exposed excavations, disturbed ground surfaces, and unpaved traffic areas can be maintained in a moist condition. » During non-working hours in the construction phase, the site can be left in a condition that will prevent dust from being generated. At the end of each work day, disturbed areas can be wetted down and security

			<p>fencing can be installed and or inspected to prevent access and additional disturbance.</p> <ul style="list-style-type: none"> » Provide temporary cover and daily maintenance for soil stockpiles and keep active surfaces moist. » A temporary decontamination pad and/or a stabilised construction entrance can be provided at active site entrance/egress locations to keep adjacent paved areas clean. » Construction activities should be conducted using methods that minimise dust generation. » The following Best Management Practices (BMPs) can also be followed to help minimise and control dust emissions at the site, during construction of the road. » All on-site traffic can be restricted to specific designated roads. Off-road travel can only be authorised on a case-by-case basis (e.g. access to a remote monitoring well, etc.). Traffic speed can also be restricted to an appropriate level on all designated roads. All designated roads can be considered as high potential dust source areas, and as such, can be a priority for dust controls utilising water and/or gravel.
	<p>Cumulative impacts:</p> <ul style="list-style-type: none"> » Cumulative impacts on vegetation are likely to be very low given the limited expected vegetation clearance. » Vibration and noise from construction will have a significant effect mainly on fauna species. » The construction of the infrastructure would contribute to cumulative habitat degradation, but the contribution would be of low significance. 	<p>Low</p>	<ul style="list-style-type: none"> » As this is the realignment of an existing road, there are unlikely to be increased cumulative impacts.

	<ul style="list-style-type: none"> » Further increase of exotic invasive species. » Cumulative impacts within the surrounding environment due to the increase of erosion which can eventually lead to the loss of vegetation and habitats for fauna species. 		
<u>Impacts on Drainage Systems</u>			
Construction of the realigned road	Direct impacts: <ul style="list-style-type: none"> » Impacts on localised drainage systems (ephemeral wash). 	Low	<ul style="list-style-type: none"> » Any stormwater within the 40m assessment corridor must be handled in a suitable manner, i.e. install stilling basins to capture large volumes of run-off, trap sediments and reduce flow velocities. » A Stormwater Management Plan will be required for a bridge structure over the watercourse, and should be compiled as part of the WULA prior to the commencement of the construction phase of the development.
	Indirect impacts: <ul style="list-style-type: none"> » Reduced functionality of drainage system. 	Low	
	Cumulative impacts: <ul style="list-style-type: none"> » The increase in surface run-off velocities and the reduction in the potential for groundwater infiltration. 	Low	
<u>Heritage impacts</u>			
Construction of the realigned road	Direct impacts: <ul style="list-style-type: none"> » Potential impact on archaeological and historical heritage remains. » Potential impact on palaeontological features 	Low	<ul style="list-style-type: none"> » Artefact densities are zero to extremely low along the road realignment corridor. Identified features occur well outside of the corridor (i.e. the nearest rocky outcrop is situated ~1.5km to the east). Heritage destruction generally has a once-off permanent impact. The significance of the impact is considered to be of low significance. Mitigation measures are not considered necessary.
	Indirect impacts: N/A	N/A	

	<p>Cumulative impacts:</p> <ul style="list-style-type: none"> » Irreplaceable loss of archaeological heritage resources 	<p>Low</p>	<ul style="list-style-type: none"> » A Heritage Monitoring Programme, including a chance find procedure, has been developed and included as Appendix H of the Environmental Management Programme (refer to Appendix G of the Basic Assessment).
<u>Social impacts</u>			
<p>Construction of the realigned road</p>	<p>Direct impacts:</p> <ul style="list-style-type: none"> » Job creation and skills development (positive impact). » Influx of economic seekers » Safety and security impacts » Traffic Impacts 	<p>High (positive) Low (negative)</p>	<ul style="list-style-type: none"> » Efforts should be made to employ local contractors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria, where possible. » Establish a 'labour and employment desk'. » Local businesses should be given priority to enhance employment opportunities for the immediate local area; Pofadder, Onseepkans and Pella. » Recruitment of temporary workers at the gates of the development should not be allowed. A recruitment office should be established by the contractor in a nearby town to deal with jobseekers. » A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process. A Public Complaints register must be maintained, by the contractor and monitored by the ECO, to record all complaints and queries relating to the project and the action taken to resolve the issue. » Working hours should be kept between 6am and 6pm during the construction phase, and/or as any deviation that is approved by the relevant authorities;

			<ul style="list-style-type: none"> » The contractor must ensure that open fires on the site for heating, smoking or cooking are not allowed except in designated areas. » Contractor must provide adequate firefighting equipment on site and provide firefighting training to selected construction staff. » A comprehensive employee induction programme would cover land access protocols, fire management and road safety. This must be addressed in the construction EMP as the best practice. » Cognisance be taken of building lines applicable in terms of Act 21 of 1940, and the road authority being approached for approval where required. » Road signs warning of construction vehicle activity at the access being erected on R357 for the construction phase.
	<p>Indirect impacts:</p> <ul style="list-style-type: none"> » Nuisance impacts in terms of a temporary increase in noise, dust and wear and tear of roads » Economic multiplier effects (positive) » Decrease in safety hazards (positive) » Increased benefits for road users (positive) 	<p>High (positive) Low (negative)</p>	<ul style="list-style-type: none"> » It is recommended that a local procurement policy be adopted by the developer to maximise the benefit to the local economy. » Good and services be sourced from the local area as much as possible; engage with local authorities and business organisations to investigate the possibility of procurement of construction materials, goods and products from local suppliers, where feasible. » Efforts need to be employed to enhance indirect local entrepreneurship opportunities by supporting local entrepreneurs as far as possible. » Dust suppression measures must be implemented for heavy vehicles.

			<ul style="list-style-type: none"> » All vehicles must be road-worthy and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits. » Communication, complaints and grievance channels must be implemented and contact details provided to all impacted and adjacent landowners in the study area.
	<p>Cumulative impacts:</p> <ul style="list-style-type: none"> » Opportunity for local employment opportunities. » Opportunity for local capital expenditure, potential for the local service sector. » Opportunity for local entrepreneurs to develop their businesses. » Possible increase in crime levels (with influx of people) with subsequent possible economic losses. » Increase in traffic disruptions, increased heavy vehicle traffic and safety risks/hazards for road users. 	<p>Low</p>	<ul style="list-style-type: none"> » Goods and services should be sourced from the local area as much as possible; engage with local authorities and business organisations to investigate the possibility of procurement of construction materials, goods and products from local suppliers, where feasible. » Dust suppression measures must be implemented for heavy vehicles.

1.3 The No-Go Option

The no-go alternative is the option of not realigning the section of the MN73 which traverses Portion 4 of the Farm Scuitklip 92 and the authorised Paulputs CSP Facility development footprint.

The current land use of Portion 4 of the Farm Scuitklip 92 includes:

- » Existing KaXu Solar One CSP Facility situated within the southern section of the farm portion (Zoned: Special Solar use);
- » Existing Xina Solar One CSP Facility situated within the southern section of the farm portion (Zoned: Special Solar use);
- » The Paulputs-Scuitdrift 1 132kV and Paulputs-Kaxu Solar 1 132kV power lines traverse the centre of the farm portion (registered Eskom servitude);
- » Paulputs Substation is situated near to the western boundary within Portion 4 of the Farm Scuitklip 92 (Zoned: Light Industrial use);
- » Existing MN73 provincial road traversing the farm portion from south west to north east (within a registered road reserve);
- » Authorised Paulputs CSP Facility situated within the northern section of the farm portion (to be rezoned to Special Solar use).

The remaining extent of the northern section of Portion 4 of the Farm Scuitklip 92 is currently zoned for Agricultural use and will be rezoned to Special Solar use to accommodate the authorised Paulputs CSP Facility. As the road is directly adjacent to the development footprint (i.e. to follow the outside of the heliostat field) of the Paulputs CSP Facility, the remaining section to be rezoned to Special Solar use will include the area where the road realignment is planned.

There is no cultivated agricultural land or any other commercial agricultural activities within the farm portion. Therefore, the no-go alternative is the option of not realigning the section of the MN73 within a farm portion which has already been disturbed by numerous other infrastructure and which will be zoned to Special: Solar Use. The current land uses do not preclude the planned road realignment, predominantly as this is a 4km realignment of an existing road, and not a greenfields development. The need and rationale for the road realignment is to ensure road safety for road users within an area which has become a node for solar energy facilities. The negative impacts of the no-go alternative (that is road user safety on a provincial road relating to line of sight, glint and glare, driver distraction; 4km realignment) are considered to outweigh the positive impact (that is, maintaining the current alignment of the existing road) of this alternative. The no-go option is therefore not preferred. The no-go option is assessed in Appendix F of the Basic Assessment Report.

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.982 must be included as **Appendix F**.

2. 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.

If the recommended mitigation measures listed in Section E below and those contained in the EMPr (refer to **Appendix G**) are applied, the significance of the majority of the impacts will be low with no lasting significant negative environmental impacts arising from the realignment of a section of the MN73 road (construction phase) and/or the operation/maintenance phase.

Road realignment corridor alternative

This section provides a summary of the environmental assessment and conclusions drawn for the proposed Project. This section of the BAR draws on the information gathered as part of the Basic Assessment process and the knowledge gained by the environmental consultant during the course of the process and presents an informed opinion of the environmental impacts associated with the 40m corridor proposed for the section of the MN73 to be realigned. The following conclusions can be drawn from the Environmental Assessment Practitioner's (EAP's) findings and the specialist studies undertaken within this Basic Assessment.

Ecology: Short term impacts (vegetation clearing, dust and vibration and noise) are likely to have a short term increase in negative impacts. The longer term impacts are however likely to be negligible in comparison with the current ecological status quo, as these impacts already exist due to the existing road and its associated impacts. Overall the ecological impact is therefore likely to be of **low significance** and, from an ecological point of view, no fatal flaws are associated with the road realignment within the identified corridor. All impacts that may occur project can be mitigated to an acceptable level.

Drainage Systems: The impact on the hydrological nature of the area will be localised, as a large portion of the remaining farm and the downstream catchment would remain intact. Only one ephemeral drainage line occur within the proposed 40m assessment corridor. This system was highly fragmented by the roads and farming practices in the past while the adjacent projects have now disrupted any flows within these systems.

The significance of this impact at the time of assessing the adjacent projects was **low**, due to the impacts and high degree of fragmentation coupled to the general lack of any important/visible aquatic habitat (Scherman Colloty and Associates, 2016)⁷. No fatal flaws are associated with the road realignment within the identified corridor. All impacts that may to occur project can be mitigated to an acceptable level.

Heritage: The destructive impacts that are possible in terms of heritage resources would tend to be direct, once-off events occurring during the initial construction period. From a heritage perspective, the construction of the proposed road realignment are considered acceptable. The impact on heritage resources is therefore likely to be of **low significance** and no fatal flaws are associated with the road realignment within the identified corridor. All impacts that may to occur project can be mitigated to an acceptable level.

Social Impacts: Social impacts are expected during all phases of the development and are expected to be both positive and negative. Positive impacts are expected to be of **low - medium significance**. Negative impacts associated with the road realignment are expected to be of **low significance**. Impacts can be minimised or enhanced through the implementation of the recommended management measures. From a social perspective, the construction of the proposed road realignment is considered acceptable. No fatal flaws are associated with the road realignment within the identified corridor. All impacts that may to occur project can be mitigated to an acceptable level.

Cumulative Impacts: Cumulative impacts from the proposed road realignment will result from impacts arising from multiple renewable energy facilities (including the construction of access roads) being constructed in the area. Considering the nature and extent of the planned infrastructure, the contribution of this infrastructure to the cumulative impacts in the area are considered to be **low and acceptable**.

Overall conclusion

From the specialist studies undertaken, the route and 40m corridor proposed for the road realignment is considered to be acceptable from an environmental perspective.

Based on the findings of the studies undertaken, in terms of environmental constraints and opportunities identified through the Environmental Basic Assessment process, no environmental fatal flaws were identified to be associated with the construction of the realigned section of the MN73 road. Impacts are expected to be **low** after the implementation of appropriate mitigation and it is recommended that the proposed

⁷ Scherman Colloty and Associates. 2012. Water Resources Assessment: Paulputs Concentrated Solar Plant, Northern Cape Province.

road realignment be implemented to enhance road user safety. Considering the information available at this planning stage in the project cycle, the confidence in the environmental assessment undertaken is regarded as acceptable.

It is the conclusion of the Environmental Assessment Practitioner that the realignment of the section of the MN73 is considered acceptable from an environmental perspective and should be authorised, with the implementation of the recommended mitigation measures.

No-go alternative (compulsory)

This is the option of not realigning the section of the MN73 which traverses Portion 4 of the Farm Scuitklip 92 and the authorised Paulputs CSP facility development footprint.

The current land use of Portion 4 of the Farm Scuitklip 92 includes two CSP facilities; KaXu Solar One and Xina Solar One which situated within the southern section of the farm portion. The Paulputs-Scuitdrift 1 132kV and Paulputs-Kaxu Solar 1 132kV power lines traverse the centre of the farm portion and the existing Paulputs Substation is situated near to the western boundary within Portion 4 of the Farm Scuitklip 92.

The farm portion is also traversed by the existing MN73 provincial road traversing from south west to north east. The remaining extent of the northern section of Portion 4 of the Farm Scuitklip 92 is currently zoned for Agricultural use and will be rezoned to Special Solar use to accommodate the authorised Paulputs CSP Facility which will include the section of the road to be realigned.

There is no cultivated agricultural land or any other commercial agricultural activities within the farm portion. Therefore, the no-go alternative is the option of not realigning the section of the MN73 within a farm portion which has already been disturbed by numerous other infrastructure and which will be zoned to Special: Solar Use. The current land uses do not preclude the planned road realignment and the need and rationale for the road realignment is to ensure road safety for road users within an area which has become a node for solar energy facilities.

The 'Do nothing' alternative is not the preferred option for the project as the negative impacts are considered to outweigh the positive impact (that is, maintaining the current alignment of the existing road) of this alternative. **The 'Do nothing' alternative is, therefore, not a preferred alternative.**

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.

The construction of the proposed section of the MN73 to be realigned should be implemented according to the conclusions and recommendations of this report and the specifications of the EMPr to adequately mitigate and manage potential impacts associated with construction and operation activities all of which are considered to be of **medium - low significance**. The construction and operation activities and relevant rehabilitation of disturbed areas should be monitored against the approved EMPr, the Environmental Authorisation (once issued) and all other relevant environmental legislation. Relevant conditions to be adhered to include:

Construction Phase:

- » All relevant practical and reasonable mitigation measures detailed within this report and within the EMPr must be implemented.
- » An independent Environmental Control Officer (ECO) should be appointed to monitor compliance with the specifications of the EMPr for the duration of the construction period.
- » The proponent should obtain all necessary permits prior to the commencement of construction.
- » Erosion control measures to be implemented before and during the construction period, including the stormwater control measures. Design and construct roads to avoid concentration of flow along and off the road surface. Design outlet culvert structures to dissipate flow energy, especially where ephemeral wash has been identified.
- » Identification and relocation of plant species (*Hoodia gordonii*) prior to ground clearing. Marking of protected tree species (*Boscia foetida*) to be conserved.

Operation Phase/Maintenance:

» A mitigation and monitoring plan should be put in place to monitor exotic and invasive species in order to report on progress and advice management of measure that need to be implemented. This monitoring should be conducted bi-annually.	
» A mitigation and monitoring plan should be put in place to monitor erosion of the road pavement and demarcated road reserve in order to advise maintenance or management measures that need to be implemented. This monitoring should be conducted bi-annually.	
Is an EMPr attached?	YES

The EMPr must be attached as **Appendix G**.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as **Appendix H**.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in **Appendix I**.

Any other information relevant to this application and not previously included must be attached in **Appendix J**.

KAREN JODAS

NAME OF EAP

SIGNATURE OF EAP

DATE

SECTION F: APPENDICES

The following appendices are attached:

Appendix A: A3 Maps

- » *Appendix A1: A3 Locality Map*
- » *Appendix A2: Layout Map*
- » *Appendix A3: A3 Sensitivity Map*
- » *Appendix A4: A3 CBA Map*

Appendix B: Site Photographs

Appendix C: Facility Illustration(s)

Appendix D: Specialist(s)

- » *Appendix D1: Ecology Report*
- » *Appendix D2: Traffic Report*
- » *Appendix D3: Heritage Report*
- » *Appendix D4: Social Report*

Appendix E: Public Participation

- » *Appendix E1: Advert and Site Notices*
- » *Appendix E2: Stakeholder Correspondence*
- » *Appendix E3: Comment and Responses Report*
- » *Appendix E4: Notification to Authorities*
- » *Appendix E5: I&APs Database*
- » *Appendix E6: Comments Received*
- » *Appendix E7: Meeting Minutes*

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: EAP Declaration and CVs

Appendix I: Specialist Declarations

Appendix J: Additional Information

- » *Appendix J1: Social Report External Review*
- » *Appendix J2: Road Realignment Coordinates*
- » *Appendix J3: Palaeontological Letter and Report*

**ENVIRONMENTAL IMPACT ASSESSMENT PROCESS
FINAL BASIC ASSESSMENT REPORT**

**REALIGNMENT OF A SECTION OF THE MN73 TO
ACCOMMODATE SOLAR ENERGY FACILITIES
NEAR PAULPUTS SUBSTATION, NORTHERN
CAPE PROVINCE**

DENC REF.: NC/BA/06/NAM/KHA/PAU1/2017

**FINAL BASIC ASSESSMENT REPORT
FOR SUBMISSION TO DENC**

APRIL 2017

Prepared for:

The Northern Cape Department of Roads and Public Works
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File Reference Number:	
Application Number:	
Date Received:	

Basic Assessment Report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

- This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
- This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
- The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
- Where applicable **tick** the boxes that are applicable in the report.
- An incomplete report may be returned to the applicant for revision.
- The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
- This report must be handed in at offices of the relevant competent authority as determined by each authority.
- No faxed or e-mailed reports will be accepted.
- The signature of the EAP on the report must be an original signature.
- The report must be compiled by an independent environmental assessment practitioner.
- Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
- A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
- Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

PROJECT DETAILS

- Title** : Environmental Assessment Process
Final Basic Assessment Report for the Realignment of
a section of the MN73 to accommodate Solar Energy
Facilities near Paulputs Substation, Northern Cape.
- Authors** : Savannah Environmental
Thalita Botha
Karen Jodas
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Heritage – David Morris, McGregor Museum
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Traffic - Stephen Fautley, TECHSO Western Cape
Social - Pamela Sidambe, Savannah Environmental
(with external review by Neville Bews)
- Applicant** : Northern Cape Department of Roads and Public Works
- Client** : Abengoa Solar South Africa (Pty) Ltd
- Report Status** : Basic Assessment Report for submission to DENC
- DENC Ref No** : NC/BA/06/NAM/KHA/PAU1/2017
- Submission Date** : April 2017

When used as a reference this report should be cited as: Savannah Environmental (2017)
Final Basic Assessment Report: Realignment of a section of the MN73 to accommodate Solar Energy
Facilities near Paulputs Substation, Northern Cape.

