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Α HERITAGE IMPACT ASSESSMENT CONTRIBUTING TO AN ENVIRONMENTAL IMPACT ASSESSMENT ADDRESSED TO THE NATIONAL DEPARTMENT OF ENVIRONMENTAL AFFAIRS **UNDER SECTION 24 OF THE** NATIONAL ENVIRONMENTAL MANAGEMENT ACT AND **SECTION 38(8) OF THE** NATIONAL HERITAGE RESOURCES ACT **IN RESPECT OF** Α PROPOSED SOLAR ENERGY POWER PLANT AT PORTION 10 (ARRIS) OF FARM NO 2, KORRIDOR WES, NAMAKWALAND, NORTHERN CAPE FOR **RICHTERSVELD SUNSPOT (PTY)**

by

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View of the site, looking east towards the Richtersveld (Photo: Tim Hart, 2014)

Executive Summary

Richtersveld Sunspot (Pty) Ltd proposes to erect a 200 hectare (1720mx1170m) photovoltaic solar energy power facility on Portion 10 (Arris) of Farm No 2, Korridor Wes, Namakwaland, Northern Cape. The site is on land owned by the Richtersveld community; and it is approximately 28 kms east of coast and the nearest town, Alexander Bay, and approximately 8 kms south of the Gariep/Orange River and the diamond concession area running along the banks of the Orange/Gariep currently being mined by the Transhex Mining Company.

The site is in a vast plain which has traditionally been used for communal grazing of goats and sheep by Nama pastoralists for centuries and is in one of the most arid parts of South Africa; while it is not sharply differentiated from those parts of the Richtersveld which are known and protected for their biodiversity, aesthetic, social and cultural significance, it is outside of those areas. Indeed, the site is approximately 13kms west of the Richtersveld World Heritage Site and about 1km outside its buffer zone. Also, because the World Heritage Site and its buffer zone, together, comprise the declared Richtersveld Provincial Heritage Site, the subject site is also outside of that protection; and it is about 35 kms from the closest part of the Richtersveld National Park.

The proposed development triggers both environmental and heritage impact assessments under the National Environmental Management Act and the National Heritage Resources Act. However, because an assessment is being carried out under the former, the relevant heritage resources authority, the Northern Cape Provincial Heritage Resources Authority, is a commenting authority and the national Department of Environmental Affairs is the consenting/deciding authority. Also, given the proximity to the World Heritage Site and its buffer zone to the site, the Director: Protected Areas Planning, Legislation and Compliance of the DEA and the South African Heritage Resources Agency have also been consulted in this process.

Comprehensive advertising of the application with full baseline assessment archaeological, social, visual impact and heritage impact studies satisfying the DEA requirements for EIAs was conducted during the period, 29 August – 10 October 2014 and all necessary state departments were contacted directly. A comment was received from SAHRA recommending that the process advance to the impact assessment phase.

The proposal is welcomed by the affected local community; indeed, the community is the land-owner and is a significant beneficiary of the project.

The assessments and conclusions of archaeology, social and visual impact assessment reports are described in some detail and, given that these assessments all find no adverse impacts and given that there are no heritage resources other than the sense of place of this dramatic landscape which is, in effect, surplus to the very extensive protected areas, I conclude, notwithstanding a significant change in the sense of place, that the significance of this site and its sense of place is not sufficient to warrant regulation (other than the mitigation of night-time 'sky glow').

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1 INTRODUCTION

Richtersveld Sunspot (Pty) Ltd proposes to erect a 200 hectare (1720mx1170m) photovoltaic solar energy power facility including approximately 2000 'trackers' on Portion 10 (Arris) of Farm No 2, Korridor Wes, Namakwaland, Northern Cape. The 200 hectare site in question is approximately 28 kms east of the nearest town, Alexander Bay on the coast, and approximately 8 kms south of the Gariep/Orange River and the diamond concession area being mined by the Transhex Mining Company; and the site and all of the surrounding land is owned by the Richtersveld community. The site is **not** within any of the several nearby environmentally and culturally sensitive areas which include the Namakwaland World Heritage Site (13 kms away) and Buffer Zone (1 km), the Richtersveld National Park (35 kms away), the DEA-regulated Critical Biodiversity Area (although a section of the overhead powerline runs through it), the proposed expanded Orange River Mouth Conservation Area, and the Orange River Mouth RAMSAR area.

The proposal triggers both environmental and heritage impact assessments under the National Environmental Management Act (NEMA) under the National Heritage Resources Act (NHRA) respectively.

I was commissioned to compile, first, a *Heritage Impact Assessment (Baseline Assessment) Report* in compliance with the requirements of both of these Acts and incorporating the assessments and findings of other scoping or baseline specialist studies carried out as part of the same process including, in particular, a social impact assessment by Tony Barbour, an archaeological assessment by Tim Hart, and a visual impact assessment by Bridget O'Donahugue. These several baseline assessments were all incorporated into Cape Environmental Assessment Practitioners' (Cape EAP) *Final Scoping Report & Plan of Study for Environmental Impact Assessment*, dated 15 October 2014.¹

That baseline or scoping phase has now been completed, but, a process-related comment from SAHRA (dated 5 January 2015) apart, no substantial heritage-related comment has been received.

I am now required to compile a final HIA report reliant on the now completed social impact assessment by Tony Barbour, the archaeological assessment by Tim Hart, and the visual impact assessment by Bridget O'Donoghue (these reports are all dated January 2015). This is that report, compiled as a component of the Final Environmental Impact Assessment to be compiled by Cape Environmental Assessment Practitioners (Pty) Ltd.

2 ASSUMPTIONS, LIMITATIONS AND CREDENTIALS:

2.1 Assumptions:

It is assumed that the data regarding the proposed 200 hectare (1720mx1170m)

¹ Cape Environmental Assessment Practitioners (Pty) Ltd, dated 15 October 2014, *Final Scoping Report* & Plan of Study for Environmental Impact Assessment for Richtersveld Solar Project on Portion 10 (Arris) of the Farm Korridor Wes No 2, Portion 9 of the Farm Koridor Wes No 2 and Remainder of Farm Groot Derm Farm No 10 (Namakwaland District).

photovoltaic solar energy power facility provided by Richtersveld Sunspot (Pty) Ltd is accurate and up to date.

2.2 Limitations:

While I have visited the site and traversed it and its surroundings for some kilometres on foot, this report relies in large part on the analytical work and assessments detailed in the specialist social impact, archaeology and visual impact reports compiled by Tony Barbour, Tim Hart and Bridget O'Donoghue respectively; and on written accounts (photographic illustrations) of interactions with the Richtersveld community provided by Richtersveld Sunspot (Pty) Ltd.

2.3 Credentials and Independence:

I am a registered Architect (CIfA, SAIA and SACAP), an associate Planner (SAPI) and an accredited Professional Heritage Practitioner (APHP); and I have degrees in architecture (B Arch, Cape Town), heritage (equivalent to an M Phil, Rome) and heritage/planning (PhD, Cape Town).

I confirm that I have no vested or financial interest in the proposed development or in the outcome of this and the associated impact assessments or any associated applications.

3 LEGAL FRAMEWORK:

3.1 National Environmental Management Act (NEMA) and the National Heritage Resources Act (NHRA):

The proposed development, a 200 hectare (1720mx1170m) photovoltaic solar energy power facility, triggers both environmental and heritage impact assessments under the National Environmental Management Act (Section 24 and Regulations GN No R543, R544 and R546) and the National Heritage Resources Act (Section 38). However, because an assessment is being carried out under the former Act, NEMA, in respect of electrical power supply the relevant heritage resources authority, the Northern Cape Provincial Heritage Resources Authority, is a commenting authority (as provided for in Section 38(8) of the NHRA) and the national Department of Environmental Affairs is the consenting/deciding authority. The development site is not inside the very large Northern Cape Provincial Heritage Resources Authority's declared Richtersveld Provincial Heritage Site;² but, given the proximity of the site (just more than a kilometre) to the PHS, the Northern Cape Provincial Heritage Resources Authority was approached for comment on this as well as a consequence of the Section 38-trigger.