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- » *Appendix D4: Social Report*

Appendix E: Public Participation

- » *Appendix E1: Advert and Site Notices*
- » *Appendix E2: Stakeholder Correspondence*
- » *Appendix E3: Comment and Responses Report*
- » *Appendix E4: Notification to Authorities*
- » *Appendix E5: I&APs Database*
- » *Appendix E6: Comments Received*
- » *Appendix E7: Meeting Minutes*

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: EAP Declaration and CVs

Appendix I: Specialist Declarations

Appendix J: Additional Information

- » *Appendix J1: Social Report External Review*
- » *Appendix J2: Road Realignment Coordinates*
- » *Appendix J3: Palaeontological Letter and Report*

SUMMARY AND OVERVIEW OF THE PROJECT

The area immediately surrounding the Paulputs Substation (located approximately 45km north-east of Pofadder), and specifically Portion 4 of the Farm Scuitklip 92 has become a node for solar energy facility developments. Two Concentrated Solar Power (CSP) facilities and one photovoltaic (PV) facility have already been constructed in this area. These are known as the Kaxu Solar One, Xina Solar One and Konkoonsies I PV plants respectively. Another PV facility (known as Konkoonsies II PV) is to be constructed during 2017, and a third CSP facility (known as the Paulputs CSP project) received an environmental authorisation on 16 November 2016.

The development of the solar energy facilities are in response to the requirement for additional electricity generation capacity at a national level and in response to identified objectives of the national, provincial, local and district municipalities to develop renewable energy facilities. In order to facilitate the construction of the Paulputs CSP Facility, the Northern Cape Department of Roads and Public Works (NC DR&PW) propose that a section of the MN73 road traversing Portion 4 of the Farm Scuitklip 92 is realigned (refer to **Figure 1.1** and **Table 1.1**).

The MN73 realignment is proposed in order to accommodate the Paulputs CSP Facility while ensuring safe road use for the surrounding landowners currently utilising the MN73. The realignment of the road will entail:

- » the construction of a new section of road ~4km in length and ~7m wide (with a road reserve of 20m) according to approved Northern Cape Department of Roads and Public Works (NC DR&PW) plans and standards; and
- » the decommissioning of ~3km of the existing MN73 road as and where required after commissioning the realigned section. Portions of the decommissioned section of the MN73 road will not be rehabilitated where these are used to provide internal access for the Paulputs CSP Facility.

The Northern Cape Department of Roads and Public Works (NC DR&PW) will be responsible for operation and maintenance of the road.

The nature and extent of the MN73 realignment, as well as potential environmental impacts associated with the construction and operation phases are explored in more detail in this Basic Assessment report (hereafter referred to as the BA report). No alternative routes were assessed due to environmental and technical constraints identified during this BA process. A 40m wide corridor was assessed for the proposed realignment. The final placement of the road realignment within a 40m corridor will depend on local geotechnical, topographical conditions and allow for the avoidance of local environmental sensitivities.

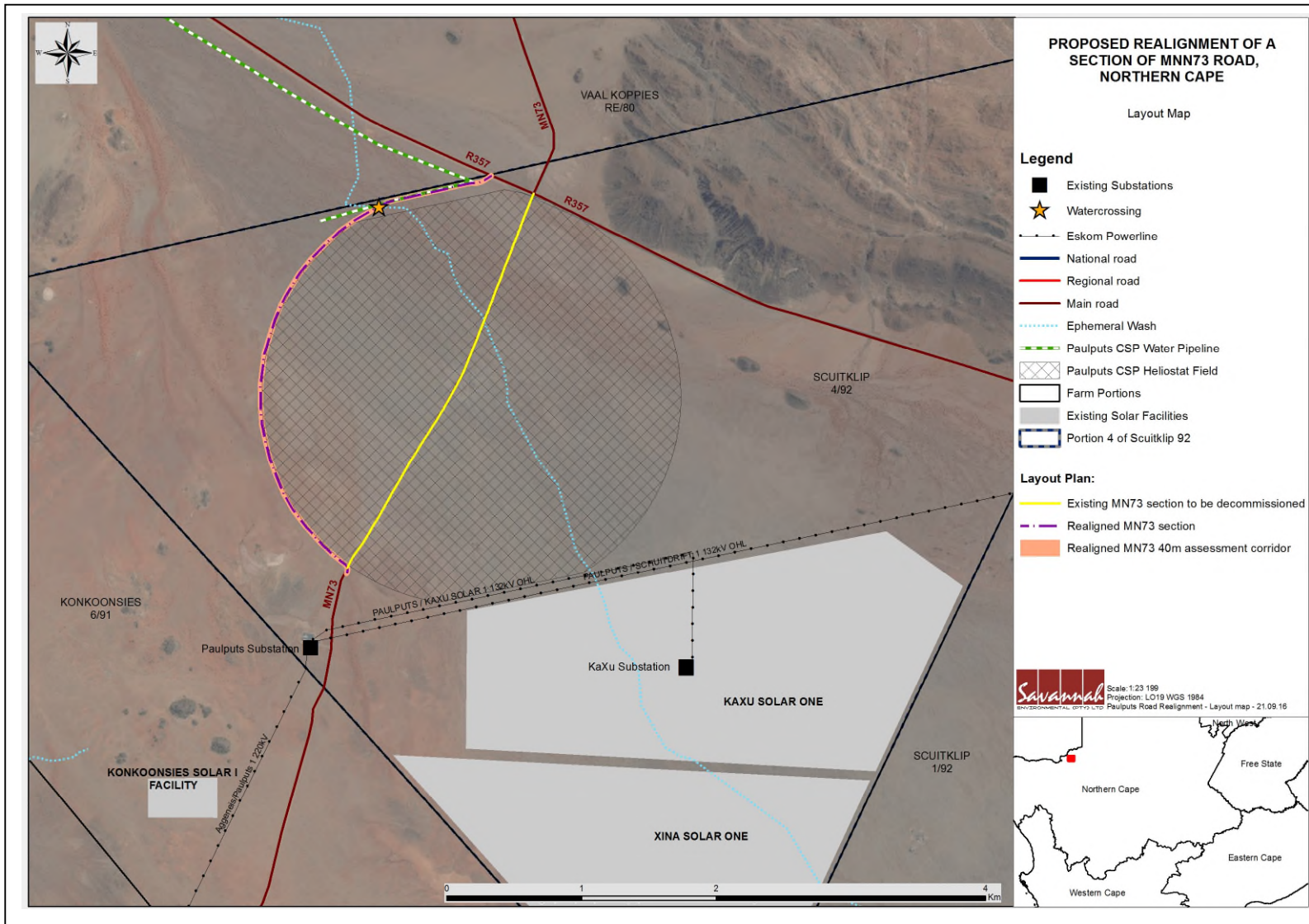


Figure 1: Layout Map indicating the proposed location and layout of the project. Refer to Appendix A for A3 map.

1.1. NEED AND DESIRABILITY FOR THE ROAD REALIGNMENT

The need and justification for the proposed road section realignment is linked to the solar energy node which is developing in the area surrounding the Paulputs Substation, and specifically with the authorised Paulputs CSP Facility. Abengoa Solar Power South Africa (Pty) Ltd has received environmental authorisation for the development of the Concentrated Solar Power (CSP) Project located on Portion 4 of the Farm Scuitklip 92 on 16 November 2016. It is the intention of Abengoa Solar Power South Africa (Pty) Ltd to bid the authorised Paulputs CSP Facility (Department of Environmental Affairs Ref: 14/12/16/3/3/2/870) in the Department of Energy's Renewable Energy Independent Power Producer Procurement (REIPPP) Programme. The MN73 road which currently traverses the development footprint of the authorised CSP Facility is required to be realigned outside of the planned and authorised development footprint to ensure road user safety.

The electricity demand in South Africa is placing increasing pressure on the country's existing power generation capacity and the resultant restrictions are severely damaging the economy. There is, therefore, a need for additional electricity generation options to be developed throughout the country. The purpose of the Paulputs CSP Facility is to add new capacity for generation of renewable energy to the national electricity mix and to aid in achieving the goal of a 43% share of all new power generation being derived from independent power producers (IPPs), as targeted by the Department of Energy (DoE). The sale, development, installation, maintenance and management of renewable energy facilities also have significant potential for job creation in South Africa.

From an overall environmental sensitivity and planning perspective, the proposed road realignment supports the broader strategic context of the municipality as it is linked to a renewable energy facility which is considered a driver for economic growth in the region as per the Namaqua District Municipality's Integrated Development Plan. It is also in line with broader societal needs and public interest as it is linked to the Paulputs CSP Facility, for which there is national policy and support. The section of the MN73 to be decommissioned is mostly used by a small number of local landowners travelling from Pofadder to their farms close to the Orange River. There will be no disruption to the use of the road as the section of the MN73 will only be decommissioned after the realignment has been fully commissioned. The section of the MN73 to be realigned is minor in extent and the length of the MN73 will increase by an additional 1km only. No exceedance of social, ecological or heritage impacts will result from the realignment of the section of the road, and no significant disturbance of biological diversity is anticipated, as detailed in this Basic Assessment Report.

1.2. REQUIREMENTS FOR A BASIC ASSESSMENT PROCESS

In terms of the Environmental Impact Assessment (EIA) Regulations of December 2014, published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), the applicant requires authorisation for the construction of the realigned section of the MN73. In terms of Sections 24 and 24D of NEMA (No 107 of 1998), as read with the EIA Regulations of GN R982, R983 and R985, a Basic Assessment process is required to be undertaken in support of the application for authorisation.

In terms of Section 24(1) of NEMA, the potential impact on the environment associated with these activities must be considered, investigated, assessed and reported on to the competent authority that has been charged by NEMA with the responsibility of granting Environmental Authorisations. As the Project is located in the Northern Cape, the competent authority is the Northern Cape Department of Environment and Nature Conservation (DENC).

The nature and extent of the proposed project is explored in more detail in this Basic Assessment Report. This report has been compiled in accordance with the requirements of the EIA Regulations of December 2014 (as per **Table A** below), and includes details of the activity description; the site, area and property description; the public participation process; the impact assessment; and the recommendations of the Environmental Assessment Practitioner (EAP).

TABLE A: Legal Requirements of the EIA Regulations

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1	CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
(1) A basic assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include— (a) details of— (i) the EAP who prepared the report; and	Section 1.3
(ii) the expertise of the EAP, including a curriculum vitae;	Section 1.3 Appendix H
(b) the location of the activity, including: (i) the 21 digit Surveyor General code of each cadastral land parcel;	Section A(1)
(ii) where available, the physical address and farm name;	Section B
(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section A(2) (a)
(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale;	Appendix A(1) and A(2) Appendix C
or, if it is— (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or	Appendix J1 Please note that the coordinates provided are approximately

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1	CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
<p>on land where the property has not been defined, the coordinates within which the activity is to be undertaken;</p>	<p>following the centreline of the corridor. These are not fixed and would be defined following the final micro-siting of the road alignment. A corridor of 40m is currently applied for to allow for micro-siting of the 7m wide road and road reserve of 20m.</p>
<p>(d) a description of the scope of the proposed activity, including— (i) all listed and specified activities triggered and being applied for; and (ii) a description of the activities to be undertaken including associated structures and infrastructure ;</p>	<p>Section A(1) a, b</p>
<p>(e) a description of the policy and legislative context within which the development is proposed including— (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and</p>	<p>Section A(11)</p>
<p>(ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;</p>	<p>Section A(11)</p>
<p>(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;</p>	<p>Section 1.1</p>
<p>(g) a motivation for the preferred site, activity and technology alternative;</p>	<p>Section 1.1 Section A(2)</p>
<p>(h) a full description of the process followed to reach the proposed preferred alternative within the site, including: (i) details of all the alternatives considered; (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;</p>	<p>Section 2 Section C Appendix E</p>
<p>(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</p>	<p>Section B Section D</p>
<p>(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts— (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;</p>	<p>Section D Appendix F</p>
<p>(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;</p>	<p>Appendix F</p>

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1	CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Appendix F Section D
(viii) the possible mitigation measures that could be applied and level of residual risk;	Appendix F Section D
(ix) the outcome of the site selection matrix;	N/A. <i>The purpose of the proposed Project is to accommodate the development footprint of the authorised Paulputs CSP Facility, and ensure road-user safety.</i>
(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and	Section A(2)
(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;	Section D(2)
(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including— (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and	Appendix F Appendix D
(ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	Appendix F Appendix D
(j) an assessment of each identified potentially significant impact and risk, including— (i) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impact and risk; (iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated;	Appendix F Appendix D
(k) where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;	Section D(2)
(l) an environmental impact statement which contains— (i) a summary of the key findings of the environmental impact assessment; (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and	Section D(2) Appendix A(3)

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1	CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
(iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	
(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr;	Section D(2)
(n) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	Section E
(o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section 1.4
(p) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	Section D
(q) where the proposed activity does not include Operation aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	N/A. <i>The project includes Operation aspects.</i>
(r) an undertaking under oath or affirmation by the EAP in relation to: (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and	Appendix H
(s) where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A.
(t) any specific information that may be required by the competent authority; and	N/A
(u) any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A

1.3. DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER AND EXPERTISE TO CONDUCT THE BASIC ASSESSMENT

The Northern Cape Department of Roads and Public Works has appointed Savannah Environmental as the independent environmental consultant to undertake the required Basic Assessment process and to identify and assess all the potential environmental impacts associated with the proposed project and propose appropriate mitigation and management measures in an Environmental Management Programme (EMPr). As part of these environmental studies, Interested & Affected Parties (I&APs) have been actively

involved through the public involvement process. Neither Savannah Environmental nor any of the specialist sub-consultants on this project are subsidiaries of or are affiliated to the Applicant. In addition, Savannah Environmental does not have any interest in secondary developments that may arise out of the authorisation of the proposed project.

Savannah Environmental is a specialist environmental consulting company providing holistic environmental management services, including environmental impact assessment and planning to ensure compliance and evaluate the risk of development and the development and implementation of environmental management tools. The Savannah Environmental team has considerable experience in environmental impact assessments and environmental management, and have been actively involved in undertaking environmental studies for a wide variety of projects throughout South Africa, and specifically in the Northern Cape.

The EAPs and Public Participation consultants from Savannah Environmental who are responsible for this project are:

- » *Thalita Botha*, the principle author of this report holds a BSc degree with Honours in Environmental Management and has one year of experience in environmental consulting. Her key focus is on environmental impact assessments, public participation, mapping (using ArcGIS), environmental management plans and programmes.
- » *Gabriele Wood*, holds an Honours Degree in Anthropology, obtained from the University of Johannesburg. She has 9 years of consulting experience in public participation and social research. Her experience includes the design and implementation of public participation programmes and stakeholder management strategies for numerous integrated development planning and infrastructure projects. Her work focuses on managing the public participation component of Environmental Impact Assessments and Basic Assessments undertaken by Savannah Environmental.
- » *Karen Jodas* is a registered Professional Natural Scientist and holds a Master of Science degree and has more than 20 years of experience consulting in the environmental field. Her key focus is on strategic environmental assessment and advice; management and co-ordination of environmental projects, which includes integration of environmental studies and environmental processes into larger engineering-based projects and ensuring compliance to legislation and guidelines; compliance reporting; the identification of environmental management solutions and mitigation/risk minimising measures; and strategy and guideline development. She is familiar with the local environment and specifically Portion 4 of the Farm Scuitklip 92, due to her prior involvement in the impact assessments undertaken for the CSP projects located on this farm.

In order to adequately identify and assess potential environmental impacts associated with the proposed project, Savannah Environmental has included specialist consultants to

conduct specialist assessments where required. The specialist consultants who assessed the Paulputs CSP Facility were also appointed to consider the MN73 road realignment (and in some instances the specialist assessments considered the impacts of both projects through a single assessment). The specialist consultants include:

- » Ecology (Flora and Fauna) – Adrian Hudson, Hudson Ecology
- » Heritage – David Morris, McGregor Museum Department of Archaeology
- » Traffic - Stephen Fautley, TECHSO Western Cape
- » Social - Pamela Sidambe, Savannah Environmental social specialist and Neville Bews and Associates

Curricula vitae for the Savannah Environmental project team and specialist consultants are included in **Appendix H**.

Where relevant, reports, information and data from studies which supported other applications for environmental authorisations on Portion 4 of the Farm Scuitklip 92 have informed and been used in the compilation of this assessment. These reports have been referenced in, and where relevant, appended to this BAR.

1.4. ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations are applicable to the studies undertaken within this Basic Assessment Process:

- » All information provided by the Applicant to the environmental team was correct and valid at the time it was provided.
- » It is assumed that the identified 40m corridor represents a technically acceptable solution for the road realignment (taking into account that optimisation of the route might be required based on geotechnical investigations).
- » Studies assume that any potential impacts on the environment associated with the proposed development will be avoided or mitigated accordingly, based on the findings of this Basic Assessment Report and the associated Specialist Studies.
- » This report and its investigations are project-specific, and consequently the environmental team did not evaluate any other alternatives.

Refer to the specialist studies in **Appendices D1 – D4** for specific limitations.

COMMENT ON THE BASIC ASSESSMENT REPORT

As required in terms of the EIA Regulations, 2014, the Basic Assessment report was made available for a 30-day review period from **25 January 2017** to **24 February 2017**. The report was available for public review at the following locations:

- » Pofadder Public Library
- » www.savannahsa.com

Comments received during this 30-day review period and throughout the process have been included within this Final Basic Assessment Report.

Savannah Environmental has compiled a table (refer to Table 1 below) which outlines the DENC requirements as stated in the comments on the BAR dated 30 March 2017, and where the requirements have been addressed within this Final BAR for ease of reference.

Table 1: Comments received by DENC during the public review of the Basic Assessment

No.	DENC Comment	Response and cross reference in this BA Report
a)	The closest memorial site is 370m but buffer to be 10m, no memorial sites within the 40m corridor.	It is confirmed that there are no memorial sites located within the 40m corridor.
b)	Is the Memorial site below Ysterberg excluded from the development footprint?	Yes, all memorial sites are excluded from the road realignment's development footprint. Ysterberg is located approximately 1km to the east of the planned realignment route.
c)	Will the species that utilise the route as a migration route not be affected by the activity?	The migration route is part of a large system of migration routes. The percentage of these migration routes that will be impacted on by the realigned portion of the MN73 will be negligible, and therefore the road realignment will have very little effect on terrestrial species utilising the migration route.
d)	How much of natural vegetation clearance will occur on site?	The section of the MN73 to be realigned, including the road reserve, will require approximately 8ha of vegetation clearance within the project site (Portion 4 of the Farm Scuitklip 92), which is approximately 3518ha in extent.
e)	What protected plant species are onsite and what legislation protects them?	One protected plant species has been recorded within the alignment corridor and include <i>Boscia foetida</i> . <i>Hoodia gordonii</i> was

No.	DENC Comment	Response and cross reference in this BA Report
		<p>recorded within the project site but not within the realignment corridor. However, this is not a large conspicuous species and the likelihood that isolated species or colonies occurring in the realignment corridor can be high. <i>Aloe dichotoma</i> were only recorded within the eastern section of Portion 4 of the Farm Scuitklip 92. All individuals of the <i>Aloe dichotoma</i> species were recorded outside of the footprint of the MN73 realignment corridor and can therefore be avoided, and not affected by the development. <i>Acacia erioloba</i>, also a protected tree species, has a high probability of occurring in the study area while the Near Threatened species, <i>Conophytum limpidum</i>, is found on inselbergs in Bushmanland in vertical crevices in rocks, generally preferring shaded situations. If this species occurs in the study area, it is most likely to be found on the hills or rocky areas which is avoided by the road realignment.</p> <p>All of these species are protected in terms of the National Environmental Management: Biodiversity Act (Act No. 10 of 2004) as well as the Northern Cape Nature Conservation Act (Act No. 9 of 2009). Tree species such as <i>Aloe dichotoma</i>, <i>Acacia erioloba</i>, <i>Boscia foetida</i> are also protected by National Forests Act (Act No. 84 of 1998).</p>
f)	Flora and fauna onsite must also be classified in accordance with the NCNCA 9 of 2009 and their status.	The Northern Cape Nature Conservation Act (Act No. 9 of 2009) was used to identify the status of species occurring within the project site. A list of species of concern and the probability of these species occurring within the study area are included in Appendix D1 (refer to section 8).
g)	Comments from DW&S with regards to impacts on the drainage lines.	Comments (dated 3 February 2017) were received from DWS (refer to Appendix E6). The DWS comments do not raise a concern regarding impacts to drainage lines in this area, understanding the nature of the drainage lines in this area. The DWS

No.	DENC Comment	Response and cross reference in this BA Report
		<p>comments do request the applicant to make a Water Use License Application in terms of the National Water Act (Act No. 36 of 1998), and give due consideration to stormwater management where bridge structures are required.</p>
h)	<p>Exclusion of sensitive areas such as rocky outcrops is supported.</p>	<p>It is noted that the Northern Cape Department of Environment, Nature and Conservation supports the exclusion of sensitive areas identified within the project site such as rocky outcrops.</p>
i)	<p>What will be the impact of the activity on the species utilising the migration route?</p>	<p>The impact of the road realignment on species utilising the indicative migration route is considered to be of low significance with the implementation of mitigation measures. This is due to the greatly reduced wildlife naturally occurring in this area as a result of previous and current disturbances which have led to a reduction in species abundance. These disturbances include two existing 100MW CSP trough plants, an Eskom Substation, Eskom transmission and distribution lines, quarrying activities, farming activities, and existing roads (including the MN73). It should be noted that this application includes the realignment of an existing road (MN73) and not the construction of a new road.</p>
j)	<p>The No-Go option is not about you desiring it or a matter of preference but about the status quo of the site, which is something that must be investigated and used as a baseline to assess potential impacts.</p>	<p>The no-go option has been updated and assessed in Appendix F of the Basic Assessment Report. The current land uses do not preclude the planned road realignment, predominantly as this is a 4km realignment of an existing road, and not a greenfields development. The need and rationale for the road realignment is to ensure road safety for road users within an area which has become a node for solar energy facilities.</p>
k)	<p>Where there are no alternatives, the motivation for not having feasible alternatives needs to be very clear.</p>	<p>No alternatives have been considered for the realignment of the MN73 main road. A detailed motivation for why no other feasible alternatives were assessed have been</p>

No.	DENC Comment	Response and cross reference in this BA Report
		included in Section A of the Basic Assessment.
l)	Under App E6, did not see comments from DW&S, a follow up must be done on the issue of drainage lines raised by DW&S as to whether there are certain requirements from their side.	Comments (dated 3 February 2017) were received from DWS (refer to Appendix E6). An ephemeral drainage line (wash) bisects the northern section of the study area from east to west, gradually narrowing towards the east. This system is highly fragmented by existing roads, past land use practices and the adjacent existing facilities have disrupted any flows within this system (Scherman Colloty & Associates, 2016). Therefore, the wash (drainage line) is and considered to be of low ecological significance. The DWS comments do not raise a concern regarding impacts to drainage lines in this area, understanding the nature of the drainage lines in this area. The DWS comments do request the applicant to make a Water Use License Application in terms of the National Water Act (Act No. 36 of 1998), and give due consideration to stormwater management where bridge structures are required.
m)	According to the Vegetation Map of South Africa (2009) the development falls within the Bushmanland Arid Grassland. The Bushmanland Arid Grassland has a conservation target of 21% and only small patches are statutorily conserved in Augrabies Falls National Park and Goegap Nature Reserve. Very little of the area has been transformed. Erosion is very low (60%) and low (33%) (Mucina & Rutherford, 2006).	It is confirmed that the development falls within the Bushmanland Arid Grassland. The details of the vegetation type have been considered in the Ecological Impact Assessment Report (Appendix D1).
n)	The farm Scuitklip falls within an area earmarked by the Northern Cape Biodiversity Sector Plan (NBS) as a Critical Biodiversity Area (CBA). The proposed development is positioned in the landscape at a point where it falls within an area determined by the NBS as an Ecological Support Area (ESA). The latter are defined as "areas meeting ecological process targets or achieving biodiversity persistence objectives". This	The project site falls within an Ecological Support Area (ESA) which is defined as "areas that are not essential for meeting biodiversity representation targets/thresholds but which nevertheless play an important role in supporting the ecological functioning of critical biodiversity areas and / or in delivering ecosystem services that support socio-economic development, such as water provision, food

No.	DENC Comment	Response and cross reference in this BA Report
	<p>specific ESA is a Terrestrial Mitigation Corridor. The Scuitklip also border an Important Bird Area (IBA) and the entire area are located within the Gariiep Centre of Endemism.</p>	<p>mitigation or carbon sequestration” and “the degree of restriction on land use and resource use in these areas may be lower than that recommended for critical biodiversity areas”. Although the project site falls within an ESA, the realignment should have very little effect on species utilising the migration route it must be noted that the migration route indicated is part of a large system of migration routes and that the percentage of these migration routes that will be impacted on will be negligible. This is supported by the findings of the ecologist following detailed field work in both the wet and dry season.</p>
o)	<p>The ecological report outlined habitats that are suitable for the occurrence of certain flora species, listed under IUCN red data list as well as other legal frameworks e.g. Northern Cape Nature Conservation Act No. 109 of 2009. One of the vulnerable species, <i>Aloidendron dichotomum</i> (formerly <i>Aloe dichotoma</i> var. <i>dichotoma</i>) was recorded on Portion 4 of the Farm Scuitklip 92. If the <i>Aloidendron dichotomum</i> species are found within the development footprint, the road should be aligned in a way not to disturb the <i>A. dichotomum</i> spp., hence, colonies of <i>A. dichotomum</i> species should be regarded as a no-go area.</p>	<p><i>Aloidendron dichotomum</i> species was recorded in the eastern section of Portion 4 of the Farm Scuitklip 92. No individuals of this species were recorded inside of the footprint of the corridor for the MN73 realignment and will therefore not be affected by the development.</p>
p)	<p>Disturbance to indigenous plants should be kept to a minimum as far as possible. Re-planting in the wild must cause as little disturbance as possible to the existing natural ecosystems. The substantial amount of <i>Boschia</i> spp. Destroyed/cut/damaged in the development footprint is of great concern. A species conservation assessment will be required during permit application for <i>Boschia</i> spp.</p>	<p>Disturbance to indigenous plants will be kept to a minimum as far as possible. The requirements of DENC will be observed and provided during the permit application for and <i>Boschia</i> species</p>
q)	<p>Rocky ridges, quartzite patches and washes should be demarcated as no-go areas; these areas are known to contain specialist plant species.</p>	<p>No quartzite patches have been identified within the project site. All rocky ridges located within the project site / Portion 4 of the Farm Scuitklip 92 are considered to be</p>

No.	DENC Comment	Response and cross reference in this BA Report
		no-go areas and are avoided by the footprint of the road realignment. An ephemeral drainage line (wash) bisects the northern section of the study area from east to west, gradually narrowing towards the east. It has been confirmed by the ecologist that this system is highly fragmented and considered to be of low ecological significance.
r)	Protected trees with significant biodiversity features such as sociable weaver nests, nest for raptors such as Jackal buzzard, etc. should only be disturbed after consultation with the DENC. Fauna permits should be applied for if any faunal species are to be removed, this includes bird nests, snakes, ground squirrels, etc.	No protected trees with sociable weaver nests, nest for raptors (i.e. Jackal buzzard) will be disturbed without consultation with the DENC. Permits will be applied for should any faunal species be required to be removed from the development footprint.
s)	The most important aspects to consider in removing topsoil are the depth of soil to remove and the conditions of storing topsoil. Studies on topsoil storage in Namaqualand suggested that the top 5cm of the soil contains 90% of the seed bank (de Villiers et al., 1994; de Villiers, 2000). According to (Strohmayr, 1999; Schmidt, 2002), "topsoil should be stored at less than 1m deep for less than 1 month". As a recommendation, the topsoil should be treated with optimal care as it is vital for rehabilitation.	As topsoil is vital for rehabilitation, mitigation measures for the disturbance of topsoil have been included in Objective 6 of the EMP (refer to Appendix G).
t)	Another effect of roads is the edge enhancement of plants and herbivores (Lightfoot and Whitford, 1991). Perennial plants along the roadside are often larger than those farther away, and annual plant germination is often greatest along the shoulders of roads. It is possible the increased runoff due to the impervious pavement or compacted soil contributes to this heterogeneity of vegetation in relationship to the road. Although this situation suggests potentially beneficial impacts for herbivorous species, such as tortoises, hares, small antelopes and reptiles, it increases their chance of being	The chance of herbivorous species being killed by vehicle strikes are greatly reduced at the project site compared to other sites due to the very low rainfall resulting in far less growth on the road reserve and the low abundance of animals in the area. It should be noted that this project includes the realignment of an existing road which endures the same impacts. Mitigations measures to reduce the risk of collision with vehicles have been included in Appendix D1 which includes the enforcement of a speed limit.

No.	DENC Comment	Response and cross reference in this BA Report
	killed by vehicle strikes, as was shown by von Seckerdorf Hoff and Marlow (2002).	
u)	Monitoring programmes specified in the EMP must be implemented. It is vital that a clear monitoring and reporting protocol is put in place. The EMP must address issues such as killings, dust suppression techniques, noise control, storage, and disposal of general waste as well as how provision of ablution and other facilities will be dealt with during construction.	All monitoring programmes included within the EMP are required to be adhered to and updated, as relevant, throughout the project life cycle.
v)	Water is a scarce resource within the Northern Cape Province and can therefore not be wasted. It is very important that the proponent take this into account. The proponent is thus advised to put sustainable measures of water use in place for dust suppression during the construction phase.	Considering water scarcity in the Northern Cape Province, sustainable dust suppression measures will be in place prior to the construction phase of the development.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section? **NO**

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. ACTIVITY DESCRIPTION

a) Describe the project associated with the listed activities applied for

The area immediately surrounding the Paulputs Substation (located approximately 45km north-east of Pofadder), and specifically Portion 4 of the Farm Scuitklip 92 has become a node for solar energy facility development. Two Concentrated Solar Power (CSP) facilities and one photovoltaic (PV) facility have already been constructed in this area. These are known as the Kaxu Solar One, Xina Solar One and Konkoonsies I PV plants respectively. Another PV facility (known as Konkoonsies II PV) is to be constructed during 2017, and a third CSP facility (known as the Paulputs CSP project) received an environmental authorisation on 16 November 2016.

The development of the solar energy facilities are in response to the requirement for additional electricity generation capacity at a national level and in response to identified objectives of the national, provincial, local and district municipalities to develop renewable energy facilities. In order to facilitate the construction of the Paulputs CSP Facility, the NC DR&PW propose that a section of the MN73 road traversing Portion 4 of the Farm Scuitklip 92 is realigned (refer to **Figure 1.1** and **Table 1.1**). The construction of the realigned section will be undertaken by Abengoa Solar Power South Africa (Pty) Ltd.

The MN73 road is proposed to be realigned in order to accommodate the Paulputs CSP Facility while ensuring safe road use for the surrounding landowners currently utilising the MN73. The realignment of the road will entail the following:

- » the construction of a new section of road ~4km in length and ~7m wide (with a road reserve of 20m) according to approved Northern Cape Department of Roads and Public Works (NC DR&PW) plans and standards; and
- » the decommissioning of ~3km of the existing MN73 road as and where required after the commissioning of the realigned section. Portions of the decommissioned section of the MN73 road will not be rehabilitated where these are used to provide internal access for the Paulputs CSP Facility.

The Northern Cape Department of Roads and Public Works (NC DR&PW) will be responsible for road operation and maintenance.

The realignment of the road will include the decommissioning of ~3km of the existing MN73 and the construction of a new section of road ~4km in length (approximately 7m in width). The newly constructed section of road will be aligned along the western boundary of the heliostat field of the Paulputs CSP Facility. A 40m wide corridor has been investigated for the siting of the proposed realignment of the MN73 road. No alternatives have been considered for the realignment of the MN73 main road. A detailed motivation for why no other feasible alternatives were assessed have been included in Section A of this Basic Assessment.

The project site is defined as Portion 4 of the Farm Scuitklip 92, which has a total extent of ~3518ha. The 40m wide corridor investigated for the siting of the proposed realignment of the MN73 road is the project development area and is limited to the western portion of the project site (refer to Figure 1).

Table 1.1: Detailed description of the location project site¹.

Province	Northern Cape Province
District Municipality	Namakwa District Municipality
Local Municipality	Khai-Ma Local Municipality
Ward number(s)	1
Nearest town(s)	Onseepkans (~30km north west) and Pofadder (~35km south west)
Farm name(s) and number(s)	Farm Scuitklip 92
Portion number(s)	Portion 4
SG 21 Digit Code (s)	C0360000000009200004
Current Landowner	KaXu CSP South Africa (Pty) Ltd
Current zoning	The site for the proposed project is zoned for Agricultural use. A re-zoning process will be undertaken for the Abengoa Solar Power South Africa (Pty) Ltd project site for the Paulputs CSP Facility, which includes the section of the MN73 road to be realigned.
Current land use and land use activities	The existing Paulputs Substation is located within Portion 4 of the Farm Scuitklip 92. Two CSP facilities, KaXu Solar One and Xina Solar One are located on the southern portion of the project site. The Paulputs CSP Facility has been authorised on the northern portion of the project site, east of the 40m corridor proposed for the MN73 road realignment. There is no cultivated agricultural land or other commercial

¹ The project site is defined as Portion 4 of the Farm Scuitklip 92, which has a total extent of ~3518ha.

agricultural activities within the farm portion which could be impacted upon by the proposed development.

Pre-Construction Surveys:

Prior to initiating construction, a number of detailed surveys will be required including, but not limited to:

- » Geotechnical survey – The geotechnical study will look at the availability of natural construction materials. This study will serve to inform the extent of earthworks and compaction required as well as the final micro-sitting of the realigned road which includes a 20m road reserve.
- » Site survey - in order to finalise the design layout of the road and the 20m road reserve. The finalisation will need to be confirmed in line with the Environmental Authorisation issued for the road realignment.

Construction of the new section of the MN73:

The realigned section of the MN73 road considered within this Basic Assessment Report will be approximately 4km in length. The realigned section of the MN73 will be in accordance with the Advertising on Roads and Ribbon Development Act No. 21 of 1940 and the Road Ordinance, 19 of 1976 and will be constructed in the following simplified sequence:

- Step 1: Final design and micro-siting of the infrastructure based on geotechnical, topographical conditions and potential environmental sensitivities;
- Step 2: Vegetation clearance within the development footprint (where required);
- Step 3: The development of stormwater control management systems which will divert water from the construction areas and will also be applicable to the operation phase of the road.
- Step 4: Construction of ~4km long and 7m wide gravel road within a road reserve of 20m.

The newly constructed road will be a single carriageway gravel road. Construction of the road realignment will take approximately 3 to 4 months to complete.

Undertake site rehabilitation

- Step 1: Areas requiring rehabilitation will include those areas disturbed during the construction phase which are not required for operation. Rehabilitation should be undertaken in an area as soon as possible after the completion of construction activities within that area.

Step 2:	Re-vegetated areas may have to be protected from wind erosion and maintained until an acceptable plant cover has been achieved.
Step 3:	Erosion control measures (i.e. drainage works and anti-erosion measures) should be used in sensitive areas to minimise loss of topsoil and control erosion.
Step 4:	All temporary facilities, temporary equipment, and waste materials must be removed from site.
Step 5:	Any access points and/or access roads which are not required during the operational phase must be closed as part of the post-construction rehabilitation.
<u>Operation and Maintenance Phase</u>	
Following completion of construction and commissioning, the Northern Cape Department of Roads and Public Works (NC DR&PW) will be responsible for the operation and routine maintenance of the road infrastructure.	