The requirements regarding consultation of interested and affected parties and of any state bodies who may have had an interest have been satisfied during the baseline or scoping phase of the EIA process; and these steps and the responses of various parties are described in Section 5, Consultation of Interested and Affected Parties and of State Bodies below.

²

The declared PHS is exactly contiguous with the Namakwaland World Heritage Site.

3.2 Nearby Protections Not Triggered:

Given the relative proximity to the Namakwaland World Heritage Site and its Buffer Zone, the Director: Protected Areas Planning, Legislation and Compliance of the DEA and the South African Heritage Resources Agency were both consulted in this process. However, I note that the Director: Protected Areas Planning, Legislation and Compliance of the DEA was consulted before the scoping phase commenced in order to confirm the position of the proposed development relative to the boundary of the World Heritage Site and its Buffer Zone; and this confirmation (dated 27 May 2014) is appended to this report as Annexure A.

Furthermore, Cape Environmental Assessment Practitioners, the EAP responsible for this process, has confirmed that the site is outside of the DEA-regulated Critical Biodiversity Area (although a section of the overhead powerline runs through it), the proposed expanded Orange River Mouth Conservation Area, and the Orange River Mouth RAMSAR area.

3.3 Land Use Planning Ordinance and Local Zoning Scheme:

An application to the local authority is to be made in due course under Section 17 of the Land Use Planning Ordinance to rezone the site from Agricultural Zone I to Special Zone (Renewable Energy Resource - Solar Energy Infrastructure) to enable this facility. This report does not deal with that process.

4 THE SITE AND THE ENVIRONS:

The 200 hectare site in question is on Portion 10 (Arris) of the 12 241 hectare Farm No 2, Korridor Wes, in the Richtersveld, Namaqualand. This farm is a part of the very considerable communal land holdings owned by the Richtersveld SIDA!HUB Communal Property Association (CPA). The site is 28km east of Alexander Bay and approximately 8km from the Gariep/Orange River. I note that the World Heritage Site Core Area, which is some 13 kms to the west (at its closest point), comprises approximately 160 000 hectare; and its Buffer Zone, a little more than one km to the west of the site, comprises another approximately 398 500 hectare. In other words, the WHS and its buffer zone comprise more than 550 000 hectare; and this site is distant from and incomparable in size with the protected parts of this landscape.

The site, some 7 or 8kms from the hills in the west and 1km from another low flat ridge to the east, falls approximately 3m from east to west. It is sparsely vegetated and its use is for infrequent grazing for small livestock (goats and sheep). There are no buildings on the site or within sight; and it is crossed by numerous informal vehicle tracks resulting, presumably, from the access of construction vehicles supplying fences and other infrastructure within the region. The hills referred to are even more sparsely vegetated than this relatively flat plain.

The site is more comprehensively described in Bridget O'Donoghue's visual impact assessment.

This site and its immediate surrounds are undifferentiated from the rest of the cultural landscape occupied by the Nama people of the Richtersveld. The transhumance patterns of life of these people are a living but ephemeral living and

intangible heritage which flows seamlessly across the landscape leaving almost no imprint.



Illustration 1: Location of the site (circled yellow rectangle) showing its relationships with its environs

5 THE PROPOSED PHOTOVOLTAIC SOLAR ENERGY POWER FACILITY:

5.1 The Power Facility Itself (SEF):

The proposed 75mw Richtersveld Solar Energy Power Facility (SEF) will consist of CPV (concentrator photovoltaic) Flatcon technology with precision dual axis tracking with approximately 2000 trackers (see Illustration 2). The panels of the trackers are approximately 7,5mx13,3m which stand 8,1m high when vertical at dawn (see Illustration 3) but, as the sun rises and moves across the sky, these tracker-panels gradually revolve horizontally following the sun and vertically to a nearly horizontal position at noon approximately 4m high.³

CPV technology differs from conventional photovoltaic (PV) technology in that use is made of lenses to concentrate light energy, thereby enabling a more efficient harvesting of solar energy. The CPV technology involves the use of FLATCON[®] CPV Modules manufactured by Concentrix Solar. The primary infrastructure units associated with CPV technology are called "CPV Systems" or "trackers", which are designed to track or follow the path of the sun. The panels are translucent and constantly move throughout the day (allowing for vegetation to grow underneath them), and do not create reflections other than directly back to the sun.



Illustration 2: A photomontage showing a 50mw solar energy power facility of the sort proposed set in the subject landscape (illustration supplied by Richtersveld Sunspot)

³ Interestingly, a similar facility erected recently by Soitec near Touwsrivier is almost unnoticeable during mid-day when the panels are horizontal.



(illustration supplied by Richtersveld Sunspot)

This SEF facility will also require some small infrastructure components such as a sub-station, workshop, control room, a small office, and a security fence with closed circuit television (CCTV) cameras around the site (see Illustrations).

The construction phase for a 75MW SEF is expected to extend over a period of 14-18 months and create approximately 300 employment opportunities. The operational phase will employ approximately 53 people full time for a period of up to 20 years.⁴

The applicant has engaged with the landowners, the Richtersveld SIDA!HUB Communal Property Association, and its constituent membership and obtained their support for the project. The lease option was signed and approved at the CPA AGM in June 2013. The potential benefits to the Community Property Association (CPA) include employment opportunities, income generation, support for local entrepreneurs as well as training and education through the project. Additional income to the CPA include rental for a period of 20 years, as well as a shareholder system whereby the CPA will own at least 10% of the Project Company.

5.2 The Overhead Powerline:

The energy will be fed into the Eskom grid (the project is an "Independent Power Producer (IPP) project"). There are three alternative routes for the necessary overhead powerlines required to connect the SEF to nearby ESKOM substations:

- In a straight line north-west from the facility to the Oranjemund sub-station which is 17.5km away (Option1);
- In a nearly straight line north-east from the SEF to the Beesbank sub-station near the mining operations about 7km away (Option2);

⁴ Richtersveld Sunspot (Pty) Ltd

 Following the same line that the existing 66kV Eskom line which runs close to the site in question and connects to the Oranjemund sub-station (this option has been approved by ESKOM) (Option3). Indeed, ESKOM do already have a servitude lease agreement over this alignment.

These three alternatives have been assessed by each of the impact assessors and it is clear that Option 3 which follows/replaces an existing overhead line has little or no heritage-related impact of any sort is favoured. I have, therefore, not addressed this issue.

6 CONSULTATION OF INTERESTED AND AFFECTED PARTIES AND OF STATE BODIES:

The leasor/applicant company, Richtersveld Sunspot (Pty) Ltd, interacted iteratively for more than a year with community groups in Eksteenfontein, Lekkersing, Sanddrift, Kuboes and Alexander Bay to ensure that all components of the affected community/land-owning community, the Richtersveld SIDA!HUB Communal Property Association (CPA), are aware of the details of the proposal and its impacts, be they economic, social, visual or other.

Most formal of these communications were a series of presentations by Richtersveld Sunspot to the community groups in each of these towns⁵ during the week before their community AGM on 29 June 2013. The meetings were advertised by fliers and by word-of-mouth in advance; and attendance registers were taken at each of the meetings where a demonstration solar panel, solar cell and posters showing the technology, the location and size of the SEF facility, and the powerline connection to the ESKOM grid were made clear. The Ministry of Energy's RE IPP procurement process was also explained focusing on the mandatory economic development qualification criteria. The presentations included Afrikaans translations.⁶

At each meeting the issues were introduced by a SIDA!HUB CPA Committee Member, Edwin Farmer, and the following was discussed and questions were encouraged:

- 1. The solar facility idea and how it works;
- 2. The solar facility size, visual impression, location on their land;
- 3. The solar facility development process and the government RE IPP programme;
- 4. The proposed socio-economic development processes, enterprise development and the community trust requirements in the RE IPP programme (scorecards, thresholds and targets) 30% of tender evaluation weighting, 70% electricity price;
- 5. The environmental impact assessment process;
- 6. The managing of expectations and having to first win the tender;
- 7. The opportunities and benefits to South Africa and to the local community;

⁵ Photographs of the community meetings are included in Cape EAP, op.cit. Annexure E.