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN R 983, 984 and 985	Description of project activity that triggers listed activity
<p>GN R.983, Activity 12: A development of – (xii) infrastructure or structures with a physical footprint of 100 square metres or more;</p> <p>where such development occurs – (a) within a watercourse (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse.</p>	The section of the MN73 to be realigned will have a physical footprint of more than 100 square metres and will traverse and be within 32m of an ephemeral watercourse.
<p>GN R.983, Activity 19: The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from – (i) a watercourse.</p>	The construction of the realigned section of the MN73 will require material being deposited into or removed from the ephemeral watercourse which traverses the 40m assessment corridor.
<p>GN R.983, Activity 24: A development of – (ii) a road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres.</p>	The realigned section of the MN73 will have a road surface width of 7m, with a road reserve of 20m (the statutory width for the road reserve of Minor roads).

Listed activity as described in GN R 983, 984 and 985	Description of project activity that triggers listed activity
<p>GN R.985, Activity 14: The development of (xii) infrastructure covering 10 square metres or more where such construction occurs within a watercourse or within 32m measured from the edge of the watercourse; in a) Northern Cape (ii) Outside urban areas, in (dd) sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority.</p>	<p>The section of the MN73 to be realigned will cover an area more than 10m² and will occur within 32m of an ephemeral watercourse. The realignment is within an ecosystem service area (Ecological Support Area) as identified in the Environmental Management Framework (EMF) for the Namakwa District Municipality.</p>

2. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h), Regulation 2014. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and

seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

A regional site identification process undertaken in 2010 included the consideration of sites/areas of special environmental importance and planning criteria, as well as issues relating to landscape character, value, sensitivity and capacity for the development of CSP facilities. These aspects were then balanced with technical constraining factors affecting the siting of the KaXu Solar One and Xina Solar One, and included the solar resource, land availability, accessibility and existing grid infrastructure. The remaining area of Portion 4 of the Farm Scuitklip was then earmarked by Paulputs (Pty) Ltd as being potentially suitable for another CSP Project.

The area immediately surrounding the Paulputs Substation (located approximately 45km north-east of Pofadder), and specifically Portion 4 of the Farm Scuitklip 92 has become a node for solar energy facility development. Two Concentrated Solar Power (CSP) facilities and one photovoltaic (PV) facility have already been constructed in this area. These are known as the Kaxu Solar One, Xina Solar One and Konkoonsies I PV plants respectively. Another PV facility (known as Konkoonsies II PV) is to be constructed during 2017, and a third CSP facility (known as the Paulputs CSP project DEA Ref No.: 14/12/16/3/3/2/870) received an environmental authorisation on 16 November 2016.

In order to accommodate the solar energy facilities near the Paulputs Substation and specifically the authorised Paulputs CSP Facility, the road realignment is required on Portion 4 of the Farm Scuitklip 92. Therefore, no feasible alternative sites are available for consideration, and are not considered/assessed further.

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

Alternative 1:	Latitude (S):	Longitude (E):
Alternative S1 (preferred)		
• Starting point of the activity	28° 50' 50.361" S	19° 34' 42.870" E
• Middle/Additional point of the activity	28° 51' 24.057" S	19° 33' 44.290" E
• End point of the activity	28° 52' 26.737" S	19° 34' 3.661" E
Alternative S2 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

A table has been attached as **Appendix J1** detailing the proposed road realignment co-ordinates. Please note that the co-ordinates in Appendix J1 are the approximate centreline of the proposed corridor. These are not fixed and would be defined following the final micro-siting of the road alignment. A corridor of 40m is currently applied for to allow for micro-siting of the 7m wide road and road reserve of 20m. The corner co-ordinates of the corridor are provided in Appendix J1.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the layout map provided in Appendix A of this form.

b) Layout alternatives

The consideration of layout alternatives are constrained on the basis of the approved CSP facility layout plan, as well as potential environmental sensitivities identified. Following specialist investigations of Portion 4 of the Farm Scuitklip 92 for the Paulputs CSP Facility and for the proposed project, it was determined that the area to the east of the Paulputs CSP heliostat field was deemed unsuitable due to known environmental sensitivities, as well as space and technical constraints. The possibility of utilising the eastern section of Portion 4 of the Farm Scuitklip 92 for the proposed MN73 realignment was therefore excluded as a reasonable and feasible layout alternative. Technical and environmental constraints identified within the eastern section of the farm include:

- » Technical constraint: The Paulputs-Scuitdrift 1 132kV and Paulputs-Kaxu Solar 1 132kV power lines traverse the centre of the project site between the authorised Paulputs CSP Facility and the existing Kaxu CSP Facility. There is not sufficient space for the construction of a 7m road with a 20m road reserve between these facilities and two existing power lines.
- » Technical constraint: The associated infrastructure of the authorised Paulputs CSP Facility is to be located on the eastern side of the heliostat field. For the road realignment to follow the eastern boundary of the heliostat field is not feasible due to space constraints.
- » Environmental constraint: Areas of heritage sensitivity on the project site include terrain close to hills or rocky features, and the memorial sites below Ysterberg. The rocky outcrops that occur on the north eastern side of the farm are regarded as no-go areas and a 60m buffer around each outcrop has been recommended by the heritage specialist. These sites and others like them in the broader landscape provided shelter and variety of resources that attracted human activity through Stone Age times.

Due to environmental and technical constraints, only one alternative is proposed for the realignment and is therefore the preferred alternative. A 40m wide corridor has been investigated and assessed.

The 40m corridor for the proposed realignment starts approximately 600m north of the Paulputs Substation in the southern portion of the project site, adjacent to the heliostat field of the authorised Paulputs CSP Facility. The realignment route follows the boundary of the heliostat field and intersects with the existing R357 (also known as the Onseepkans road) on the northern boundary of Portion 4 of the Farm Scuitklip 92, at a point approximately 370m north west from the current intersection. The length of the realigned section of road is approximately 4km.

In the case of linear activities:

Alternative 1:	Latitude (S):	Longitude (E):
Alternative S1 (preferred)		
• Starting point of the activity	28° 50' 50.361" S	19° 34' 42.870" E
• Middle/Additional point of the activity	28° 51' 24.057" S	19° 33' 44.290" E
• End point of the activity	28° 52' 26.737" S	19° 34' 3.661" E
Alternative S2 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

Alternative S3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

c) Technology alternatives

No technology alternatives are applicable for the proposed realignment. The proposed project will need to conform to the Road Ordinance, 19 of 1976 and the Advertising on Roads and Ribbon Development Act, No. 21 of 1940.

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

The design of the section of the MN73 to be realigned will be based on widely proven and accepted industry standards (in accordance with the Road Ordinance, 19 of 1976 and the Advertising on Roads and Ribbon Development Act, No. 21 of 1940) therefore no other alternatives were considered for the proposed road realignment.

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

e) No-go alternative

The do nothing alternative is the option of not realigning the section of the MN73 which traverses Portion 4 of the Farm Scuitklip 92 and the authorised Paulputs CSP facility development footprint. The farm portion has been disturbed by numerous other infrastructure and will be zoned to Special: Solar Use to accommodate the Paulputs CSP Facility. There is no cultivated agricultural land or any other commercial agricultural activities within the farm portion. The current land uses do not preclude

the planned road realignment, predominantly as this is a 4km realignment of an existing road, and not a greenfields development. The need and rationale for the road realignment is to ensure road safety for road users within an area which has become a node for solar energy facilities. This option is assessed as the "no go alternative" in this Basic Assessment Report (also refer to **Appendix F**).

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	Size of the activity:
Alternative A1 (preferred activity alternative)	m ²
Alternative A2 (if any)	m ²
Alternative A3 (if any)	m ²

or, for linear activities:

Alternative:	Length of the activity:
Road Realignment Corridor Alternative (preferred activity alternative)	4km
Alternative A2 (if any)	m
Alternative A3 (if any)	m

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:	Size of the site/servitude:
Road Realignment Corridor Alternative (preferred activity alternative)	Servitude/road reserve = 20m (within an assessed 40m wide corridor)
Alternative A2 (if any)	m ²
Alternative A3 (if any)	m ²

4. SITE ACCESS

Does ready access to the site exist?

If NO, what is the distance over which a new access road will be built

YES	
	m

Describe the type of access road planned:

The proposed realigned road will be a single carriageway gravel road with a road reserve of 20m. Portion 4 of the Farm Scuitklip 92 can be readily accessed from two points located along the property boundary. The eastern access point is positioned on the eastern side of the farm portion and can be accessed via the N14. This eastern access point is currently being used for access to the other two CSP facilities on the farm portion. The northern access point is via the N14 via the existing tarred road off the R357 Onseepkans road and onto the existing MN73 gravel road. After the MN73 has been realigned, the access point will be ~370m north west from the current access point.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site. The position of the road in relation to the project site has been illustrated in the locality map included in **Appendix A**.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as **Appendix A**. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s);
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

An A3 Layout Map has been attached to **Appendix A**. The map indicates the following:

- » the closest town to the project site (i.e. Onseepkans);
- » road access from all major roads in the area;
- » road numbers of all major roads as well as the roads that provide access to the project site;
- » all roads within a 1km radius of the project site;
- » a north arrow;
- » a legend; and
- » locality GPS co-ordinates indicating the position of the section of the MN73 to be realigned using the latitude and longitude of the start, centre and end point.

No alternative are illustrated in the map as no alternatives have been assessed for the section of the MN73 to be realigned.

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

An A3 Layout Map also referred to as the route plan has been attached to **Appendix A**. The map indicates the following:

- » the property boundaries and numbers of all the properties within 50 metres of the site;
- » the exact position of each listed activity applied for (excluding alternatives);
- » servitude(s) indicating the purpose of the servitude;
- » a north arrow; and
- » a legend.

Spatial data regarding the current land use and zoning of the properties adjoining the site were unavailable at the time the report was compiled and was therefore not illustrated on the map. No alternative are illustrated in the map as no alternatives have been assessed for the section of the MN73 to be realigned.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

An A3 Sensitivity map and a Critical Biodiversity Area (CBA) map has been included within **Appendix A**. The map indicates the following:

- » all watercourses identified within the project site;
- » ridges and outcrops identified;
- » cultural and historical features identified by the specialist;
- » areas with indigenous vegetation ; and
- » critical biodiversity areas.

Ecological Sensitivity

The majority of the realignment corridor occurs within an area of moderate ecological sensitivity. Areas of moderate and low ecological sensitivity within Portion 4 of Farm Scuitklip 92 refer to areas where a great amount of disturbance has already occurred and species of concern are less likely to be present. Areas that have been severely disturbed are considered of low conservation importance. Areas that have been disturbed by farming are considered to be of moderate ecological sensitivity. These areas are disturbed mostly by overgrazing as well as denudation of some areas around watering holes and roads. Ecological integrity and conservation importance of the areas that will be affected by the clearing of vegetation are low to moderate, however species of concern (such as *Hoodia gordonii* and *Boscia foetida*) may be impacted upon. *Boscia foetida* have been identified within the assessment corridor, while *Hoodia gordonii* have

not been identified. However, *Hoodia gordonii* is not a large conspicuous species and the likelihood that isolated species or colonies occurring in the area can be high.

An ephemeral drainage line (wash) bisects the northern section of the study area² from east to west, gradually narrowing towards the east. This system is highly fragmented by the roads and past land use practices, and the adjacent facilities have disrupted any flows within this system (Scherman Colloty & Associates, 2016)³. Therefore, the wash (drainage line) is considered to be of low sensitivity and impact to the feature would be of low significance.

Although the realignment is situated within an Ecological Support Area (ESA), which is listed as a migration route, the consideration of this area as a migration route does seem to be counter-intuitive as it seems to start in the lowlands of the Gariep River, crosses over rocky mountainous areas only to return to the lowlands of the Gariep River again. Regardless, the realignment of the MN73 will not impact the migration route and would have very little impact on species using this route.

Heritage sensitivity

Areas of heritage sensitivity on Portion 4 of the Farm Scuitklip 92 include terrain close to hills or rocky features and the memorial sites below Ysterberg. The rocky outcrops that occur to the north east of the Paulputs CSP project footprint are regarded as no go areas and a 60m buffer around each outcrop has been considered. These sites and others like them in the broader landscape provided shelter and a variety of resources that attracted human activity through Stone Age times. All these rocky outcrops fall outside of the 40m assessment corridor and is therefore avoided by the road realignment. The memorial sites located below Ysterberg are regarded as high sensitivity and it is recommended that these memorial markers be respected by way of a 10m buffer zone. These memorials are completely avoided by the realignment of a section of the MN73 and the 40m assessment corridor. The open plains have been found to have sparsely scattered artefacts of which none are located within the 40m assessment corridor. Therefore, all these heritage features i.e. memorial sites rocky features and scattered artefacts have been considered and will not be impacted by the realignment.

A desktop Palaeontological Impact Assessment (PIA) of the full extent of Portion 4 of the Farm Scuitklip 92 has previously been undertaken by John Pether in 2010⁴. The

² The study area is defined as the area west of the MN73 to be decommissioned and north of the existing Paulputs/Scuitdrift 1 132kV and Paulputs/Kaxu Solar 1 132kV power lines and includes the 40m corridor.

³ Scherman Colloty and Associates. 2012. Water Resources Assessment: Paulputs Concentrated Solar Plant, Northern Cape Province.

⁴ Pether, J. 2010. Brief Palaeontological Impact Assessment (Desktop Study). Proposed Pofadder Solar Thermal Plant. Portion 4 of the Farm Scuit-Klip 92, Kenhardt District, Northern Cape. 3 December 2010.

section of the MN73 road realignment entails shallow disturbance of superficial, geologically young (Quaternary) deposits which have low fossil potential and sensitivity.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

Site photographs are attached within **Appendix B.**

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

A facility illustration is included within **Appendix C.**

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	YES		Please explain
<p>The realignment route is currently zoned for Agriculture. There is no cultivated agricultural land or other commercial agricultural activities within the farm portion which could be impacted upon by the proposed development. Two CSP facilities, KaXu Solar One and Xina Solar One are located in the southern portion of the site. The landowner, Kaxu CSP South Africa (Pty) Ltd has rezoned the KaXu Solar One and Xina Solar One sites for Special Solar use, which is consistent with the intended land use. A similar rezoning process will be undertaken for the Paulputs CSP Facility, including the road realignment.</p>			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES		Please explain
<p>The Northern Cape Provincial Spatial Development Framework (NCPSDF) includes objectives that refer to the restructure of road networks to promote economic activity in</p>			

<p>appropriate locations. This framework aims to provide and maintain an adequate road and railway transport system throughout the Province.</p> <p>The NCPSDF also makes reference to the need to ensure the availability of inexpensive energy. The section notes that in order to promote economic growth in the Northern Cape the availability of electricity to key industrial users at critical localities at rates that enhance the competitiveness of their industries must be ensured. At the same time, the development of new sources of energy through the promotion of the adoption of energy applications that display a synergy with the province's natural resource endowments must be encouraged. In this regard the NCPSDF includes the reference to renewable energy resources in "the development of energy sources such as solar energy, the natural gas fields, bio-fuels, etc., could be some of the means by which new economic opportunity and activity is generated in the Northern Cape". The NCPSDF also highlights the importance of close co-operation between the public and private sectors in order for the economic development potential of the Northern Cape to be realised. The MN73 road needs to be realigned in order for the authorised Paulputs CSP Facility to be constructed, which will contribute towards this objective.</p>		
<p>(b) Urban edge / Edge of Built environment for the area</p>	<p>NO</p>	<p>Please explain</p>
<p>The site for the road realignment falls outside the urban edge. Therefore, the proposed project does not impact upon the urban edge.</p>		
<p>(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).</p>	<p>YES</p>	<p>Please explain</p>
<p>The project will not compromise IDP objectives but will assist in reaching these objectives as the IDPs of the respective municipalities aim to ensure that the quality of life of the District community through purposeful and quality service, and the effective and optimal utilisation of resources is achieved. This project will assist in supporting the local electricity supply through accommodating the authorised Paulputs CSP Facility, the existing KaXu Solar One, the existing Xina Solar One and the existing Konkoonsies Solar I Facility which are and will be contributing to the National Eskom Grid. The project will further assist in job creation which will assist in achieving IDP objectives.</p>		
<p>(d) Approved Structure Plan of the Municipality</p>	<p>YES</p>	<p>Please explain</p>
<p>The purpose of the road realignment is to provide safe and adequate access to users utilising the MN73. The local and district municipalities were included as part of the Public Participation Process for the approved Paulputs CSP Facility project. The proposed realignment supports this approved project, as well as other solar energy facilities in the area and does not compromise the structure of the municipal plans.</p>		

<p>(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)</p>		NO	Please explain
<p>The approval of this application will not compromise the Namakwa District Municipality Environmental Management Framework. Although the MN73 alignment traverses an Ecological Support Area (ESA), the realignment of the MN73 will not impact migration routes and would have very little impact on species within the ESA.</p> <p>The proposed realignment will support the authorised Paulputs CSP Facility as well as other solar energy facilities near the Paulputs Substation and will therefore indirectly contribute to clean energy generation as a sustainable resource and holds significant benefits for the local region and the country as a whole. Renewable resources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future. The project aims at achieving the set goals for the Plan through addressing all possible environmental issues associated with the development and addressing measures to mitigate environmental issues.</p>			
<p>(f) Any other Plans (e.g. Guide Plan)</p>	YES		Please explain
<p>Environmental Implementation Plan (EIP)</p> <p>An Environmental Implementation Plan (EIP) was compiled by the Northern Cape Province. The EIP was compiled in order to encourage co-operative governance across departments as NEMA calls for the development of a national and provincial Environmental Implementation Plans (EIPs) and Environmental Management Plans (EMPs). The EIP aims to ensure that land use decision-making is carried out using adequate available environmental resource information in order to ensure sustainable and appropriate environmental management to the benefit of its residents. One of the set goals for the Programme is ensuring that all environmental issues are appropriately addressed. This is achieved for this project through the execution of this Basic Assessment process.</p>			
<p>3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?</p>	YES		Please explain
<p>The main purpose of the proposed realignment is to accommodate the authorised Paulputs CSP Facility as well as the other solar energy facilities near the Paulputs Substation (i.e. KaXu Solar One, Xina Solar One and Konkoonsies Solar I Facility) which</p>			

<p>will contribute to the National Eskom electricity grid. These projects are in line with the current IDP objectives. The realignment of the MN73 is not specifically considered within the existing approved SDF, but as the project is the realignment of an existing road, the project would contribute to economic development, and provide safe and adequate access.</p>		
<p>4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)</p>	<p>YES</p>	<p>Please explain</p>
<p>The section of the MN73 to be realigned will contribute to economic development in the area and provide safe and adequate access. The main purpose of the proposed Project is to enable the connection of the authorised Paulputs CSP Facility to the National Eskom electricity grid by realigning the MN73 which traverses the centre of the development footprint of the CSP facility as well as to accommodate other solar energy facilities near the Paulputs Substation. The proposed Project will accommodate the authorised Paulputs CSP Facility as well as the other solar energy facilities in the area, which are and will be contributing to the National Eskom electricity grid. This will have a positive economic impact at a local and regional level in terms of job creation (directly and indirectly) as well as contributing to alleviate South Africa’s existing energy supply shortage.</p> <p>Furthermore, the local regional Integrated Development Plan (IDP) and Spatial Development Framework (SDF) call for opportunities for the creation of jobs. Up to 18 employment opportunities will be created during the construction phase of the road.</p>		
<p>5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>	<p>YES</p>	<p>Please explain</p>
<p>All the necessary services with adequate capacity are currently available, and no additional capacity is required to cater for the road realignment. The MN73 is an existing road, and this application is for a realignment of a section of this road only. All the services needed for the realignment of the MN73 have been adequately provided for and should any need for other services arise the relevant authority will be communicated with.</p>		

<p>6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>		NO	Please explain
<p>The Project will not have any negative implications for the municipality in terms of priority and placement of services and opportunity costs.</p>			
<p>7. Is this project part of a national programme to address an issue of national concern or importance?</p>		NO	Please explain
<p>The MN73 is an existing road, and this application is for a realignment of a section of this road only. This road is owned and managed by the NC DR&PW, a provincial authority. However, the need for the realignment is for the development of the Paulputs CSP project, and is aimed at providing safe and adequate access for the road users that utilises the MN73.</p> <p>Within a policy framework, the development of renewable energy in South Africa is supported by the White Paper on Renewable Energy (November 2003). In order to meet the long-term goal of a sustainable renewable energy industry, a goal of 17,8GW of renewables by 2030 has been set by the Department of Energy (DoE) within the Integrated Resource Plan (IRP) 2010.</p> <p>Renewable Energy projects also form a key part of the National Development Plan which aims to “speed up and expand renewable energy...” in order to facilitate the transition of South Africa to low-carbon economy.</p> <p>The proposed section of the MN73 to be realigned will support many of the objectives of the National Development Plan (NDP). Some of these objectives are listed below:</p> <ul style="list-style-type: none"> • Create 11 million jobs by 2030; and • Procuring about 20 000MW of renewable electricity by 2030. <p>In order to construct and integrate the power generated at Paulputs CSP Facility into the National Eskom electricity grid, MN73 is required to be realigned as it traverse the development footprint of the CSP Facility. Therefore, the road realignment is a key part of the Paulputs CSP Facility without which the CSP facility cannot be constructed.</p>			
<p>8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)</p>	YES		Please explain
<p>There are several existing infrastructure situated within the project site. This includes:</p> <ul style="list-style-type: none"> • two existing CSP facilities i.e. KaXu Solar One and Xina Solar One; 			

- the Paulputs/KaXu Solar 1 132kV power line and the Paulputs/Schuitdrift 1 132kV power line;
- the existing Paulputs and KaXu Substations; and
- the existing MN73 which is proposed to be realigned.

One of the main reasons why the land use is favourable for the location of the CSP facilities, including the Paulputs CSP Facility, is the flat terrain, with moderate to low ecological sensitivity, as well as low agricultural potential, proximity to an existing substation, proximity to existing access routes and road networks and the availability of land. The position of the proposed section of the MN73 to be realigned is considered to be the most feasible options for the location of this infrastructure, taking technical and environmental (social and biophysical) issues into consideration.

The realignment on this site does not detract from the current land uses, and is considered to be a practicable land use option.

9. Is the development the best practicable environmental option for this land/site?	YES	Please explain
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The MN73 is an existing road which traverses Portion 4 of the Farm Scuitklip 92. The realignment of a portion of this road will be on the same farm portion. This farm is currently occupied by two existing CSP facilities which includes KaXu Solar One and Xina Solar One, as well as the Paulputs CSP Facility which has been authorised. The project site is traversed by the existing Paulputs/KaXu Solar 1 132kV power line and the existing Paulputs/Schuitdrift 1 132kV power line and the existing Paulputs and KaXu Substations are situated in the southern section of the farm portion. The centre of the project site is traversed by the existing MN73 which is proposed to be realigned. The realignment on this site does not detract from the current land uses, and is considered to be a practicable land use option.

The Paulputs CSP Facility is an authorised facility. The purpose of the proposed Project is to accommodate the Paulputs CSP facility as well as other solar energy facilities near the Paulputs Substation and therefore, the location of the proposed Project is dependent of the development footprint of the solar energy facilities and specifically the Paulputs CSP Facility. The realignment route assessed in this Basic Assessment is considered to be the most feasible option for the location of this infrastructure, taking technical and environmental (social and biophysical) issues into consideration.

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES	Please explain
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The specialist studies undertaken as part of this Basic Assessment conclude that the development of the proposed Project will have environmental impacts which can be mitigated to acceptable levels. The project is proposed adjacent to the boundaries of the already authorised Paulputs CSP Facility. The proposed Project will accommodate

<p>the CSP facility and other solar energy facilities near the Paulputs Substation which will connect and are already connected to the National Eskom electricity grid thereby facilitating the distribution of renewable energy nationally. This will have a positive impact at a local, regional and national level and concur with various national policies (as discussed earlier). The benefits of the Project are considered to outweigh the negative impacts (none of which are considered fatal flaws to the project). Further direct and indirect benefits in the form of job creation and direct and indirect economic benefits will also be realised.</p>		
<p>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</p>	<p>NO</p>	<p>Please explain</p>
<p>The MN73 is an existing road which provides access to Pofadder and the Onseepkans. There will be no disruption to the use of the road as the section of the MN73 will only be decommissioned after the realignment has been fully commissioned. The MN73 intersects the R357 (Onseepkans road). The point of intersection will be 370m north west of the current intersection. The realignment of a section of the MN73 will not encourage other similar road realignments and will therefore not set a precedent.</p>		
<p>12. Will any person's rights be negatively affected by the proposed activity/ies?</p>	<p>NO</p>	<p>Please explain</p>
<p>The realigned section of road is within a single farm portion, and the affected landowner will benefit from the realignment of the road in order to facilitate the construction of the Paulputs CSP facility. Private landowners surrounding Portion 4 of the Farm Scuitklip 92 which utilise the MN73 will be impacted by the realignment, but their rights to the access which is currently provided will not be negatively affected or compromised as access will not be restricted at any time. The realigned section will be constructed and commissioned prior to the existing section of road being closed.</p>		
<p>13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?</p>	<p>NO</p>	<p>Please explain</p>
<p>The proposed project falls outside the urban edge. Portion 4 of the Farm Scuitklip is ~35km from Pofadder, ~85km from Augrabies and ~95km from Kakamas. Therefore, the proposed Project does not impact upon the urban edge.</p>		
<p>14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?</p>	<p>NO</p>	<p>Please explain</p>
<p>The proposed project will not support any of the objectives for Strategic Infrastructure Projects (SIP) as it does not form part of integrated rail and port expansion, back-of-port industrial capacity (including an IDZ), strengthening maritime support capacity for oil and gas along African West Coast or the expansion of iron ore mining production and beneficiation or any of the other SIPS.</p>		

<p>15. What will the benefits be to society in general and to the local communities?</p>	<p>Please explain</p>
<p>The main benefit of the realignment to society will be to ensure road safety, especially within an area which has become a node for solar energy facilities. The main purpose of the proposed Project is to accommodate the authorised Paulputs CSP Facility and the other solar energy facilities near the Paulputs Substation which will connect and are already connected to the National Eskom electricity grid. This will have a positive economic impact at a National, local and regional level. This will also result in job creation (directly and indirectly) as well as contributing to alleviate South Africa’s existing energy supply shortage.</p>	
<p>16. Any other need and desirability considerations related to the proposed activity?</p>	<p>Please explain</p>
<p>The area surrounding the Paulputs Substation has become a node for solar energy facilities. The MN73 road which currently traverses the development footprint of the authorised CSP Facility is required to be realigned outside of the planned development footprint to ensure road safety.</p>	
<p>17. How does the project fit into the National Development Plan for 2030?</p>	<p>Please explain</p>
<p>The MN73 is an existing road, and this application is for a realignment of a section of this road only. This road is owned and managed by the NC DR&PW, a provincial authority. The MN73 currently traverses the development footprint of the authorised Paulputs CSP Facility. The need for the realignment is to provide safe and adequate access for the road users that utilises the MN73.</p> <p>By 2030 South Africa aims to reduce carbon emissions, promote economic development and increase the GDP. To achieve this, the Provinces have aimed to improve Infrastructure and Basic Services; Socio-economic Development; Institutional Transformation; Good Governance and Public Participation; Financial viability and Management. The Paulputs CSP facility will assist in reducing the carbon footprint, as it will be transporting energy produced from a renewable energy project (solar) and it will facilitate the infrastructure growth in the area including job creation, local content, enterprise development and other socio-economic benefits and the positive impacts will therefore be realised. The realignment of a section of the MN73 will provide safe and adequate access while the CSP facility assist in reducing the carbon footprint.</p> <p>Renewable Energy projects also form a key part of the National Development Plan which aims to “speed up and expand renewable energy...” in order to facilitate the transition of South Africa to low-carbon economy.</p> <p>The National Development Plan contains a plan aimed at eliminating poverty and reducing inequality by 2030. The NDP identifies 9 key challenges and associated remedial plans. Managing the transition towards a low carbon national economy is</p>	

identified as one of the 9 key national challenges. Expansion and acceleration of commercial renewable energy is identified as a key intervention strategy.

The proposed project will support many of the objectives of the National Development Plan (NDP). Some of these objectives are listed below:

- Create 11 million jobs by 2030; and
- Procuring about 20 000MW of renewable electricity by 2030.

18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.

The general objectives of Integrated Environmental Management have been taken into account for this Basic Assessment report by means of identifying, predicting and evaluating the actual and potential impacts on the biophysical environment, socio-economic conditions and cultural heritage.

The risks, consequences, alternatives as well as options for mitigation of activities have also been considered with a view to minimise negative impacts, maximise benefits, and promote compliance with the principles of environmental management.

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

Section 2 of NEMA states that environmental management must place people and their needs at the forefront, and serve their physical, psychological, developmental, cultural and social interests equitably. These principles of NEMA include the following:

- » Development must be sustainable;
- » Pollution must be avoided or minimised and remedied;
- » Waste must be avoided or minimised, reused or recycled;
- » Negative impacts must be minimised; and
- » Responsibility for the environmental health and safety consequences of a policy, project, product or service exists throughout its life cycle.

The principles of NEMA have been considered in this assessment through compliance with the requirements of the relevant legislation in undertaking the assessment of potential impacts, as well as through the implementation of the principle of sustainable development where appropriate mitigation measures have been recommended for impacts which cannot be avoided. In addition, the successful implementation and appropriate management of this proposed project will aid in achieving the principle of minimisation of pollution and environmental degradation. The project also forms part of a renewable energy project which contributes to reducing the release of CO₂ into the atmosphere through energy production by means of coal and thereby helping to curb climate change.

This process has been undertaken in a transparent manner and all effort has been made to involve interested and affected parties, stakeholders and relevant Organs of State such that an informed decision regarding the project can be made by the Competent Authority.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable (refer to **Table 3.1** below):

Table 3.1: Relevant legislative and permitting requirements applicable to the MN73 realignment

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
National Legislation			
National Environmental Management Act (Act No. 107 of 1998)	<p>EIA Regulations have been promulgated in terms of Chapter 5. Activities which may not commence without an environmental authorisation are identified within these Regulations.</p> <p>In terms of S24(1) of NEMA, the potential impact on the environment associated with these listed activities must be considered, investigated, assessed and reported on to the competent authority (the decision-maker) charged by NEMA with granting of the relevant environmental authorisation.</p> <p>In terms of the NEMA EIA Regulations a Basic Assessment Process is required to be undertaken for the proposed Project.</p>	Northern Cape Department of Environment and Nature Conservation (DENC)	» The listed activities triggered by the proposed road realignment have been identified and assessed. An application has been lodged with the DENC. The Final Basic Assessment Report is to be submitted to the DENC for review and decision making.
National Environmental Management Act (Act No. 107 of 1998)	<p>In terms of the Duty of Care provision in S28(1) the project proponent must ensure that reasonable measures are taken throughout the life cycle of this project to ensure that any pollution or degradation of the environment associated with a project is avoided, stopped or minimised.</p> <p>In terms of NEMA, it has become the legal duty of a project proponent to consider a project</p>	Northern Cape Department of Environment and Nature Conservation (DENC)	<p>While no permitting or licensing requirements arise directly, the holistic consideration of the potential impacts of the proposed Project has found application in the BA process.</p> <p>The implementation of mitigation measures are included as part of the Draft EMPr and will continue to apply throughout the life cycle of the project.</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
<p>Environment Conservation Act (Act No 73 of 1989)</p>	<p>holistically, and to consider the cumulative effect of a variety of impacts.</p> <p>In terms of section 25 of the ECA, the national noise-control regulations (GN R154 in Government Gazette No. 13717 dated 10 January 1992) were promulgated. The NCRs were revised under Government Notice Number R. 55 of 14 January 1994 to make it obligatory for all authorities to apply the regulations.</p> <p>» Subsequently, in terms of Schedule 5 of the Constitution of South Africa of 1996, legislative responsibility for administering the noise control regulations was devolved to provincial and local authorities. Provincial Noise Control Regulations exist in the Free State, Western Cape and Gauteng provinces, but the Northern Cape province have not yet adopted provincial regulations in this regard and Allows the Minister of Environmental Affairs to make regulations regarding noise, among other concerns</p>	<p>» Northern Cape Department of Environment and Nature Conservation (DENC).</p> <p>» Khai-Ma Local Municipality</p>	<p>Noise impacts are expected to be associated with the construction phase of the road and are not likely to present a significant intrusion to the local community. There is no requirement for a noise permit in terms of the legislation.</p>
<p>National Environmental Management: Biodiversity Act (Act No. 10 of 2004)</p>	<p>» In terms of the Biodiversity Act, the developer has a responsibility for:</p> <ul style="list-style-type: none"> * The conservation of endangered ecosystems and restriction of activities according to the categorisation of the area (not just by listed activity as specified in the EIA regulations). * The application of appropriate environmental management tools to 	<p>Northern Cape Department of Environment and Nature Conservation (DENC)</p>	<p>Under this Act, a permit would be required for any activity which is of a nature that may negatively impact on the survival of a listed protected species.</p> <p>An ecological study has been undertaken as part of the Basic Assessment process (refer to Appendix D1). As such the potential occurrence of critically endangered,</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	<p>ensure integrated environmental management of activities.</p> <ul style="list-style-type: none"> * Limit further loss of biodiversity and conserve endangered ecosystems. » In terms of GNR 1477 of 2009: Draft National List of Threatened Ecosystems published under S52(1)(a) of the Act provides for the listing of threatened or protected ecosystems based on national criteria. The list of threatened terrestrial ecosystems supersedes the information regarding terrestrial ecosystem status in the National Spatial Biodiversity Assessment (2011). » GNR1187 Amendment of Critically Endangered, Endangered, Vulnerable and Protected Species List published under S56(1) of the Act. 		<p>endangered, vulnerable, and protected species and the potential for them to be affected has been considered.</p> <p>A permit may be required should any listed plant species be disturbed or destroyed as a result of the proposed Project.</p>
<p>National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)</p>	<p>The purpose of this Act is to reform the law regulating waste management in order to protect health and the environment by providing for the licensing and control of waste management activities. To set standards for waste management on the project</p> <p>The Minister may by notice in the Gazette publish a list of waste management activities that have, or are likely to have, a detrimental effect on the environment.</p>	<p>Northern Cape Department of Environment and Nature Conservation (DENC)</p>	<ul style="list-style-type: none"> » As no waste disposal site is to be associated with the proposed realignment, no permit is required in this regard. » Waste handling, storage and disposal during construction is required to be undertaken in accordance with the requirements of the Act, (GN R926, of November 2013) and as detailed in the EMPr (refer to Appendix G). » The volumes of waste to be generated and stored on the site during construction of the road will not require