⁶ Richtersveld SIDA !Hub Communal Property Association: Extracts of the Minutes of the Special General Meeting of the Members of the Association, Held at Kuboes on 29.06.2013.

- 8. Those concerned or with objections were told of the channels for addressing those concerns or objections and how they could become formal Interested and Affected Parties; and
- 9. Everyone was invited to the voting at the AGM the following Saturday, 29 June 2013.

The feed-back from the CPA members was very positive; and they embraced the opportunity arguing that the proposal involved and would be visible within a tiny fraction of their land-holdings, would have no impact on the environment, and was far from the most significant parts of their holdings and the main tourist areas. It was also recognized that the continued income and 10% share in the project ownership would provide considerable opportunity to the community.⁷ Illustrations and documentation is appended to this report in Annexures B to F.

Comprehensive advertising of the application with full baseline assessment archaeological, social, visual impact and heritage impact studies satisfying the DEA requirements for EIAs was conducted during the period, 29 August – 10 October 2014. This included newspaper advertisements in *Die Plattelander*,⁸ notices were placed in the library and municipal offices in Port Nolloth; and all registered interested and affected parties (I note that the 26 persons listed, with the exception of three members of the SIDA!HUB CPA and one other party, are all representatives of local, provincial or national government departments) were advised of the availability of the documentation on the Cape EAP website.⁹

Furthermore, the following state bodies with heritage-related powers and responsibilities were given the documentation:

SAHRA, application logged on 4 September 2014:

SAHRA, responding in an Interim Comment dated 5 January 2015, commented as follows:

- 1. that SAHRA is satisfied with the scoping phase of the assessments;
- 2. that the visual impact be assessed;

3. that "a social consultation process that specifically deals with the impact on heritage resources must be undertaken... (and) submitted to the responsible heritage authority";

4. that a "chance find procedure" for palaeontology must be developed and submitted to the heritage authority for approval";

5. that no archaeological resources had been identified and that the existing power servitude would result in the least impact;

6. that the process should proceed to the impact assessment phase.

I note that the EAP, Cape Environmental Assessment Practitioners, insist that Bridget O'Donoghue's scoping/baseline visual impact assessment was submitted to SAHRA with the other scoping reports on

⁷ Email dated 23/7/2014 from Mark Bleloch, Richtersveld Sunspot (Pty) Ltd; and the documentation of this roadshow was submitted by hand to me on 23 January 2015.

⁸ Die Plattelander, 13 June 2014.

⁹ See Cape EAP, op.cit. Annexure E.

4 September 2014; and her final assessment report has now been completed and will be submitted to the authorities.

Tim Hart has drafted a "palaeontology chance find procedure" and this will be included as a component of the Construction Phase EMP.

With respect to SAHRA's request that "a social consultation process that specifically deals with the impact on heritage resources must be undertaken... the results of which must be submitted to the responsible *heritage authority*", I have discussed this at length with the responsible SAHRA official and argued that such a survey would serve no purpose at this juncture in this case. Indeed, given the process of negotiation Sunspot engaged in with the community including the several meetings held with the different community groups and the presentation at the community AGM in June 2013 and given Tony Barbour's interactions with the community as part of his baseline/scoping social impact assessment, it would be irritating to the community to be shown the same images, hear the presentations, and be asked the same questions but now with a new focus on "heritage" (whatever that would mean to them); and that having to carry out such a survey now would be onerous and time-consuming for the community who will have to congregate at various places. Indeed, asking the community to engage in such a process now would be counter-productive and very frustrating to the community. It may even be perceived to be insulting to them. Given this, I argue that, in the circumstances, such an additional process would be overly cautious.

My impression was that the official accepted this; and required that all of the documentation with all of the details of the meetings, presentations, minutes, interactions with the community be attached to the HIA and that an adequate account of all these consultative interactions with the community be given. Such documentation is attached in Annexures A to E.

- Northern Cape PHRA, application sent No response to date
- The Director: Protected Areas Planning, Legislation and Compliance, national Department of the Environment, application sent

Confirmed that the site is outside the WHS Buffer Zone (27/5/2014); but has not commented further.

In effect, notwithstanding these considerable efforts to solicit comment, the Interim Comment from SAHRA apart, no comment has been received from any party in respect of any heritage-related aspect of the proposal or its potential impacts.

7 STATEMENT OF SIGNIFICANCE:

The subject site is a relatively small relatively flat site set in a vast plain, 8 kms from the Gariep/Orange River and some 7 or 8 kms from low hills to the west, 1 km from a

low flat ridge to the east and a hill 3 kms to the south, falling approximately 3m from east to west. It is sparsely vegetated and it is used for infrequent grazing for small livestock (goats and sheep). There are no buildings on the site or within sight; and it is crossed by numerous informal tracks. The hills referred to are even more sparsely vegetated than this relatively flat plain.

Although the site is not differentiated from or separated from the Namakwaland World Heritage Site and its Buffer Zone in any clear or distinct way and the proposed SEF will, therefore, be visible from within the Buffer Zone, its high-tech character and distinctness in this environment will make it eye-catching; although, as has been demonstrated by the recently erected Soitec facility near Touwsrivier, in certain circumstances when the light is dull or when glare is high, the panels are almost invisible. And, while the occasional passing shepherd and the very occasional tourist exploring the area well off the beaten path may be surprised by its appearance and it will certainly have an effect on the significance of this almost unremittingly and starkly bleak landscape, it is difficult to say or argue that the significance of the environs will be adversely affected. Indeed, the very sharp contrast between the SEF and its setting may well accentuate the significance of the environs and of the nearby Provincial and World Heritage Site with its Core and Buffer Zones.¹⁰

It must be emphasised, however, that the site is outside any part of any of the environs being prized and protected. Indeed, the Wold Heritage Site has a Buffer Zone which is devised to protect it precisely by distancing the environs which are worthy of protection from the surrounding area which can tolerate change: this site is beyond the limits of the Buffer Zone.

I note that the living heritage and transhumance life-style of the owner-community described in the baseline archaeology report is certainly a heritage-related issue and this life-style is certainly of considerable interest and significance. However, given that the owner-community has been consulted at some length and is fully supportive of the development proposal and given that they are the appropriate judges of the effects of the proposal on their heritage and life-style, I do not presume to assess or to analyse the potential impacts beyond what has been discussed in Barbour's social impact assessment.

8 THE KEY ISSUES AND POTENTIAL IMPACTS:

8.1 Archaeological Issues and Findings:

The key archaeological and palaeontological issues identified and findings outlined by Tim Hart in his archaeology impact assessment report¹¹ are as follows:

¹⁰ This remark is not made casually or facetiously: debate in the United Kingdom regarding the visual impacts of wind farms includes both proponents who argue that the impacts are positive and encourage tourism for being "aesthetically pleasing, 'green' symbolism" and opponents who argue that the impacts are "aesthetically damaging, destroy 'naturalness' and threaten tourism". See, for example, Warren, Charles and Richard Birnie, 2009, p108, "Re-powering Scotland: Wind Farms and the 'Energy or Environment' Debate", *Scottish Geographical Journal*, Vol. 125, No 2, pp97-126, June 2009.

¹¹ This section of this report is in large part reliant on Hart, Tim, January 2015, *Archaeological Impact Assessment: Proposed Richtersveld Solar Facility (Richtersveld Sunspot): Richtersveld Community Reserve.*

8.1.1 Palaeontological issues regarding the site and surrounds:

According to the SAHRA palaeontological sensitivity overlay the study area lies with the "blue" zone indicating that the proposed project area has very low palaeontological sensitivity. No paleontological impact assessment is required.¹²

8.1.2 Living heritage: The Nama

The archaeology of Namaqualand is long and complex, covering the entire time span between up to a million years ago to the present day. The archaeology of the last 5000 years is particularly interesting with human occupation of these arid areas pulsing with variations in climate. Namaqualand boasts possibly the longest unbroken record of human settlement in South Africa in that Nama speaking herders who practise traditional lifestyles in the area are immediate descendants of Khoekhoen populations who first introduced stock keeping and ceramics making into southern Africa more than 2000 years ago.