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	<p>In terms of the regulations published in terms of this Act (GN 921 of 29 November 2013), a Basic Assessment or Environmental Impact Assessment is required to be undertaken for identified listed activities.</p> <p>Any person who stores waste must at least take steps, unless otherwise provided by this Act, to ensure that</p> <ul style="list-style-type: none"> (a) The containers in which any waste is stored, are intact and not corroded or in any other way rendered unfit for the safe storage of waste; (b) Adequate measures are taken to prevent accidental spillage or leaking; (c) The waste cannot be blown away; (d) Nuisances such as odour, visual impacts and breeding of vectors do not arise; and (e) Pollution of the environment and harm to health are prevented. 		<p>a waste license (provided these remain below the prescribed thresholds).</p>
<p>National Environmental Management: Air Quality Act (Act No. 39 of 2004)</p>	<ul style="list-style-type: none"> » Measures in respect of dust control (S32) and National Dust Control Regulations of November 2013. » Measures to control noise (S34) - no regulations promulgated yet. » The Act provides that an air quality officer may require any person to submit an atmospheric impact report if there is reasonable suspicion that the person has failed to comply with the Act. 	<ul style="list-style-type: none"> » Northern Cape Department of Environment and Nature Conservation (DENC). » Khai-Ma Local Municipality 	<p>No permitting or licensing requirements arise from this legislation for the proposed Project.</p> <p>Dust Control Regulations describe the measures for control and monitoring of dust, including penalties. These regulations might be applicable during the construction phase of the project. Dust management have also been accounted for in the EMPr (see Appendix G)</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
National Water Act (Act No. 36 of 1998)	<ul style="list-style-type: none"> » Water uses under Section 21 of the Act must be licensed, unless such water use falls into one of the categories listed in S22 of the Act or falls under the general authorisation (and then registration of the water use is required). » Consumptive water uses may include the taking of water from a water resource and storage - Sections 21a and b. » Non-consumptive water uses may include impeding or diverting of flow in a water course - Section 21c; and altering of bed, banks or characteristics of a watercourse - Section 21i. » In terms of S19, the project proponent must ensure that reasonable measures are taken throughout the life cycle of this project to prevent and remedy the effects of pollution to water resources from occurring, continuing, or recurring. 	<ul style="list-style-type: none"> » Department of Water and Sanitation (DWS) 	<p>A water use license (WUL) is required in terms of sections 21(c) and 21 (i) of the National Water Act, if wetlands or drainage lines are impacted on, or the regulated area of a watercourse (being the riparian zone or the 1:100yr floodline whichever is greatest).</p>
National Heritage Resources Act (Act No. 25 of 1999)	<p>Section 38 states that Heritage Impact Assessments (HIAs) are required for certain kinds of development including</p> <ul style="list-style-type: none"> » the construction of a road, power line, pipeline, canal or other similar linear development or barrier exceeding 300 m in length; and 	<ul style="list-style-type: none"> » South African Heritage Resources Agency (SAHRA) » Northern Cape Provincial Heritage Resources Authority (Ngwao-Boswa Ya Kapa Bokone) 	<p>A permit may be required should heritage sites be unearthed on site during the construction phase.</p> <p>The relevant mitigation measures for the protection of heritage resources are included in the EMPr (refer to Appendix G).</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	<p>» any development or other activity which will change the character of a site exceeding 5000m² in extent.</p> <p>The relevant Heritage Resources Authority must be notified of developments such as linear developments (such as roads and power lines), bridges exceeding 50m, or any development or other activity which will change the character of a site exceeding 5000m²; or the re-zoning of a site exceeding 10 000m² in extent. This notification must be provided in the early stages of initiating the development, and details regarding the location, nature and extent of the proposed development must be provided.</p> <p>Standalone HIAs are not required where an EIA is carried out as long as the EIA contains an adequate HIA component that fulfils the provisions of section 38. In such cases only those components not addressed by the EIA should be covered by the heritage component.</p>		
<p>National Forests Act (Act No. 84 of 1998)</p>	<p>Protected trees: According to this act, the Minister may declare a tree, group of trees, woodland or a species of trees as protected. The prohibitions provide that 'no person may cut, damage, disturb, destroy or remove any protected tree, or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected</p>	<p>» Department of Agriculture, Forestry and Fisheries » Northern Cape Department of Environment and Nature Conservation (DENC).</p>	<p>A permit or license is required for the destruction of protected tree species and/or indigenous tree species within a natural forest.</p> <p>No protected tree species and/or indigenous tree species were identified within the proposed 40m corridor.</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	<p>tree, except under a licence granted by the Minister’.</p> <p>Forests: Prohibits the destruction of indigenous trees in any natural forest without a licence.</p>		
<p>Hazardous Substances Act (Act No 15 of 1973)</p>	<p>This Act regulates the control of substances that may cause injury, or ill health, or death by reason of their toxic, corrosive, irritant, strongly sensitising or inflammable nature or the generation of pressure thereby in certain instances and for the control of certain electronic products. To provide for the rating of such substances or products in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, modification, disposal or dumping of such substances and products.</p> <ul style="list-style-type: none"> » Group I and II: any substance or mixture of a substance that might by reason of its toxic, corrosive etc., nature or because it generates pressure through decomposition, heat or other means, cause extreme risk of injury etc., can be declared to be Group I or Group II hazardous substance; » Group IV: any electronic product; » Group V: any radioactive material. <p>The use, conveyance or storage of any hazardous substance (such as distillate fuel) is</p>	<p>Department of Health.</p>	<p>It is necessary to identify and list all the Group I, II, III and IV hazardous substances that may be on the site and in what operational context they are used, stored or handled. If applicable, a license is required to be obtained from the Department of Health.</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	prohibited without an appropriate license being in force.		
Advertising on Roads and Ribbon Development Act 21 of 1940	<p>Section 9 refers to the "Prohibition of erection of structures near certain roads.- (1) Subject to the provisions of Section 9A no person shall erect or permit the erection of any structure or any other things which is attached on the land on which it stands, even though it does not form part of that land, or construct or lay or permit the construction or laying of anything under or below the surface of any land within a distance of ninety-five metres from the centre line of a building restriction road, or make or permit to be made any structural alteration or addition to any such structure or thing situated, except in accordance with the permission in writing granted by the controlling authority concerned: Provided that the preceding provisions of this section shall not apply in connection with –</p> <p>Section 9A, the prohibition of erection of structures or construction of other things near intersection of certain roads. – (1) No person shall –</p> <p>a) on land situated within a distance of 500m from the intersection of the centre line of –</p> <p>i. a building restriction road with the centre line of another building restriction road or any other road;</p>	The Northern Cape Department of Roads and Public Works	Being proclaimed roads, MN73 and R357 are Building Restriction Roads. As such they are subject to a 95m building line in terms of the Advertising on Roads and Ribbon Development Act 21 of 1940. The roads are also subject to a 500m building line measured from road intersections in terms of said Act. The Provincial Roads Authority would need to grant permission for encroachment on said building lines

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	ii. any road with the boundary of any building restriction road with which it links up, except a national road as defined in the National Roads Act, 1971 (Act No. 54 of 1971), erect any structure or any other thing which is attached to the land on which it stands, whether or not it forms part of that land.		
Provincial Legislation			
Northern Cape Nature Conservation Act, No. 9 of 2009	Nature Conservation Act accompanied by all amendments is regarded by the Northern Cape Province as the legal binding, provincial documents, providing regulations, guidelines and procedures with the aim of protecting game and fish, the conservation of flora and fauna and the destruction of problematic (vermin and invasive) species. This act should be considered in its entirety, with special reference to: » Schedule 1: Specially Protected Species » Schedule 2: Protected Species » Schedule 6: Invasive Species	Northern Cape Department of Environment and Nature Conservation (DENC).	A collection/destruction permit must be obtained from Northern Cape Nature Conservation for the removal of any protected plant or animal species found on site.

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

If YES, what estimated quantity will be produced per month?

YES

Not determined at this time. Minimal waste is expected to be generated by the activity and can be managed effectively through the management measures included in the EMPr (refer to **Appendix G**).

How will the construction solid waste be disposed of (describe)?

It is anticipated that construction waste will be comprised mainly of soil material from excavation activities. Non-recyclable waste will be removed from site by a suitable contractor and will be transported to the nearest registered waste disposal facility for appropriate disposal.

Where will the construction solid waste be disposed of (describe)?

In order to comply with legal requirements, should there be excess solid construction waste after recycling options have been exhausted, the waste will be transported to the nearest registered waste disposal facility for appropriate disposal.

Will the activity produce solid waste during its operational phase?

If YES, what estimated quantity will be produced per month?

NO

m³

How will the solid waste be disposed of (describe)?

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA? **NO**

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility? **NO**

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? **NO**

If YES, what estimated quantity will be produced per month? m³

Will the activity produce any effluent that will be treated and/or disposed of on site? **NO**

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility? **NO**

If YES, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

Waste separation will be implemented as far as possible to allow for recycling if feasible.

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

	NO

If YES, is it controlled by any legislation of any sphere of government?

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

During the construction phase, it is expected that there will be short term, localised dust generation and exhaust emissions from vehicles and machinery. However, the dust and emissions will be of short term duration and have limited impact in terms of extent and severity. Appropriate dust suppression measures must be implemented to reduce the impacts. It is recommended that construction vehicles be serviced and kept in good mechanical condition in order to minimise possible exhaust emission. In this regard, the EMPr includes the relevant mitigation measures (refer to **Appendix G**).

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

	NO
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If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority.

e) Generation of noise

Will the activity generate noise?

YES	
	NO

If YES, is it controlled by any legislation of any sphere of government?

Describe the noise in terms of type and level:

Short term noise impacts are anticipated during the construction phase of the project from trucks and construction equipment. It is however anticipated that the noise will be localised and contained within the construction area and its immediate surroundings. Noise and vibrations from heavy vehicle traffic during the construction phase are unlikely to result in disruptions in daily living, movement patterns and quality of life for the local community due to the location of the realignment site. In this regard, the EMPr includes the relevant mitigation measures (refer to **Appendix G**).

13. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal	Water board	Groundwater	River, stream, dam or lake	Water will be supplied be means of trucks	The activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

Approximately
800 - 1200m³
per month

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

NO

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

A water use license (WUL) will be required in terms of sections 40, 21(c) and 21 (i) of the National Water Act. An application will be submitted to the Department of Water and Sanitation (DWS) prior to the commencement of the construction phase.

14. ENERGY EFFICIENCY

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

Not applicable. The purpose of the road realignment is to ensure safe and adequate road access while accommodating the authorised Paulputs CSP Facility and other solar energy facilities near the Paulputs Substation.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

Not applicable. The activities to be undertaken during the construction and operation phase of this project will not require alternative energy sources.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

- Paragraphs 1 - 6 below must be completed for each alternative.

- Has a specialist been consulted to assist with the completion of this section?

YES

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D. The specialist reports are included in **Appendix D1 – D4** and the associated declarations of each specialist have been included in **Appendix I**.

Property

description/physical address:

Province	Northern Cape Province
District Municipality	Namakwa District Municipality
Local Municipality	Khai-Ma Local Municipality
Ward Number(s)	1
Farm name and number	Scuitklip 92
Portion number	Portion 4
SG Code	C0360000000009200004

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:	The northern section of Portion 4 of the Farm Scuitklip 92 is zoned for Agricultural use. A re-zoning process to Special Solar use will be undertaken by Abengoa Solar Power South Africa (Pty) Ltd for the authorised Paulputs CSP Facility footprint, which includes the section of
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	the MN73 road to be realigned. The footprints of the existing KaXu CSP and Xina CSP Facilities on the southern section of Portion 4 of the Farm Scuitklip 92 has already been rezoned as Special Solar use.
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In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

YES

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative 1: Realignment of MN73

Flat	1:50	-	1:20	-	1:15	-	1:10	-	1:7,5	-	Steeper than 1:5
	1:20		1:15		1:10		1:7,5		1:5		

Alternative S2 (if any):

Flat	1:50	-	1:20	-	1:15	-	1:10	-	1:7,5	-	Steeper than 1:5
	1:20		1:15		1:10		1:7,5		1:5		

Alternative S3 (if any):

Flat	1:50	-	1:20	-	1:15	-	1:10	-	1:7,5	-	Steeper than 1:5
	1:20		1:15		1:10		1:7,5		1:5		

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline

2.4 Closed valley

2.7 Undulating plain / low hills

2.2 Plateau

2.5 Open valley

2.8 Dune

2.3 Side slope of hill/mountain

2.6 Plain

2.9 Seafront

2.10 At sea

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

Alternative 1:

Shallow water table (less than 1.5m deep)	NO
Dolomite, sinkhole or doline areas	NO
Seasonally wet soils (often close to water bodies)	NO
Unstable rocky slopes or steep slopes with loose soil	NO
Dispersive soils (soils that dissolve in water)	NO
Soils with high clay content (clay fraction more than 40%)	NO
Any other unstable soil or geological feature	NO
An area sensitive to erosion	YES

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition^E	Natural veld with scattered aliens^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "E" is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise (refer to the Ecological Report in **Appendix D1**).

The study area falls within the Karoo Biome and the 40m corridor proposed for the road realignment consists solely of one vegetation type, namely Bushmanland Arid Grassland (i.e. the plains within the Portion 4 of the Farm Scuitklip 42). This vegetation type is classified as Least Threatened.

Bushmanland Arid Grassland occurs on extensive, relatively flat plains and is sparsely vegetated by tussock grasses as well as abundant displays of annual herbs following heavy rain. This vegetation type contains endemic species belonging to the Griqualand West or Gariiep Centres of Endemism. At a national scale this vegetation type has been

transformed to a slight degree and only small patches are statutorily conserved in Augrabies Falls National Park and Goegab Nature Reserve.

The study area consists mainly of three vegetation communities which includes:

» *Acacia mellifera* – *Aristida congesta* dune open shrubland

This vegetation community is typically covered by sparse open grassland, with *Stipagrostis ciliata* and *Aristida congesta* being the dominant grass species. Due to the deeper soils, as well as soil chemistry and an increased water retention potential, larger *Acacia mellifera* are dominant in this vegetation community, with scattered, drought resistant dwarf shrubs or small trees, e.g. *Rhigozum trichotomum* and *Boscia foetida*. Species of concern found to occur in this vegetation community are the protected species *Aloe dichotoma* and *Boscia foetida* therefore suitability of the habitat for flora and fauna species of concern is high.

» *Acacia mellifera* – *Parkinsonia africana* wash open shrubland

The drainage line within the plains of the study area is regarded as a wash, as water will only flow after good rains, and soon will be dry again. The increased water retention in the underlying substrate allows for the growth of larger individuals of the species *Acacia mellifera* and *Parkinsonia africana*. This wash are wide and sandy, and blend into the landscape, merging with the adjacent grassland vegetation, but are nevertheless visible due to their microtopography and change in species composition.

The vegetation is often somewhat heterogeneous and with weeds, due to the disturbance of the periodic flooding. Suitability of the habitat for Red Data flora and fauna species is low.

» *Stipagrostis ciliata* – *Aristida congesta* open grassland

The open, sparse grassland is dominated by *Stipagrostis ciliata* and *Aristida congesta*. The shrubby *Rhigozum trichotomum* is prominent on the sandy localities while *Salsola aphylla* is more prominent where calcrete is exposed. Other dominant grass species occurring in this vegetation community include *Stipagrostis obtusa*, *Aristida adscensionis* and, to a much lesser extent, *Fingerhuthia africana* and *Eragrostis lehmanniana*. Suitability of the habitat for Red Data flora and fauna species is high (*Hoodia gordonii* recorded as well as isolated individuals of *Boscia foetida*).

Refer to the Ecological Report in **Appendix D1** for additional detail.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		NO	
Non-Perennial River	YES		
Permanent Wetland		NO	
Seasonal Wetland		NO	
Artificial Wetland		NO	
Estuarine / Lagoonal wetland		NO	

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

Portion 4 of the Farm Scuitklip 92 is situated within quaternary catchment D81E and is dominated by highly ephemeral river systems (DWAF, 2004). Potential runoff would flow in a north westerly direction towards the Gariiep River, while runoff from the elevated portions of the Skuitklip ridges flows in a northerly direction towards the Kaboep River, which then flows into the Gariiep River.

The region is however dominated by several dry alluvial watercourses which only hold water during high rainfall events. These systems have been highly fragmented by the existing roads and land use practices in the past, while the existing CSP facilities on the farm portion have now disrupted any flows within these systems. The significance of impact on the dry alluvial watercourse was assessed as being of low significance, due to the impacts and high degree of fragmentation coupled to the general lack of any important/visible aquatic habitat.

An ephemeral drainage line (or wash) bisects the northern section of Portion 4 of the Farm Scuitklip 92 from east to west, gradually narrowing towards the east of the project site. This ephemeral drainage line is regarded as a wash, as water will only flow after good rains, and soon dry up again.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area Although overgrazed in some areas, the vegetation of the <i>Acacia mellifera</i> – <i>Aristida congesta</i> dune open shrubland and <i>Stipagrostis ciliata</i> – <i>Aristida congesta</i>	Dam or reservoir	Polo fields
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open grassland can be described as natural vegetation. Generally, this vegetation community contains all the elements that can be expected in natural vegetation in this area.		
Low density residential	Hospital/medical centre	Filling station ^H
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential ^A	Church	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland No natural wetlands were observed. There are ephemeral drainage lines within the broader study area which are highly fragmented by existing facilities, and have disrupted any flows within these systems.
Light industrial	Sewage treatment plant ^A	Nature conservation area
Medium industrial ^{AN}	Train station or shunting yard ^N	Mountain, koppie or ridge The broader study area is located on flat plains, gently sloping from the south to the north, dunes to the west and several rocky features in the north eastern part of Portion 4 of the Farm Scuitklip.
Heavy industrial ^{AN}	Railway line ^N	Museum
Power station There are currently two existing CSP facilities; KaXu Solar One and Xina Solar One are located on the southern section of the farm portion.	Major road (4 lanes or more) ^N	Historical building
Office/consulting room	Airport ^N	Protected Area

Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam ^A	Sport facilities	<p>Archaeological site</p> <p>The rocky outcrops that occur on the north eastern boundary of the farm portion provided shelter and variety of resources that attracted human activity in the Stone Age. The outcrop situated nearest to the 40m road realignment corridor is approximately 1.5km away. Memorial sites are located below Ysterberg. All of these features are well outside of the area considered for the road realignment.</p>
Quarry, sand or borrow pit	Golf course	<p>Other land uses (describe)</p> <p>The project site is traversed by two existing power lines which includes the Paulputs/KaXu 1 132kV power line and the Paulputs/Schuitdrift 1 132kV power line, as well as the existing MN73 which is proposed to be realigned. There are currently two existing substations situated within Portion 4 of the Farm Scuitklip 92 and includes the Paulputs Substation and the KaXu Substation. A third substation has been approved as part of the Paulputs CSP Facility's environmental authorisation</p>

If any of the boxes marked with an "N" are ticked, how this impact will / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)		NO
Core area of a protected area?		NO
Buffer area of a protected area?		NO
Planned expansion area of an existing protected area?		NO
Existing offset area associated with a previous Environmental Authorisation?		NO
Buffer area of the SKA?		NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

The study area falls within an Ecological Support Area (ESA) and is adjacent to a Critical Biodiversity Area (CBA), but does not infringe on this area. Refer to the map illustrating the ecological support and critical biodiversity areas in **Appendix A**.

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES	NO
	Uncertain	
No buildings older than 60 years and heritage significance were identified within the 40m corridor for the proposed MN73 realignment or within 20m from the corridor.		

No significant archaeological occurrences were found on within the 40m corridor, however, Stone Age artefacts associated with the rocky outcrops were found to be sensitive and the feature is therefore excluded from the development footprint. The outcrop situated nearest to the 40m road realignment corridor is approximately 1.5km away.

Several memorial sites have been identified Portion 4 of the Farm Scuitklip 92 but not in the 40m corridor proposed for the road realignment. The closest memorial site is approximately 370m from the 40m corridor. Since these sites are not actually graves, a 10m no-go buffer has been recommended.

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

A specialist investigation of the full extent of Portion 4 of the Farm Scuitklip 92 was conducted by the McGregor Museum and assessed both the authorised Paulputs CSP Facility and the road realignment. Through this assessment the heritage features occurring in the broader study area have been identified (refer to **Appendix D3**). It is confirmed that no heritage features are impacted by the proposed realignment of the MN73.

A desktop Palaeontological Impact Assessment (PIA) of the full extent of Portion 4 of the Farm Scuitklip 92 has previously been undertaken by John Pether in 2010⁵. The section of the MN73 road realignment entails shallow disturbance of superficial, geologically young (Quaternary) deposits which have low palaeontological potential and sensitivity and very few fossils have been found in this context. It was concluded that the potential of palaeontological features occurring within Portion 4 of the Farm Scuitklip 92 is low, and that no field surveys and monitoring of bulk earth works would be required (refer to **Appendix J3**).

The rocky outcrops and hills all had some trace of human activity from Stone Age to colonial times, with (from the Later Stone Age) small scatters of ostrich eggshell, quartz flakes and an upper grindstone adjacent to a bedrock grinding surface; a large core (Earlier Stone Age); and two instances of rectangular dry-packed stone walling (colonial). The landscape features are considered as sensitive and a no-go buffer of 60m has been recommended. Stone Age artefacts are considered to be of low sensitivity, but their cumulative significance is higher as the artefacts are particularly focused at these landscape features.

⁵ Pether, J. 2010. Brief Palaeontological Impact Assessment (Desktop Study). Proposed Pofadder Solar Thermal Plant. Portion 4 of the Farm Scuit-Klip 92, Kenhardt District, Northern Cape. 3 December 2010.

Several memorial sites are located below Ysterberg which are regarded as high sensitivity and it is recommended that these memorial markers be respected by way of a 10m buffer zone. These memorials are completely avoided by the realignment of a section of the MN73 and the 40m assessment corridor. The open plains have been found to have sparsely scattered artefacts of which none have been identified within the 40m assessment corridor. Therefore, all these heritage features i.e. memorial sites, rocky features and scattered artefacts have been considered and will not be impacted by the realignment.

The project site straddles a sediment-choked drainage plain crossed by ephemeral, braided stream flows produced in a sheetflood and flashflood sediment-transport regime. Colluvial and Aeolian deposits occur along the drainage-plain margins. The section of the MN73 road to be realigned entails shallow disturbance of these superficial, geologically young (Quaternary) deposits which have low palaeontological potential and sensitivity. Very few fossils have been found in this context in the Northern Cape Province. In view of the low fossil potential of the project site, field surveys and monitoring of bulk earth works by a specialist are not justified.

Will any building or structure older than 60 years be affected in any way?

NO

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

NO

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

A Social Impact Assessment has been undertaken specifically for the section of the MN73 to be realigned and is included as **Appendix D4**.

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

The total unemployment rate in the Khai-Ma Local Municipality (KMLM) is 22.1%. Youth unemployment rate is currently 23.6%. Amongst the population, 4600 people are employed, 1304 people are unemployed, 322 are classified as discouraged work-seekers, and 2327 are not economically active. The unemployment rate is therefore considered high.

Economic profile of local municipality:

Agricultural activities and mining are the main economic activities in the local Municipality. The agricultural sector includes livestock (i.e. cattle, sheep and goat rearing) and flower bulbs farming as well as wool production. The Gariiep River plays a critical role in the region’s agricultural and alluvial diamond mining activities. The highest number of individuals in the Namakwa District Municipality is employed within the agricultural sector; (hunting, forestry and fishing) followed by the mining and quarrying sector. Agriculture is the dominant employment sector within the district and only a small number of people are employed within alternative industries. The two emerging sectors are renewable energy as well as conservation and ecological restoration.

Level of education:

The majority of the adult population (individuals aged 20 years and above) that reside in KMLM have some form of education. However, only 9.8% completed secondary education, with only 1.2% of the population having attained higher education, and 2% had no schooling.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	~R 3 267 000.00
What is the expected yearly income that will be generated by or as a result of the activity?	This activity does not form part of the associated infrastructure of the Paulputs CSP Facility, and as this is an application for a realignment of a public road (MN73), no yearly income will be generated.
Will the activity contribute to service infrastructure?	YES
Is the activity a public amenity?	YES
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	~15
What is the expected value of the employment opportunities during the development and construction phase?	~R 980 100.00
What percentage of this will accrue to previously disadvantaged individuals?	~75%

How many permanent new employment opportunities will be created during the operational phase of the activity?	Zero. This is an existing road which is to be realigned only.
What is the expected current value of the employment opportunities during the first 10 years?	None
What percentage of this will accrue to previously disadvantaged individuals?	None, as this is an existing road which is to be realigned only.

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report (refer to the Ecological Report in **Appendix D1**).

The specialist investigation assessed the study area which includes the area west of the MN73 to be decommissioned and north of the existing Paulputs/Scuitdrift 1 132kV and Paulputs/KaXu Solar 1 132kV power lines and was conducted by Hudson Ecology.

- a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)**

Systematic Biodiversity Planning Category	If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan.
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Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	Ecological Support Areas (ESAs) are less critical areas that still provide valuable habitat and support the CBAs. According to the Khai-Ma Land Use Decision Support tool, the entire study area falls within an ESA. The ESA is listed as a migration route, although the species utilising this migration route are not known. This large mapped unit (i.e. much larger than just the study area) supports a significant number of rare and localised plant species, and provides ecological connectivity in all directions, at a regional scale. All of these factors are reasons for its selection as an ESA.
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b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	74%	Although overgrazed in some areas, the vegetation of the <i>Acacia mellifera</i> – <i>Aristida congesta</i> dune open shrubland and <i>Stipagrostis ciliata</i> – <i>Aristida congesta</i> open grassland can be described as natural vegetation. Generally, this vegetation community contains all the elements that can be expected in natural vegetation in this area.
Near Natural (includes areas with low to moderate level of alien invasive plants)	26%	The <i>Acacia mellifera</i> – <i>Parkinsonia africana</i> wash open shrubland can generally be described as natural vegetation with a low level of alien invasive species.

Degraded (includes areas heavily invaded by alien plants)	0%	No areas of severe infestation of exotic species occur along or within the 40m road realignment corridor.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	0%	No transformed areas occur within the 40m road realignment corridor.

c) Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems			
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)		Estuary	Coastline
	Endangered				
	Vulnerable				
	Least Threatened	YES		NO	

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

The project site is situated within quaternary catchment D81E and is dominated by highly ephemeral river systems (DAAF, 2004). Potential runoff would flow in a north westerly direction towards the Gariep River, while runoff from the elevated portions of the Skuitklip ridges flows in a Northerly direction towards the Kaboep River, which then flows into the Gariep River.

No natural wetlands were observed within the 40m assessment corridor for the MN73 road realignment. There are several dry alluvial watercourses, which only flow during high rainfall events. These systems are highly fragmented by the roads and farming practices undertaken on the property in the past, while the CSP trough plants which have been constructed adjacent to and upstream of the project development area have

now disrupted and diverted any flows within these systems. The significance of this impact at the time of assessing the adjacent CSP projects was low due to the high degree of long-term and historic fragmentation of the system, coupled to the general lack of any important / visible aquatic habitat (Scherman Colloty & Associates, 2016)⁶.

The project site falls within the Karoo Biome and the 40m corridor proposed for the road realignment consists solely of one vegetation type, namely Bushmanland Arid Grassland (i.e. the plains within the Portion 4 of the Farm Scuitklip 42). This vegetation type is classified as Least Threatened.

Bushmanland Arid Grassland occurs on extensive, relatively flat plains and is sparsely vegetated by tussock grasses as well as abundant displays of annual herbs following heavy rain. This vegetation type contains endemic species belonging to the Griqualand West or Gariep Centres of Endemism. At a national scale this vegetation type has been transformed to a slight degree and only small patches are statutorily conserved in Augrabies Falls National Park and Goegab Nature Reserve.

The study area consists mainly of three vegetation communities which includes:

» *Acacia mellifera* – *Aristida congesta* dune open shrubland

This vegetation community is typically covered by sparse open grassland, with *Stipagrostis ciliata* and *Aristida congesta* being the dominant grass species. Due to the deeper soils, as well as soil chemistry and an increased water retention potential, larger *Acacia mellifera* are dominant in this vegetation community, with scattered, drought resistant dwarf shrubs or small trees, e.g. *Rhigozum trichotomum* and *Boscia foetida*. Species of concern found to occur in this vegetation community are the protected species *Aloe dichotoma* and *Boscia foetida* therefore suitability of the habitat for flora and fauna species of concern is high. Ecological integrity of this community is high and the conservation importance of the community is moderate to high.

» *Acacia mellifera* – *Parkinsonia africana* wash open shrubland

The drainage line within the plains of the study area are regarded as a wash, as water will only flow after good rains, and soon they will be dry again. The increased water retention in the underlying substrate allows for the growth of larger individuals of the species *Acacia mellifera* and *Parkinsonia africana*. This wash is wide and sandy, and blend into the landscape, merging with the adjacent grassland vegetation, but are nevertheless visible due to their microtopography and change in species composition.

⁶ Scherman Colloty and Associates. 2012. Water Resources Assessment: Paulputs Concentrated Solar Plant, Northern Cape Province.

The vegetation is often somewhat heterogeneous and with weeds, due to the disturbance of the periodic flooding. Suitability of the habitat for Red Data flora and fauna species is low. The ecological integrity of this community is low - moderate and the conservation importance is low - moderate.

» *Stipagrostis ciliata* – *Aristida congesta* open grassland

The open, sparse grassland is dominated by *Stipagrostis ciliata* and *Aristida congesta*. The shrubby *Rhigozum trichotomum* is prominent on the sandy localities while *Salsola aphylla* is more prominent where calcrete is exposed. Other dominant grass species occurring in this vegetation community include *Stipagrostis obtusa*, *Aristida adscensionis* and, to a much lesser extent, *Fingerhuthia africana* and *Eragrostis lehmanniana*. Suitability of the habitat for Red Data flora and fauna species is high (*Hoodia gordonii* recorded as well as isolated individuals of *Boscia foetida*). The ecological integrity of this community is low - moderate; while the conservation importance of this community is moderate - high.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Volksblad	
Date published	27 February 2017	
Site notice position	Latitude	Longitude
	28°50'56.12"	19°34'54.08"
Date placed	May 2016	

Include proof of the placement of the relevant advertisements and notices (refer to **Appendix E1**).

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.982.

- » A2 Site notices were placed on the farm boundary, adjacent to the access road to the site.
- » A4 notices were placed at the Pofadder Supermarket and at the Pofadder Library.
- » An advert was placed in one local newspaper (Gemsbok) to notify the public of the EIA process and availability of the Basic Assessment Report for review.
- » Focus group meetings were held concurrently with the public participation meetings arranged for the Paulputs CSP Facility. Focus group meeting were held with:
 - Northern Cape Department of Roads and Public Works (DR&PW) – 26 May 2016
 - Mr F Van Der Heever (Neighbouring landowner) – 26 May 2016
 - Mr W Burger (Neighbouring landowner) – 26 May 2016
 - Department of Water and Sanitation – 27 May 2016
- » All impacted and adjacent landowners were contacted telephonically in August 2016. The purpose of these telephonic consultations was to determine whether landowners had any further issues or concerns regarding the proposed road realignment. Some of the concerns raised included the increase of dust that settles on grass and that livestock does not eat dust covered grass.
- » Stakeholder and I&AP issues and comments that have been raised for this Basic Assessment however are included in the Comments and Responses Report in Appendix E3.

Refer to **Appendix E6 and E7** for a record of the consultation undertaken to date. This includes the records of telephone discussions as well as the minutes compiled for the telephonic discussions.

Key stakeholders (other than organs of state) identified in terms of Regulation 40(2)(c) and (d) of GN R.982 (the details of the stakeholders are included in **Appendix E5** - I&AP Database).

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2 (refer to **Appendix E2**; additional proof will be included with the Final BAR). This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

Notification letters sent to key stakeholders will be included in **Appendix E2** of this report.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

All comments received during the review period of the Basic Assessment report, as well as responses provided are captured and recorded within the Comments and Response Report attached as Appendix E.

Summary of main issues raised by I&APs	Summary of response from EAP
DR&PW: How long will the section of the road be that will decommissioned?	Approximately 3km of the road would be decommissioned. The realigned section of the road would be approximately 4km and that the road would be 7m wide within a road reserve of 20m.
DR&PW: What will the displacement be from the existing route alignment?	The route would be realigned around the heliostat field of the planned Paulputs CSP project. The realigned road would be approximately 1km longer than the current alignment.

<p>DR&PW: The wayleave application for requested road deviation would need to be undertaken by the DR&PW in terms of Roads Ordinance (19/1976) – Closing and proclamation of roads.</p> <p>A public participation process is required to be undertaken in terms of this process. Written notices will be issued by the DR&PW to the affected property owner/s as well as property owners located along the MN73 south of the project site. A newspaper advertisement announcing the process will be placed in a local newspaper. I&APs would have 21-days to lodge objections on the application. The realigned road would be declared and gazetted if no objections are lodged by I&APs.</p> <p>The environmental assessment process can run concurrently with the wayleave application process.</p>	<p>It is acknowledged that the NC DR&PW would undertake the wayleave application for the road realignment in terms of Roads Ordinance (19/1976) – Closing and proclamation of roads.</p> <p>The public participation process required for the wayleave application will be undertaken by DRPW. Savannah Environmental has provided the DRPW with the contact details of the affected road users and have also engaged with them as part of this Basic Assessment Process. To date no objections have been received regarding the planned realignment.</p>
<p>DWS: Will drainage lines be impacted on by the proposed road realignment?</p>	<p>An ephemeral drainage line (wash) will be traversed by the road corridor but is considered to be of low significance as this system is highly fragmented by the existing MN73 and other road and past land use practices, and the adjacent KaXu and Xina CSP facilities have now disrupted any flows within this system.</p>
<p>DWS: Who owns the property where the proposed road realignment is to be undertaken?</p> <p>Please note that the proposed activity requires a water use licence in terms of section 40 of the National Water Act (Act 36 of 1998) therefore an application should be submitted to this Department.</p>	<p>The property belongs to KaXu CSP South Africa (Pty) Ltd.</p> <p>It is noted that the realignment of a section of the MN73 will require a water use license in terms of section 40 and section 21 (c) and (i) of the National Water Act (Act 36 of 1998) and an application will be submitted to DWS for approval prior to the commencement of the construction phase.</p>

<p>F Van Der Heever (Adjacent Landowner): I do not have an objection to the road being realigned. It is important that the construction of the new road be done properly and that it is adequately maintained. We are currently experiencing issues regarding stormwater runoff from the existing Abengoa project which floods the Paulputs road when it rains. Proper stormwater management systems must be constructed.</p>	<p>Abengoa are investigating ways in which to address the stormwater runoff on their existing sites.</p> <p>A stormwater management plan will form part of the design documents prepared prior to the construction of the realigned section of road.</p>
<p>Willem Burger (Adjacent Landowner): I have no issues with the development. Will the road realignment remain within the applicant's property? When will construction will start? The MN73 is in a very poor state at the moment.</p>	<p>The road would remain within Portion 4 of the Farm Scuitklip 92. Construction will commence with the construction of the Paulputs CSP Project. After the realignment, the MN73 will be maintained by the DR&PW.</p>
<p>DAFF: The report confirmed the presence of the provincially protected Quiver tree <i>Aloidendron dichotomum</i>. There is currently a Moratorium in place in the Northern Cape, prohibiting removal of this species from the wild.</p> <p>The report stated that there is a high probability that Camel thorn <i>Vachellia erioloba</i> may occur on site. All possible efforts should be made to minimise impacts on protected tree.</p>	<p>The <i>Aloidendron dichotomum</i> Quiver tree was only recorded in the eastern section of Portion 4 of the Farm Scuitklip 92. All individuals of this species were observed outside of the footprint of the MN73 realignment. Therefore this species will not be affected by the development and is complies with the Moratorium which prohibits removal of the Quiver tree <i>Aloidendron dichotomum</i> from the wild.</p> <p><i>Acacia erioloba</i>, also known as Camel thorn <i>Vachellia erioloba</i> has a high probability of occurring in the area, or within the defined corridor. Mitigation measures to minimise impacts on protected tree species have been included within the Environmental Management Programme (refer to Appendix G) as well as within Appendix D1 of the Basic Assessment.</p>

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as **Appendix E3**. Comments received during the public review also form part of this Final BAR submitted to the DENC for review and consideration.

The comments and responses have been captured in a Comments and Response report and attached as **Appendix E3**.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders (refer to **I&AP database contained in Appendix E5**).

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address

Include proof that the Authorities and Organs of State received written notification of the proposed activities – this evidence is provided in **Appendix E3 and E6**.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation 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. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs is included as **Appendix E5**.

Copies of all correspondence and minutes of all meetings and telephonic discussions held are included in **Appendix E6**.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 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. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION AND OPERATIONAL PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts 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. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

1.1 Planning and/or Design Phase

Activities associated with the design and pre construction phase pertains mostly to feasibility assessments undertaken at a desktop level. Geotechnical surveys are usually undertaken in this phase and could result in impacts mainly associated with disturbance of vegetation and soils at localised areas where the development activities are said to commence.

1.2 Construction and Operation Phase/Maintenance

A summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the Construction and Operation/Maintenance Phase of the proposed Project are provided in the tables which follow.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
<i>Ecological impacts</i>			
Construction of the realigned road	<p><i>Direct impacts:</i></p> <ul style="list-style-type: none"> » Disturbance of vegetation and protected plant species » Soil erosion » Alien plant species invasion » Loss of habitat for resident fauna » Effects on local migrations. 	Low	<ul style="list-style-type: none"> » Vegetation clearing is inevitable and unavoidable. Mitigation of this impact can, however, be implemented by keeping the area cleared to a minimum and careful removal and replanting of plants and trees of conservation importance. Seed collection, propagation and re-planting of saplings to make up for lost species should also be considered. » Areas of high conservation importance and/or ecological integrity should be avoided if possible, or kept to a minimum and any species of concern relocated, or demarcated to prevent destruction, before the ground clearing begins. » Ground clearing should take place at the beginning of winter in order to minimise impacts on young of burrowing animals and nesting birds. » The impact of vegetation clearing is likely to be a long term impact, but through careful planning and rehabilitation can be greatly reduced. Topsoil should be stockpiled for revegetation once construction is completed. Search and rescue of species of concern should take place before ground clearing. » A low speed limit can be strictly enforced in order to reduce collisions with animals on the roads during construction phase. » An exotic/invasive species monitoring and management plan should be put in place to manage exotic and invasive species.