Historical accounts up until 1913 suggest that Nama-speakers were living very much like their ancestors of centuries before following a seasonal transhumant cycle, meaning that they are not properly nomadic but tend to use a specific area on a seasonal basis. There is no clear indication of specific boundaries, and early traveller's record meeting with Nama groups as far south as Steinkopf. While pastoralism did allow for larger herder settlements, historic accounts suggest that the dry Northern Cape could not support the group sizes of several hundred observed further to the southwest. Since population density was low, there was little competition for land. Villages or kraals were centered on certain important water holes - the presence or absence of water was the first consideration when planning a move to a new area. Certain families, through time, came to be associated with a certain area.

Each herder settlement consisted of male members of the same patri-clan, with their wives and children. All the settlements (or kraals) in a given area were often part of the same tribal structure, owing allegiance to the most senior member or captain. These chiefs decided, together with senior members of the village on when and where to move, and they gave permission to *outsiders who* wished to enter their area to use their resources. However, ultimately, economic survival depends on flexibility and reciprocity.

The definitive account of the social organisation of the Nama-speaking Khoekhoen is that of Winifred Hoernle who travelled through the region in 1912 and 1922/3. Khoekhoen society emphasized various rituals which took place at times of transition in an individual's life, such as birth, puberty, marriage and death. Water was associated with the concept of *!nau* (danger or vulnerability) which occurred during these periods of transition. Water was therefore used in many ceremonies, including that of rain making, initiation, birth, etc. Men and women had different tasks in ceremonies and in society. Interestingly, there are many indications that women exerted considerable authority within the household but they could also own and inherit stock and on rare occasions become regents or temporary chiefs.

The villagers of Kuboes, for example, moved to the Gariep River in summer and to a

¹² Ibid. p12.

variety of winter locations such as Springklip and Jakkalsputs. This type of information, which is readily available, can assist when interpreting archaeological deposits and determining prehistoric seasonal patterns.

While resources were often shared, there was also the understanding that certain groups or individuals had rights to particular resources (such as a honey nest) and that permission had to be obtained to use them. Ethno-botanical research by Archer (1994) has focused on the indigenous plant use of the descendants of the Namaspeaking Khoekhoen of the area. Knowledge on plant resources has declined during the 20th century and it is only the rural poor who use plants to supplement their diet, for medicinal purposes and in domestic architecture. She has identified at least 75 different, edible plant species many of which are used by children as snacks. At least 45 different plants are used as medicines, some are common knowledge while others are only used by herbalists and healers. At least 22 different plants are used for utilitarian purposes including the construction of the traditional *matjiesbuis*, in leatherwork, in making soap and in making household items.

The original inhabitants of the area (the San and the Nama) spoke related but different languages. San is no longer spoken although some 6000 Nama speakers are still found in the Northern Cape. The South African San Institute (SASI) was founded in 1997 to research and protect the rights of indigenous minorities like the Khoe and San. During land claims investigations, SASI discovered 11 fluent southern San speakers in the Northern Cape, meaning that this language is effectively extinct. Crawhall, a sociolinguist who works for SASI has identified 6000 Nama speakers and has been concerned with the continued survival of this language.

Today there is dissent among the members of the Richtersveld community as the recent awarding of land to the indigenous inhabitants has created a plethora of management and leadership problems in a community who survival has depended very old traditional values for hundreds of years.¹³

Within the Study Area today is evidence active or recently active stock posts. Although the '*matjiehuisies*' are no longer built of traditional materials, they are rendered in modern materials and the style and size of the encampments follow traditional form. The stock posts are actively used indicating the people are practising traditional herding activities in the area today.¹⁴

8.1.3 Archaeological findings in respect of the proposed site:

The proposed site for the solar energy facility lies in a flat and almost featureless plain. The overall setting is however spectacular as the distant Richtersveld mountains form a backdrop to this wide open wilderness area. Within the project area there are no rocky outcrops or dunes, or even any erosion features apart from a few sheet wash areas (pans). It is also sparsely vegetated. Outside the study area, several hundred metres to the west, is a dis-used wind pump, dam and stock post the only built elements in the vicinity. The road to the project site is an informal track which diverges into as many as three parallel tracks as road users take shortcuts at

¹³ Ibid. p17. I note that this remark by Hart is not sourced.

¹⁴ Ibid, pp15-17.

will to avoid ruts or sand accumulations.

The survey was undertaken in two stages, initially Hart and Webley surveyed the initially proposed 100 hectare 50kW site and later Halkett and Kendrick surveyed the remainder to make up the 200 hectare 75kW alternative.

The surveys revealed that the site is of minimal heritage significance in terms of archaeology: the only archaeological occurrences being thin scatters of flaked and fractured quartz without associated organic material. Formal artefacts were not noted and the quartz is a-diagnostic in terms of assigning secure cultural affiliations. Only one archaeological site of medium significance was recorded: this was a spatially intact quartz scatter and an associated broken ostrich eggshell. This little site is easily mitigated through archaeological collection if the development proposal is approved. A single Nama shelter was recorded in the study area. This consisted of a small brush windbreak and covering of brush supported on small poles. The presence of a few rusty tins suggest that it was probably erected a few years ago and had been recently occupied.

No archaeological sites of any kind were noted on any of the proposed power line alternatives. Proximity to water was such a critical issue in this landscape, that the majority of archaeological sites were located within 1 km of the permanent waters of the Gariep River.¹⁵

8.2 Social Issues and Potential Impacts:

The key social issues identified and the findings outlined by Tony Barbour in his report¹⁶ (in that they could have an impact of heritage-related issues) are as follows:

8.2.1 Policy and planning issues:

Solar energy is strongly supported at a national, provincial and local level. At a national level the White Paper on Energy Policy (1998) notes that renewable resources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future; and that the support for renewable energy policy is guided by a rationale that South Africa has a very attractive range of renewable resources, particularly **solar** and wind, and that renewable applications are the least-cost energy source in many cases; more so when social and environmental costs are taken into account. Further, the IRP 2010 allocates 43% of energy generation in South Africa to renewables, while the New Growth Path Framework and the National Infrastructure Plan both support the development of the renewable energy sector.

At a provincial level the NCPGDS and the NCSDF both support the development of the renewable energy sector. The RLM IDP also supports the establishment of renewable energy projects as a key economic opportunity. The findings of the review of the relevant policies and documents pertaining to the energy sector therefore indicate that solar energy and the establishment of solar energy facilities are supported at a national, provincial, and local level. It is therefore the opinion of the

¹⁵ Ibid, p18.

¹⁶ This is section relies largely on the Summary of Key Findings, ppiii-vi, and on several of the detailed sections within the report itself, in Barbour, Tony, January 2015, *Social Impact Assessment for Richtersveld 75mw Solar Energy Facility, Northern Cape Province*.

authors that the establishment of a SEF in the area is supported by national, provincial and local policies and planning documents.

8.2.2 Construction phase impacts:

The key social impacts likely to be associated with the construction phase include:

Potential positive impacts:

Creation of employment and business opportunities, and the opportunity for skills development and on-site training.