			<ul style="list-style-type: none"> » An erosion monitoring and mitigation plan should be put in place to help with the early detection of erosion and advising management on problem areas and remediation plans. » The implementation of a stormwater management plan and the management of stormwater to prevent large volumes of high energy, especially within the road reserve.
	<p>Indirect impacts:</p> <ul style="list-style-type: none"> » Limited biodiversity loss of floral and faunal species » Limited disruption of ecosystem functions i.e. fragmentation » Spillage of harmful or toxic substances » Increased levels of noise, pollution, disturbance and human presence impacting on fauna. 	<p>Low</p>	<ul style="list-style-type: none"> » The spillage of harmful or toxic substances can be mitigated by the implementation of best practice management measures for the storage and handling of all hazardous substances as well as through the implementation of a sound emergency spillage containment plan, which can be implemented as soon as a spill of harmful or toxic substances occurs. » Vibration and noise from heavy machinery can be kept to a minimum by reducing the movement of heavy vehicles to a minimum necessary for construction. » Placing the vehicle yard as close to the construction area as possible will also reduce the scale of impact of vibration. » Dust suppression on roads by water bowsers or the use of other appropriate dust suppressants, if no water is available; » Exposed excavations, disturbed ground surfaces, and unpaved traffic areas can be maintained in a moist condition. » During non-working hours in the construction phase, the site can be left in a condition that will prevent dust from being generated. At the end of each work day, disturbed areas can be wetted down and security

			<p>fencing can be installed and or inspected to prevent access and additional disturbance.</p> <ul style="list-style-type: none"> » Provide temporary cover and daily maintenance for soil stockpiles and keep active surfaces moist. » A temporary decontamination pad and/or a stabilised construction entrance can be provided at active site entrance/egress locations to keep adjacent paved areas clean. » Construction activities should be conducted using methods that minimise dust generation. » The following Best Management Practices (BMPs) can also be followed to help minimise and control dust emissions at the site, during construction of the road. » All on-site traffic can be restricted to specific designated roads. Off-road travel can only be authorised on a case-by-case basis (e.g. access to a remote monitoring well, etc.). Traffic speed can also be restricted to an appropriate level on all designated roads. All designated roads can be considered as high potential dust source areas, and as such, can be a priority for dust controls utilising water and/or gravel.
	<p>Cumulative impacts:</p> <ul style="list-style-type: none"> » Cumulative impacts on vegetation are likely to be very low given the limited expected vegetation clearance. » Vibration and noise from construction will have a significant effect mainly on fauna species. » The construction of the infrastructure would contribute to cumulative habitat degradation, but the contribution would be of low significance. 	<p>Low</p>	<ul style="list-style-type: none"> » As this is the realignment of an existing road, there are unlikely to be increased cumulative impacts.

	<ul style="list-style-type: none"> » Further increase of exotic invasive species. » Cumulative impacts within the surrounding environment due to the increase of erosion which can eventually lead to the loss of vegetation and habitats for fauna species. 		
<i>Impacts on Drainage Systems</i>			
Construction of the realigned road	<i>Direct impacts:</i> <ul style="list-style-type: none"> » Impacts on localised drainage systems (ephemeral wash). 	Low	<ul style="list-style-type: none"> » Any stormwater within the 40m assessment corridor must be handled in a suitable manner, i.e. install stilling basins to capture large volumes of run-off, trap sediments and reduce flow velocities. » A Stormwater Management Plan will be required for a bridge structure over the watercourse, and should be compiled as part of the WULA prior to the commencement of the construction phase of the development.
	<i>Indirect impacts:</i> <ul style="list-style-type: none"> » Reduced functionality of drainage system. 	Low	
	<i>Cumulative impacts:</i> <ul style="list-style-type: none"> » The increase in surface run-off velocities and the reduction in the potential for groundwater infiltration. 	Low	
<i>Heritage impacts</i>			
Construction of the realigned road	<i>Direct impacts:</i> <ul style="list-style-type: none"> » Potential impact on archaeological and historical heritage remains. » Potential impact on palaeontological features 	Low	<ul style="list-style-type: none"> » Artefact densities are zero to extremely low along the road realignment corridor. Identified features occur well outside of the corridor (i.e. the nearest rocky outcrop is situated ~1.5km to the east). Heritage destruction generally has a once-off permanent impact. The significance of the impact is considered to be of low significance. Mitigation measures are not considered necessary.
	<i>Indirect impacts:</i> N/A	N/A	

	<p>Cumulative impacts:</p> <ul style="list-style-type: none"> » Irreplaceable loss of archaeological heritage resources 	<p>Low</p>	<ul style="list-style-type: none"> » A Heritage Monitoring Programme, including a chance find procedure, has been developed and included as Appendix H of the Environmental Management Programme (refer to Appendix G of the Basic Assessment).
<u>Social impacts</u>			
<p>Construction of the realigned road</p>	<p>Direct impacts:</p> <ul style="list-style-type: none"> » Job creation and skills development (positive impact). » Influx of economic seekers » Safety and security impacts » Traffic Impacts 	<p>High (positive) Low (negative)</p>	<ul style="list-style-type: none"> » Efforts should be made to employ local contractors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria, where possible. » Establish a 'labour and employment desk'. » Local businesses should be given priority to enhance employment opportunities for the immediate local area; Pofadder, Onseepkans and Pella. » Recruitment of temporary workers at the gates of the development should not be allowed. A recruitment office should be established by the contractor in a nearby town to deal with jobseekers. » A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process. A Public Complaints register must be maintained, by the contractor and monitored by the ECO, to record all complaints and queries relating to the project and the action taken to resolve the issue. » Working hours should be kept between 6am and 6pm during the construction phase, and/or as any deviation that is approved by the relevant authorities;

			<ul style="list-style-type: none"> » The contractor must ensure that open fires on the site for heating, smoking or cooking are not allowed except in designated areas. » Contractor must provide adequate firefighting equipment on site and provide firefighting training to selected construction staff. » A comprehensive employee induction programme would cover land access protocols, fire management and road safety. This must be addressed in the construction EMP as the best practice. » Cognisance be taken of building lines applicable in terms of Act 21 of 1940, and the road authority being approached for approval where required. » Road signs warning of construction vehicle activity at the access being erected on R357 for the construction phase.
	<p>Indirect impacts:</p> <ul style="list-style-type: none"> » Nuisance impacts in terms of a temporary increase in noise, dust and wear and tear of roads » Economic multiplier effects (positive) » Decrease in safety hazards (positive) » Increased benefits for road users (positive) 	<p>High (positive) Low (negative)</p>	<ul style="list-style-type: none"> » It is recommended that a local procurement policy be adopted by the developer to maximise the benefit to the local economy. » Good and services be sourced from the local area as much as possible; engage with local authorities and business organisations to investigate the possibility of procurement of construction materials, goods and products from local suppliers, where feasible. » Efforts need to be employed to enhance indirect local entrepreneurship opportunities by supporting local entrepreneurs as far as possible. » Dust suppression measures must be implemented for heavy vehicles.

			<ul style="list-style-type: none"> » All vehicles must be road-worthy and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits. » Communication, complaints and grievance channels must be implemented and contact details provided to all impacted and adjacent landowners in the study area.
	<p>Cumulative impacts:</p> <ul style="list-style-type: none"> » Opportunity for local employment opportunities. » Opportunity for local capital expenditure, potential for the local service sector. » Opportunity for local entrepreneurs to develop their businesses. » Possible increase in crime levels (with influx of people) with subsequent possible economic losses. » Increase in traffic disruptions, increased heavy vehicle traffic and safety risks/hazards for road users. 	<p>Low</p>	<ul style="list-style-type: none"> » Goods and services should be sourced from the local area as much as possible; engage with local authorities and business organisations to investigate the possibility of procurement of construction materials, goods and products from local suppliers, where feasible. » Dust suppression measures must be implemented for heavy vehicles.

1.3 The No-Go Option

The no-go alternative is the option of not realigning the section of the MN73 which traverses Portion 4 of the Farm Scuitklip 92 and the authorised Paulputs CSP Facility development footprint.

The current land use of Portion 4 of the Farm Scuitklip 92 includes:

- » Existing KaXu Solar One CSP Facility situated within the southern section of the farm portion (Zoned: Special Solar use);
- » Existing Xina Solar One CSP Facility situated within the southern section of the farm portion (Zoned: Special Solar use);
- » The Paulputs-Scuitdrift 1 132kV and Paulputs-Kaxu Solar 1 132kV power lines traverse the centre of the farm portion (registered Eskom servitude);
- » Paulputs Substation is situated near to the western boundary within Portion 4 of the Farm Scuitklip 92 (Zoned: Light Industrial use);
- » Existing MN73 provincial road traversing the farm portion from south west to north east (within a registered road reserve);
- » Authorised Paulputs CSP Facility situated within the northern section of the farm portion (to be rezoned to Special Solar use).

The remaining extent of the northern section of Portion 4 of the Farm Scuitklip 92 is currently zoned for Agricultural use and will be rezoned to Special Solar use to accommodate the authorised Paulputs CSP Facility. As the road is directly adjacent to the development footprint (i.e. to follow the outside of the heliostat field) of the Paulputs CSP Facility, the remaining section to be rezoned to Special Solar use will include the area where the road realignment is planned.

There is no cultivated agricultural land or any other commercial agricultural activities within the farm portion. Therefore, the no-go alternative is the option of not realigning the section of the MN73 within a farm portion which has already been disturbed by numerous other infrastructure and which will be zoned to Special: Solar Use. The current land uses do not preclude the planned road realignment, predominantly as this is a 4km realignment of an existing road, and not a greenfields development. The need and rationale for the road realignment is to ensure road safety for road users within an area which has become a node for solar energy facilities. The negative impacts of the no-go alternative (that is road user safety on a provincial road relating to line of sight, glint and glare, driver distraction; 4km realignment) are considered to outweigh the positive impact (that is, maintaining the current alignment of the existing road) of this alternative. The no-go option is therefore not preferred. The no-go option is assessed in Appendix F of the Basic Assessment Report.

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.982 must be included as **Appendix F**.

2. 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.

If the recommended mitigation measures listed in Section E below and those contained in the EMPr (refer to **Appendix G**) are applied, the significance of the majority of the impacts will be low with no lasting significant negative environmental impacts arising from the realignment of a section of the MN73 road (construction phase) and/or the operation/maintenance phase.

Road realignment corridor alternative

This section provides a summary of the environmental assessment and conclusions drawn for the proposed Project. This section of the BAR draws on the information gathered as part of the Basic Assessment process and the knowledge gained by the environmental consultant during the course of the process and presents an informed opinion of the environmental impacts associated with the 40m corridor proposed for the section of the MN73 to be realigned. The following conclusions can be drawn from the Environmental Assessment Practitioner's (EAP's) findings and the specialist studies undertaken within this Basic Assessment.

Ecology: Short term impacts (vegetation clearing, dust and vibration and noise) are likely to have a short term increase in negative impacts. The longer term impacts are however likely to be negligible in comparison with the current ecological status quo, as these impacts already exist due to the existing road and its associated impacts. Overall the ecological impact is therefore likely to be of **low significance** and, from an ecological point of view, no fatal flaws are associated with the road realignment within the identified corridor. All impacts that may occur project can be mitigated to an acceptable level.

Drainage Systems: The impact on the hydrological nature of the area will be localised, as a large portion of the remaining farm and the downstream catchment would remain intact. Only one ephemeral drainage line occur within the proposed 40m assessment corridor. This system was highly fragmented by the roads and farming practices in the past while the adjacent projects have now disrupted any flows within these systems.

The significance of this impact at the time of assessing the adjacent projects was **low**, due to the impacts and high degree of fragmentation coupled to the general lack of any important/visible aquatic habitat (Scherman Colloty and Associates, 2016)⁷. No fatal flaws are associated with the road realignment within the identified corridor. All impacts that may to occur project can be mitigated to an acceptable level.

Heritage: The destructive impacts that are possible in terms of heritage resources would tend to be direct, once-off events occurring during the initial construction period. From a heritage perspective, the construction of the proposed road realignment are considered acceptable. The impact on heritage resources is therefore likely to be of **low significance** and no fatal flaws are associated with the road realignment within the identified corridor. All impacts that may to occur project can be mitigated to an acceptable level.

Social Impacts: Social impacts are expected during all phases of the development and are expected to be both positive and negative. Positive impacts are expected to be of **low - medium significance**. Negative impacts associated with the road realignment are expected to be of **low significance**. Impacts can be minimised or enhanced through the implementation of the recommended management measures. From a social perspective, the construction of the proposed road realignment is considered acceptable. No fatal flaws are associated with the road realignment within the identified corridor. All impacts that may to occur project can be mitigated to an acceptable level.

Cumulative Impacts: Cumulative impacts from the proposed road realignment will result from impacts arising from multiple renewable energy facilities (including the construction of access roads) being constructed in the area. Considering the nature and extent of the planned infrastructure, the contribution of this infrastructure to the cumulative impacts in the area are considered to be **low and acceptable**.

Overall conclusion

From the specialist studies undertaken, the route and 40m corridor proposed for the road realignment is considered to be acceptable from an environmental perspective.

Based on the findings of the studies undertaken, in terms of environmental constraints and opportunities identified through the Environmental Basic Assessment process, no environmental fatal flaws were identified to be associated with the construction of the realigned section of the MN73 road. Impacts are expected to be **low** after the implementation of appropriate mitigation and it is recommended that the proposed

⁷ Scherman Colloty and Associates. 2012. Water Resources Assessment: Paulputs Concentrated Solar Plant, Northern Cape Province.

road realignment be implemented to enhance road user safety. Considering the information available at this planning stage in the project cycle, the confidence in the environmental assessment undertaken is regarded as acceptable.

It is the conclusion of the Environmental Assessment Practitioner that the realignment of the section of the MN73 is considered acceptable from an environmental perspective and should be authorised, with the implementation of the recommended mitigation measures.

No-go alternative (compulsory)

This is the option of not realigning the section of the MN73 which traverses Portion 4 of the Farm Scuitklip 92 and the authorised Paulputs CSP facility development footprint.

The current land use of Portion 4 of the Farm Scuitklip 92 includes two CSP facilities; KaXu Solar One and Xina Solar One which situated within the southern section of the farm portion. The Paulputs-Scuitdrift 1 132kV and Paulputs-Kaxu Solar 1 132kV power lines traverse the centre of the farm portion and the existing Paulputs Substation is situated near to the western boundary within Portion 4 of the Farm Scuitklip 92.

The farm portion is also traversed by the existing MN73 provincial road traversing from south west to north east. The remaining extent of the northern section of Portion 4 of the Farm Scuitklip 92 is currently zoned for Agricultural use and will be rezoned to Special Solar use to accommodate the authorised Paulputs CSP Facility which will include the section of the road to be realigned.

There is no cultivated agricultural land or any other commercial agricultural activities within the farm portion. Therefore, the no-go alternative is the option of not realigning the section of the MN73 within a farm portion which has already been disturbed by numerous other infrastructure and which will be zoned to Special: Solar Use. The current land uses do not preclude the planned road realignment and the need and rationale for the road realignment is to ensure road safety for road users within an area which has become a node for solar energy facilities.

The 'Do nothing' alternative is not the preferred option for the project as the negative impacts are considered to outweigh the positive impact (that is, maintaining the current alignment of the existing road) of this alternative. **The 'Do nothing' alternative is, therefore, not a preferred alternative.**

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	
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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.

The construction of the proposed section of the MN73 to be realigned should be implemented according to the conclusions and recommendations of this report and the specifications of the EMPr to adequately mitigate and manage potential impacts associated with construction and operation activities all of which are considered to be of **medium - low significance**. The construction and operation activities and relevant rehabilitation of disturbed areas should be monitored against the approved EMPr, the Environmental Authorisation (once issued) and all other relevant environmental legislation. Relevant conditions to be adhered to include:

Construction Phase:

- » All relevant practical and reasonable mitigation measures detailed within this report and within the EMPr must be implemented.
- » An independent Environmental Control Officer (ECO) should be appointed to monitor compliance with the specifications of the EMPr for the duration of the construction period.
- » The proponent should obtain all necessary permits prior to the commencement of construction.
- » Erosion control measures to be implemented before and during the construction period, including the stormwater control measures. Design and construct roads to avoid concentration of flow along and off the road surface. Design outlet culvert structures to dissipate flow energy, especially where ephemeral wash has been identified.
- » Identification and relocation of plant species (*Hoodia gordonii*) prior to ground clearing. Marking of protected tree species (*Boscia foetida*) to be conserved.

Operation Phase/Maintenance:

» A mitigation and monitoring plan should be put in place to monitor exotic and invasive species in order to report on progress and advice management of measure that need to be implemented. This monitoring should be conducted bi-annually.	
» A mitigation and monitoring plan should be put in place to monitor erosion of the road pavement and demarcated road reserve in order to advise maintenance or management measures that need to be implemented. This monitoring should be conducted bi-annually.	
Is an EMPr attached?	YES

The EMPr must be attached as **Appendix G**.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as **Appendix H**.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in **Appendix I**.

Any other information relevant to this application and not previously included must be attached in **Appendix J**.

KAREN JODAS

NAME OF EAP

SIGNATURE OF EAP

DATE

SECTION F: APPENDICES

The following appendices are attached:

Appendix A: A3 Maps

- » *Appendix A1: A3 Locality Map*
- » *Appendix A2: Layout Map*
- » *Appendix A3: A3 Sensitivity Map*
- » *Appendix A4: A3 CBA Map*

Appendix B: Site Photographs

Appendix C: Facility Illustration(s)

Appendix D: Specialist(s)

- » *Appendix D1: Ecology Report*
- » *Appendix D2: Traffic Report*
- » *Appendix D3: Heritage Report*
- » *Appendix D4: Social Report*

Appendix E: Public Participation

- » *Appendix E1: Advert and Site Notices*
- » *Appendix E2: Stakeholder Correspondence*
- » *Appendix E3: Comment and Responses Report*
- » *Appendix E4: Notification to Authorities*
- » *Appendix E5: I&APs Database*
- » *Appendix E6: Comments Received*
- » *Appendix E7: Meeting Minutes*

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: EAP Declaration and CVs

Appendix I: Specialist Declarations

Appendix J: Additional Information

- » *Appendix J1: Social Report External Review*
- » *Appendix J2: Road Realignment Coordinates*
- » *Appendix J3: Palaeontological Letter and Report*