The construction phase for a 75 MW SEF is expected to extend over a period of 12-18 months and create approximately 300 employment opportunities, depending on the final design. Of this total ~60% (180) will be available to low-skilled workers (construction labourers, security staff etc.), 25% (75) to semi-skilled workers (drivers, equipment operators etc.) and 15% (45) to skilled personnel (engineers, land surveyors, project managers etc.). The total wage bill for the construction phase is estimated to be in the region of R 45.6 million (2014 rand value). This is based on the assumption that the average monthly salary for low skilled, semi-skilled and skilled workers will be in the region of R 5 000, R 8 000 and R 30 000 respectively for a period of 16 months. The majority of the employment opportunities, specifically the low and semi-skilled opportunities, are likely to be available to local residents in the Richtersveld area. The majority of the beneficiaries are likely to be historically disadvantaged members of the community. This would represent a significant positive social benefit in an area with limited employment opportunities. However, in the absence of specific commitments from the developer to employ local contractors the potential for meaningful skills to local employment targets the benefits for members from the local communities may be limited. The sector of the local economy that is most likely to benefit from the proposed development is the local service industry linked to accommodation, catering, cleaning, transport and security, etc associated with the construction workers.

Potential negative impacts:

Impacts associated with the presence of construction workers on site and in the area; increased safety risk to local farmers and community and risk of stock theft as a consequence of the presence of construction workers; impact of vehicles, including damage to roads, safety, noise and dust.

The majority of these potentially negative impacts can, however, be effectively mitigated if the recommended mitigation measures are implemented. In addition, given that the majority of the low and semi-skilled construction workers can be sourced from the local area the potential risk to local family structures and social networks is regarded as low. However, the impact on individuals who are directly impacted on by construction workers (and who may, for example, contract HIV/ AIDS) was assessed to be of Low negative significance to the community as a whole but of Medium-High to individuals.

8.2.3 Operational phase impacts:

The key social issues affecting the operational phase include:

Potential positive impacts:

Creation of employment and business opportunities and for skills development and training; benefits associated with the establishment of a Community Trust.

The total number of permanent employment opportunities is estimated to be in the region of 52. Of this total ~35 are low skilled workers, 15 semi-skilled and 2 skilled. The annual wage bill for the operational phase will be ~R4 million (2014 Rand value). The majority of the beneficiaries are therefore likely to be historically disadvantaged members of the community. Given the location of the proposed facility the majority of permanent staff is likely to reside in the local settlements in the vicinity of the site.

The establishment of the Community Trust also creates an opportunity to support local economic development in the area providing a steady revenue stream that is guaranteed for a 20 year period. The revenue from the proposed SEF can be used to support a number of social and economic initiatives in the area, including: creation of jobs; education; support for and provision of basic services; school feeding schemes; training and skills development; and support for SMME's. The long term duration of the revenue stream associated with a SEF linked Community Trust also enables local municipalities and communities to undertake long term planning for the area. Experience has however also shown that Community Trusts can be mismanaged. This issue will need to be addressed in order to maximise the potential benefits associated with the establishment of a Community Trust.

The proposed development also represents an investment in infrastructure for the generation of clean, renewable energy, which, given the challenges created by climate change, represents a positive social benefit for society as a whole.

Potential negative impacts:

Barbour lists the potential loss of productive agricultural land,¹⁷ a potential impact on tourism,¹⁸ and visual impacts and associated impact on the sense of place as potential negative impacts. But he does also say that these potentialities are of Low Significance and that all of the potential negative impacts can be effectively mitigated if the recommended mitigation measures are implemented.

My own assessment is a little different (but not significantly so):

First, referring to "productive agricultural land" is misleading as the land is neither productive nor agricultural. Second, it is difficult to imagine any impact on tourism.

Barbour also points out that the visual impacts on landscape character associated with renewable wind-energy facilities have been raised in Australia and Scotland and highlighted by Warren and Birnie.¹⁹ In the South African context, the majority of South Africans have a strong connection with and affinity to the large undisturbed open spaces that are characteristic of the South African landscape. In this I concur and, while the new national anthem refers to the sky, the sea, the mountains and

¹⁷ Ibid. p62.

¹⁸ Ibid. p64.

¹⁹ The debate referred to here is set in Scotland and in respect of wind turbines which are very much more obtrusive in any environment than are solar facilities like the one proposed here. See Warren and Birnie, op.cit.

echoing emptiness, the old anthem specifically identified the "ver verlate vlaktes" as a landscape element significant in the national sense of identity and it would appear that this was omitted in the interest of length only. Consequently, given the growing number of solar (and wind) energy applications, the impact of such plants on the landscape is likely to become an important issue in the future. However, in the case of this proposed Richtersveld facility Barbour argues that the impact on the area's sense of place is likely to be low to insignificant.

I note that Barbour refers to "recommended mitigation measures" and suggests that those recommended in the VIA be implemented (pertaining to night-lighting).²⁰

8.2.4 Conclusions in respect of social impacts:

Barbour concludes²¹ that the development of the proposed facility will create employment and business opportunities for locals during both the construction and operational phase of the project; it will create a significant source of much needed revenue for the Richtersveld CPA from the lease of the land; and the establishment of a Community Trust will also benefit the local community. Further, the establishment of renewable energy facilities in the RLM will create socio-economic opportunities, which, in turn, will result in a positive social benefit. The significance of this impact is rated as High Positive.

The proposed development also represents an investment in clean, renewable energy infrastructure which, given the challenges created by climate change, represents a positive social benefit for society as a whole. The establishment of the proposed Richtersveld facility is therefore supported.

However, the potential impacts associated with large, solar energy facilities on an areas sense of place and landscape cannot be ignored. These impacts are an issue that will need to be addressed by the relevant environmental authorities.

8.3 Visual Issues and Potential Impacts:

Noting that it appears to be agreed by the various impact assessors that the visual impacts of the facility are the key impacts in this case, the key visual issues identified and findings outlined by Bridget O'Donoghue in her Visual Impact Assessment report²² are as follows:

8.3.1 Summary of Definitions, Criteria and Visual Assessments:

Given the topography and the absence of any built form, there are no dominant view corridors towards or across the site. Local topography, distant mountains and road alignments determine the viewing experience of road and of off-road users. Visual exposure is determined by the viewshed (or the view catchment), that is the area within which the proposed facility will be visible. Viewshed boundaries tend to follow ridgelines and highpoints and usually have view shadows where development would be less visible. In this case, the viewshed analysis was undertaken at offsets of 8m

²⁰ Barbour, op.cit. p64.

²¹ Ibid. pviii.

²² This section of this report relies largely on O'Donohugue, Bridget, Revised January 2015, *Proposed* Solar Power Energy Facility: Portion 10 (Arris) of Farm No 2 Korridor Wes in Richtersveld, Namakwaland, Northern Cape Province, South Africa: Visual Impact Assessment: Assessment Phase.

above average ground level (the maximum height of the SEF structures) in order to determine the general visual exposure of the area under investigation. In this case, the visibility of the facility is affected by distance as follows:

- 0 0.5 km Clearly noticeable within the observer's view frame;
- 0.5 2km Moderately visible, recognisable features within observer's view frame;
- 2 4km Hardly visible, practically not visible unless pointed out to observer;
- 4 km plus Long distance view where the facility would become part of the visual environment, but could still be visible and recognisable.

Given that the public roadway, farm and town settlements, tourist destinations, structures and dominant natural features are all beyond 4km from the site (the site is approximately 14km from the WHS and 30km from the Richtersveld National Park). There is therefore no visual impact on these significant resources.

Also, given that the viewer incidence of the proposed facility has no permanent viewer observers, situated as it is in a rural semi-desert area beyond 4km from the nearest public roadway, farm settlement and town, and despite the site's visual sensitivity as a natural landscape with a high degree of scenic qualities, the visual perception impact is very low.

Landscape integrity is determined by qualities like the intactness of the natural and cultural landscape, the lack of visual intrusions or incompatible structures, and the presence of a 'sense of place'.

The Visual Absorption Capacity is the capacity of the receiving environment to absorb the potential visual impact of the proposed facility. The VAC of this site is negligible by virtue of low vegetation; low/medium in terms of the existing infrastructure, electrical power lines and pylons, telephone lines in site's context; medium/high in terms of landform as existing topography limits views onto the site and context and provides a backdrop to the site. The visitors of the WHS are beyond the Grootberg and Springklipberg and therefore will not have view of the proposed facility.

The combined results of the visual exposure, viewer incidence/perception, visual absorption capacity, and visual distance of the proposed facility leads to the following conclusions:

- areas within 0-500m of the site are areas of high visual impact;
- the public road nearest the site, some 7kms distant, is an area of no visual impact;
- areas beyond the site's boundaries in the 0.5 2km range are of low visual impact.

The visual impact of the proposed facility on residents of neighbouring farms is expected to be of NO Significance as the closest farm is Brandkaros farm approximately 12km from the site. The farm Beauvallon is 2.5 km from the proposed powerline.

As there are no observers of the facility within medium or close proximity, the visual impact of any lighting will be non-existent. The area surrounding the proposed facility has a low incidence of receptors, being a natural landscape that is occasionally used

for grazing of small livestock. As the only observers in close proximity are goat herders on non-permanent basis, there is minimal significance to the visual impact of lighting on closer observers.

However, a potential lighting impact is the 'sky glow', the condition where the night sky is illuminated as light is reflected off particles in the atmosphere such as moisture, dust or smog. Sky glow intensifies with the increase in the amount of light sources and each new light source, especially upwardly directed lighting, contributes sky glow. The facility may contribute to the effect of sky glow in an otherwise dark environment.

As the site is situated within a scenic context, mitigating design, planning and specification of lighting infrastructure is recommended as specification and placement of lighting and light fixtures for the facility can contain rather than spread the light. Measures include the following specifications:

- limiting mounting heights of lighting fixtures by specifying foot-lights or bollard level lights only;
- use of minimum lumen or wattage in fixtures;
- use of down-lighters, or shielded fixtures;
- use of low pressure sodium lighting or other types of low impact lighting;
- use of motion detectors on security lighting. This will allow the site to remain in relative darkness.

8.3.2 Sense of Place:

Sense of place refers to a unique experience of a natural and cultural environment by a user, based on their cognitive experience of the place. Visual criteria and specifically the visual character of an area (informed by a combination of aspects such as topography, level of development, vegetation, noteworthy features and cultural landscape) play a significant role. A visual impact on the sense of place is one that alters the experience of the landscape to such an extent that the user experiences the environment differently, and more specifically, in a less appealing or less positive light. Specific aspects contributing to the sense of place of this area include the visual qualities of the natural landscapes, Orange River and local farming The facility is situated within the context of infrastructure such as activities. powerlines, two substations and a diamond mine and is not within a pristine landscape. Therefore, the visual impact to the sense of place is reduced. As the distance from the proposed facility to the boundary of the World Heritage site in a straight line is approximately 14km and 30km from the Richtersveld National Park. there will be no visual impacts on the WHS and the National Parks at that distance, especially with the mountain range between the site and the WHS and the SANpark.

Although the facility will contribute to the increase of infrastructure in the site context, the site will not be visible from the WHS due to distance (over 14 km) and topography (mountain ranges). The site is in context (7km) to existing infrastructure node situated along the Orange River (roadway, two sub stations, diamond mine and powerlines) in addition to over 12km from the nearest residents on Brandkaros farm. Road users, residents and visitors to the area will therefore not view the proposed facility. Viewing of the facility can only occur if observers travel on the informal track between the public road and the site and are within the 0 - 2km distance of the site. The site is situated outside the WHS and its Buffer Zrea. The facility will constitute a

high change to the sense of place and character of the site and a medium/high change of character to the site's local area, 0-2km of the site.

8.3.3 Findings in respect of Visual Impacts:

The findings of the Visual Impact Assessment undertaken for the proposed Solar Energy Facility are the visual quality and views of the site and its immediate context will be transformed for the entire operational lifespan (approximately 25 years).

O'Donoghue's summary of the assessed visual impacts assuming mitigation for lighting and construction phase as recommended are exercised, are as follows:

- The assessed visual impact of the facility on users of the public roads is of NO significance;
- The assessed visual impact on residents of urban areas in proximity to the proposed facility will be of NO significance as the site is not visible from the closest town, Sanddrift;
- The assessed visual impact on residents of farms in context to the proposed facility will be **NO** significance, due to the distance of the farms from the site;
- Within the greater region, the potential visual impact on sensitive visual receptors (i.e. users of National Parks) will be of **NO** significance, due to the distance of the site from the National Parks;
- Visual impacts related to lighting will be of NO significance to road users, residents in the context of the site due to the distance from the site to the road, town and farms, but HIGH in close context of the site (0-1km range);
- The assessed visual impact of the construction phase is also expected to be of LOW significance, if mitigation measures are implemented;
- The anticipated visual impact on the character and sense of place of the immediate site context will be of HIGH significance, but of MEDIUM significance within the local area due to the existing infrastructure (two substations, powerlines, Trans Hex Mine overburden dumps). This high visual impact on the immediate context is mitigated by the fact that the site is not visible from public road, farms and towns;
- The significance of the anticipated impact on the anticipated impact on tourist routes and tourism potential will be of **NO** significance as the site is not visible from the roadway or tourist destinations in the broad vicinity of the site.

The anticipated visual impacts listed above (post mitigation) are considered to be not fatal flaws from a visual perspective, considering the relatively contained area of potential visual exposure and the low occurrence of visual receptors; and in the opinion of the visual impact assessor, the visual impact of the 75MW SEF on the sense of place and character of the immediate and local site context will not detract from the visual qualities of the site context and the adjacent World Heritage Status of the Richtersveld National Park.

8.3.4 Conclusions and recommendations in respect of the Visual Impact Assessment:

The construction and operation of the proposed 75MW solar energy facility and its associated infrastructure will have a visual impact on the scenic resources and character of the immediate site context, within the limited view corridors within 0 - 2km range of the proposed facility. The moderating factors of the visual impact of the facility in the close range are:

- The entire site cannot be viewed due to the distance from the site to surrounding facilities (roads, homes, tourist destinations). In addition, the natural topography, road alignment and natural ground levels restrict views towards the site and offer visual focal points in the far distance;
- The existing substations, mine site, power lines and pylons in proximity to the site have introduced a level of infrastructure to the natural environment.

The visual impact is therefore assessed as no impact on observers of the facility from public roads, settlements and tourist destinations and a medium visual impact to the character and sense of the place to the site's local context. The facility would be visible from areas within the immediate site context (0 -2km) and it will alter the landscape of the immediate site context until it is decommissioned and removed but there are clearly very few and intermittent passers-by who may see the facility.

The project is deemed to be feasible from a visual impact assessment perspective. The mitigations measure regarding lighting will reduce potential visual impacts on the immediate context. The mitigations measure regarding construction phase activities will reduce visual impacts on roads users and inhabitants on the local and broader context during the construction period.

8.4 Heritage Issues and Potential Impacts:

Given the issues raised in the specialist final assessments of the archaeological, social and visual impacts described above, it appears that the heritage resource-related issues and potential impacts of the proposed Solar Energy Facility on the heritage and heritage resources present include the following:

- There are no impacts on the cultural landscape, in that it is a physical heritage resource (accepting that it is also a social resource), or on the living heritage and transhumant life-style of the owner-community;
- The facility and the associated power line will have a visual impact of low significance on the rural semi-desert sense of place (closely linked to the visual impacts) of the site and its immediate surrounds for a distance of approximately 2kms;
- Ot
- •
- There is an argument as to whether this, low as it may be, is negative or positive;²³
- The site is outside but potentially fleetingly visible from within a very small area inside the Namakwaland World Heritage Site Buffer Zone and will not have any impact on the WHS;
- The site is distant from (13kms) and not visible from the World Heritage Site Core Area;
- The site is distant and not visible from any of the other protected areas referred to and there are no impacts on any of them;
- O'Donoghue finds that the visual impact on the character and sense of place of the immediate site context will be of **HIGH** significance, but of

²³ See the discussion on p17-18 and 20 of this HIA report which relies on research in the United Kingdom (for example, Warren and Birnie, op.cit.).

MEDIUM significance within the local area (but it appears that she means high and medium **impact** but of **low significance** due to its distance from habitation and/or passersby);

- The site is distant from and not visible from any public roads, settlements or any farms;
- Night-time lighting could result in a 'sky glow' which should be mitigated (see Bridget O'Donoghue's assessment);
- There is no palaeontology-related heritage present;
- There is only one very small and isolated archaeological heritage site present which can be mitigated by collection (see Tim Hart's assessment);
- This will not have an impact on tourism;
- There are also likely to be other economic and other social impacts, mostly positive, referred to in Tony Barbour's social impact report and, accordingly, they need not be reiterated in this heritage impact assessment.

9 CONCLUSIONS:

While it appeared at first blush that the visual impacts of the proposed Solar Energy Facility might have significant impacts on the sense of place and on the cultural landscape, the findings of the visual and social impact assessments suggest that the impacts are both very local and very low, even insignificant; and the recommended mitigation of the potential night-time 'sky-glow' is endorsed.²⁴

And the archaeological impact assessment found only one small and ephemeral site of low significance. Mitigation of this find of low archaeological significance is recommended as per the archaeology assessment;²⁵ and

SAHRA's interim comment suggested that a palaeontological chance-find protocol be included in the CMP and I concur with this (as low as the chances of any finds may be); and they have also suggested that "a social consultation process that specifically deals with the impact on heritage resources must be undertaken... the results of which must be submitted to the responsible heritage authority" which I have argued (see p16) would serve no purpose *at this juncture in this case*. Indeed, given the process of negotiation that Sunspot engaged in with the community in June 2013, it would be irritating, onerous, time-consuming and frustrating to the community to have such a survey conducted now; and may even be perceived by the community to be insulting. Given this, I argue that, in the circumstances, such an additional process would be overly and even inappropriately cautious.

This heritage impact assessment report, therefore, relying in large part on the final social, visual and archaeological impact assessment reports, concludes that the proposed Solar Power Facility will have beneficial impacts on sustainable energy production; it will create employment and business opportunities for locals during both the construction and operational phase of the project; it will create a significant source of much needed revenue for the Richtersveld CPA from the lease of the land; and the establishment of a Community Trust will also benefit the local community.

²⁴ See O'Donoghue, op.cit. p 26, Cl.3.5.2.6.

²⁵ See Hart, op.cit. p 22, Cl.7.

The proposed development, therefore, represents an investment in clean, renewable energy infrastructure which, given the challenges created by climate change, represents a positive social benefit for society as a whole.

Given these very considerable positive effects and given the low impacts on what is a heritage resource of relatively low value, I support the establishment of the proposed Richtersveld solar energy facility.

2 February 2015

Sound.

Dr Stephen Townsend

Annexure A

Letter dated 27/5/2014 from the Director: Protected Areas Planning, Legislation and Compliance, Department of Environmental Affairs confirming that the subject site is outside of the World Heritage Site and its Buffer Zone.

environmental affairs Deportment: Environmental Affairs REPUBLIC OF SOUTH AFRICA Fedsure Forum Building, 315 Cm Lillian Ngoyl and Pretonus Streets, No th Tows: , Privati-Bag XM47, Pretona, 2001 Enquiries: Dr Geolf Cixtar Tel: (012) 310 3701, Fax: (012) 322 7114/ (012) 300 1246; E-mail: gouven@orwtonment.gov.za Websitel www.sm/ironment.gov.za Richtersveld Sunspot (Pty) Ltd 9th Floor Convention Tower Heerengracht Foreshore Cape Town 8001 Attention: Mark Bleloch To whom it may concern This is to confirm that the 200ha land parcel defined by the following correcto ordinate points -A 28° 33' 19,88" South and 16° 45' 53.85" East E 28° 33' 19,88" South and 16° 46' 57,14"East C 28º 33' 58,43" South and 16° 46' 57,14" East D 28º 33' 58,43" South and 16º 46' 53,85" East Is outside the Richtersveld World Heritage Site buffer zone and not in a promulgated protected area. Yours Sincerely Ms Nosipho Ngcaba **Director General** Department of Environmental Affairs Letter signed by: Dr Geoff Cowan Designation: Director: Protected Areas Planning, Legislation, Compliance and Monitoring Date: 87/05/014

Annexure B

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Attendance Registers at Public Meetings held at Eksteenfontein, Lekkersing, Kuboes, Sanddrift and Alexander Bay on 20, 20, 21, 21 and 21 June 2013 respectively

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Annexure C

Flyers in English and Afrikaans advertising the solar energy proposal to be discussed at the public meetings at Eksteenfontein, Lekkersing, Kuboes, Sanddrift and Alexander Bay on 20, 20, 21, 21 and 21 June 2013 respectively



Richtersveld Sonkragprojek

Opsomming van sleutelterme Mark Bleloch (Professionele Ingenieur)

Grootte van die Sonkragprojek:

100 hektaar (600 m breed x 1666m lank) geleë op Gedeelte 10 (Arris) van die plaas Korridor Wes (12327 hektaar in grootte) - huurkontrakarea minder as 1% van die plaas Arris

Plek van die Sonkragprojek: 7.7km suid-Oos van Beesbank substasie

7.7km suid-005 van beesbank suustasie Naaste nedersetting: Sandrift (16.65km Suid van Sandrift) Afstand van Alaxander Bay: 29km na die ooste Die son se energie sal met behulp van solarselle omgesit word in elektrisiteit. Die elektrisiteit sal deur ESKOM gekoop word en met oorhhoofse kraglyne na verbruikers vervoer word. Hierdie hernubareenergie program was geloods deur die Departement van Energie en word deur die terme en voorwaaardes soos uiteengesit in die Onafhanklike Kragverskaffer Verkryggingsprogram geregaleer.

Grondeienaars: Die Richtersveld SIDA HUB Communal Property Association (Registrasie Nommer: CPA/01/328/A)

Voordele vir die grondeienaars indien die projek deur die Regering se Departement van Energie toegeken word:

Huurkontrak: Huurinkomste van R1 000 000 per jaar wat maandeliks betaal word vanaf die datum waarop die kragstasie in werking trie en deur vir 20 jaar met eskalasie van 3.5% per jaar (R 2 000 000 per jaar in die 20st jaar)

Tydens konstruksie: Huurinkomse van R50 000 per maand vir 12 tot 18 maande

Eienaarskap in Projek: 10% aandeel in die maatskappy wat die projek besit

Werksgeleenthede en Ekonomiese Ontwikkeling:

Ten minste 300 werksgeleenthede tydens die konstruksie-tydperk (mense wat lede is van die CPA) Ten minste 90 werkgeleenthede vir die bedryf en instandhouding (mense wat lede is van die CPA sal opgelei word) vir die duurte van die sonkragprojek (20 jaar)

Ondersteuning vir plaaslike entrepreneurskap, soos gedefinieer deur die Regering (Bv. uitkontraktering van sekuriteit, vervoer, skoonmaak, plantegroeibeheer, ens aan die plaaslike gemeenskap)

Let wel: Die enigste verbintenis deur die grondeienaars is die beskikbaarstelling van die grond - daar is geen risiko vir die gemeenskap (CPA lede) daaraan verbonde nie - die gemeenskap (CPA) heff nie borg te teken of enige koste verbonde aan hierdie projek aan te gaan nie

Tydskale:

Teken opsie om te huur: 29 Junie 2013 Omgewingsimpakstudie, Spesialis Studies en Permitte Stuur projek: Verwag Augustus 2014 (soos bepaal deur die Regering) Aankondiging van Voorkeurbieër Status: November 2014 Projekfinansiering en beplanning voltooi Augustus 2015 Begin konstruksie Augustus 2015 Projek kommersiële bedryf: Verwag Augustus 2016

Annexure D

Illustrations displayed at the public meetings at Eksteenfontein, Lekkersing, Kuboes, Sanddrift and Alexander Bay on 20, 20, 21, 21 and 21 June 2013 respectively



The farm portions showing the Gariep and the sea



Photo-montage of facility



View from the air showing the facility, the Gariep and the sea



A tracker



Several trackers



Location of the facility and the farm portion it is on

Annexure E

Photographs taken on the Roadshows



Meeting with goat farmers close to solar farm location



Meeting at Eksteenfontein in town hall



Meeting at Eksteenfontein in town hall – show of hands in favour of the project



Advert for meeting in Eksteenfontein – same advert for Lekkersing, Kuboes, Sandrift and Alexander Bay







Town of Lekkersing



Meeting at City Council offices Lekkersing – show of hands in favour of project







Posters taken to each of the 5 towns to illustrate location and visual impression of solar farm





Meeting in Library Hall at Kuboes



Meeting in Library Hall at Kuboes



Meeting in town hall at Alexander Bay



Meeting in Sandrift at local school hall



Meeting in Sandrift at local school hall

Annexure F

Minutes of Richtersveld SIDA !HUB Communal Property Association Special General Meeting held on 29 June 2013

RICHTERSVELD SIDA !HUB COMMUNAL PROPERTY ASSOCIATION

REGISTRATION NUMBER: CPA/01/328/A

("THE ASSOCIATION")

EXTRACTS OF THE MINUTES OF THE SPECIAL GENERAL MEETING OF THE MEMBERS OF THE ASSOCIATION, HELD AT にいめにをう_ON_29・06・2018

1. Chairperson

WILLEM . JACOBUS DIFECIMENT

2. Quorum

The necessary quorum being present as acknowledged by the Chairperson, the meeting was declared duly called and constituted.

- 3. Recordal
- 3.1 Mark Bleloch, with an interpreter who provided Afrikaans translations, gave a presentation to the members of the Association in respect of the proposed development, construction and operation by K2012200939 (South Africa) Proprietary Limited (the "Lessee") of a concentrated photovoltaic plant (the "Premises") owned by the Association measuring about 100 hectares, forming part of the property described as Portion 10 (Arris) of the Farm Korridor Wes (Namakwaland) (in extent 12327,0465 hectares). The presentation formed part of public meetings held in Kubces, Sandrift and Alexander Bay on 21 June 2013, during which Mark Bleloch provided a summary of the proposed development as well as an overview of the following topics with respect to the proposed development:
- 3.1.1 the technology;
- 3.1.2 the governmental bidding process;
- 3.1.3 the exact location of the proposed development;
- 3.1.4 how the proposed development will affect the region;
- 3.1.5 the community share; and
- 3.1.6 economic development.

RICHTERSVELD SIDA HUB VERENIGING VIR GEMEENSKAPLIKE EIENDOM

REGISTRASIE NOMMER: CPA/01/328/A

("DIE VERENIGING")

UITTREKSELS VAN DIE NOTULE VAN DIE SPESIALE ALGEMENE VERGADERING VAN DIE LEDE VAN DIE VERENIGING, GEHOU TE KURGES op 201

1. Voorsitter

WILLEM TREDBUS DIGELAREDT

2. Kworum

Met die vereiste kworum van lede wat teenwoordig is soos erken deur die Voorsitter, is die vergadering as behoorlik belê en saamgestel verklaar.

3. Boekstawing

- 3.1 Mark Bleloch, met 'n tolk wat Afrikaanse vertalings verskaf het, het 'n voorlegging aan die lede van die Vereniging gemaak ten opsigte van die beoogde ontwikkeling, konstruksie en bedryf deur K2012200939 (South Africa) Proprietary Limited (die "Huurder") van 'n gekonsentreerde fotovoltaïese aanleg (die "Aanleg") op 'n sekere oppervlak van grond (die "Perseel") wat besit word deur die Vereniging en wat ongeveer 100 hektaar groot is, wat deel vorm van die eiendom wat beskryf word as Gedeelte 10 (Arris) van die plaas Korridor Wes (Namakwaland) (groot 12327,0465 hektaar). Die voorlegging het deel gevorm van openbare vergaderings gehou te Kuboes, Sandrift en Alexanderbaai op 21 Junie 2013 waartydens Mark Bleloch 'n opsomming van die beoogde ontwikkeling:
- 3.1.1 die tegnologie;
- 3.1.2 die regering se tenderproses;
- 3.1.3 die presiese ligging van die beoogde ontwikkeling;
- 3.1.4 hoe die beoogde ontwikkeling die streek sal beïnvloed;
- 3.1.5 die gemeenskap se deel, en
- 3.1.6 ekonomiese ontwikkeling.

1.D

- 3.2 For the purposes of the above, the Association would enter into a lease and option agreement (the "Lease and Option Agreement") and a long term notarial lease agreement (the "Notarial Lease Agreement").
- 3.3 In terms of the Lease and Option Agreement and the Notarial Lease Agreement (collectively the "Agreements"):
- 3.3.1 the Lessee will lease the Premises for a period of not more than 5 years for the purposes of *inter alia* conducting studies and other planning activities in respect of the Plant;
- 3.3.2 the Lessee will have an option to conclude the Notarial Lease Agreement;
- 3.3.3 subject to the exercise of the option by the Lessee, the Association will enter into the Notarial Lease Agroement in terms of which the Association will let the Premises to the Lessee for a lease period commencing on the date of notarial execution of signature of the Notarial Lease Agreement and explring 20 years after the scheduled commercial operation date of the Plant.
- 3.4 The proposed development of the Plant and the terms of the Agreements were considered and discussed.
- 4. Resolution

The conclusion of the Agreements, including the Notarial Lease Agreement, between the Association and K2012200939 (South Africa) Proprietary Limited is hereby consented to and approved as a special matter by the majority of the members present at the special general meeting in terms of section 12 of the Communal Property Associations Act 28 of 1996.

 Conflicts between English and Afrikaans versions of these extracts

To the extent that any conflict exists between the English and Afrikaans versions of the extracts of the minutes contained in this document, the English version shall prevail.

CERTIFIED AS A TRUE AND CORRECT RECORD

CHAIRPERSON OF THE ASSOCIATION

DATE: 06.07.2013

- 3.2 Vir doeleindes van bogenoemde, sal die Vereniging in 'n huur en opsie kontrak (die "Huur en Opsie Kontrak") en 'n langtermvn notariële huurkontrak (die "Notariële Huurkontrak") tree.
- 3.3 In terme van die Huur en Opsie Kontrak en die Notariële Huurkontrak (gesamentlik die "Kontrakte"):
- 3.3.1 sal die Huurder die Perseel huur vir 'n tvdoerk van nie meer as 5 jaar nie vir doeleindes van inter alla die onderneming van studies en ander beplanningsaktliwiteite ten opsigte van die Aanleg;
- 3.3.2 sal die Huurder 'n opsie hê om die Notariële Huurkontrak te sluit;
- 3.3.3 onderhewig aan die uitoefening van die opsie deur die Huurder, sal die Vereniging in die Notariële Huurkontrak tree in terme waarvan die Vereniging die Perseel aan die Huurder sal verhuur vir 'n huurtydperk wat aanvang neem op die datum van notariële uitvoering van die Notariële Huurkontrak en wat verstryk 20 jaar na die geskeduleerde kommersiële bedryfsdatum van die Aanleg.
- 3.4 Die beoogde ontwikkeling van die Aanleg en die bepalings van die Kontrakte was oorweeg en bespreek.
- 4. Besluit

Die sluit van die Kontrakte, insluitend die Notariële Huurkontrak, tussen die Vereniging en K2012200939 (South Africa) Proprietary Limited word hiermee tot ingestem en goedgekeur as 'n spesiale saak deur die meerderheid lede teenwoordig op die spesiale algemene vergadering in terme van artikel 12 van die Wet op Verenigings vir Gemeenskaplike Elendom 28 van 1996.

 Konflikte tussen Engelse en Afrikaanse weergawes van hierdie uittreksels

Tot die mate waartoe enige konflik bestaan tussen die Engelse en Afrikaanse weergawes van die uittreksels van die notule soos vervat in hierdie dokument, sal die Engelse weergawe deurslaggewend wees.

GESERTIFISEER AS 'N WARE EN KORREKTE REKORD

VOORSITTER VAN DIE VERENIGING

DATUM: 06.07.2013