

19 April 2018

# Cape Environmental Assessment Practitioners (Pty) Ltd

Tel: 044 874 0365 Fax: 044 874 0432

5 Progress Street, Eagle View Building, 1st floor

P.O. Box 2070, George, 6530

www.cape-eaprac.co.za

# RE: Request for site selection matrix for a proposed solar energy facility

Dear Mr Holder,

Our earlier correspondence refers whereby it was requested that Atlantic Renewable Energy Partners (Pty) Ltd ("AEP"), on behalf of K2018091758 (SOUTH AFRICA) (Pty) Ltd, provide a site selection matrix for the development of a PV solar energy facility ("SEF") in the Kathu region designated to be Gaetsewe Solar. The most preferable location we have identified for Gaetsewe Solar is Portion 2 of the farm 460 Legoko and Farm Sekgame No.461, situated in the District of Kuruman Rd, Northern Cape Province, hereinafter referred to as the Site. This is based on our extensive investigation of prospective sites in the Kathu area, backed by the following findings:

## 1. Proximity to towns with a need for socio-economic upliftment

The Site is situated in close proximity to the towns of Kathu and relatively close proximity to the towns of Deben and Kuruman. These towns are typically masked with high rates of unemployment, as is the case in the Northern Cape. The closest cities in the area are Kimberley and Upington, which both also experience the same level of unemployment and poverty. Consequently, local labour would be easy to source, which fits in well with the REIPPPP economic development criteria for socio-economic upliftment. Currently, a large proportion of local labour is used in the mining and agricultural industry. A few negatives related to agricultural employment are that it is very seasonal and it is not always in close proximity to their homes, forcing workers to travel large distances on a daily basis to reach their place of employment. Over the years, employment in the mining sector has shown to be very volatile.

### 2. Access to grid

Access to the Eskom grid is vital to the viability of a SEF. The Developer corresponded with Eskom network planners to understand their future demand centres as well as strategic plans to upgrade and strengthen any local networks. It is understood that Eskom is planning to develop the new Sekgame Switching Station approximately 5km south of the existing Ferrum MTS, and that they intend to connect new SEF's into this Switching Station. Notwithstanding the fact that the SEF will contribute to meeting the electrical demand on the distribution network, proximity to the Ferrum MTS means that surplus



power can be evacuated into Eskom's Transmission System and conveyed at very high voltage for consumption elsewhere in the country.

### 3. Critical transmission power corridors

Eskom's '2040 Transmission Network Study' has drawn on various scenarios to determine the grid's development requirements, as well as to identify critical power corridors for future strategic development, of which the Northern corridor is one of these. The national power corridors have been refined and consolidated into five transmission power corridors of 100 km in width, which are being used by the Department of Environmental Affairs (DEA) for a strategic environmental assessment (SEA) which will seek to identify environmentally acceptable routes over which long-term environmental impact assessment (EIA) approvals can be secured. The Site falls into the Northern corridor.

# 4. Land availability

The majority of land surrounding the Kathu town is considered to be undevelopable, largely due to the existing town commonage, residential developments and mining land reserved for related mining activities. Portion 2 of Legoko Farm No 460 is a few of the available privately owned land parcels suitable for solar PV development.

#### 5. Camel Thorn concentrations

There is a high concentration of Camel Thorn trees in the Kathu region, a tree type currently listed in South Africa, under the National Forest Act as being protected. To this extent it was paramount to finding a site where the least number of Camel Thorns would be required to be removed. Of all the proposed SEF developments in the Kathu region, it is believed that the Site features some of the lowest number of Camel Thorns (sites to the North of Kathu have high Camel Thorn concentrations in comparison to this site), and therefore the Site poses the least potential impact as a SEF.

# 6. Renewable energy hub

Gaetsewe Solar is being developed in close proximity to other SEFs. All of these SEFs are proposed to be owned and operated by the same Lead Sponsor, each under a separate Special Purpose Vehicle (SPV). Environmentally permitting, a hub development approach has many obvious construction, operational and maintenance benefits, and allows optimum use of land as opposed to sterilising/ interrupting many more land parcels in cases where an erf/ property is used for a single development only.

## 7. Declining farming activity in the area

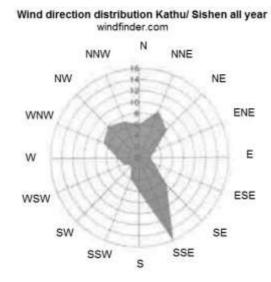
For a number of reasons, agricultural land around Kathu generally has very low agricultural potential, owing particularly to the following factors:

- The depletion of underground water resources due to mining activity;
- · Periodic droughts directly impact the ability to farm sustainably; and
- Stock theft is a persistent problem in the area and therefore the area sees low agricultural production as cattle and sheep farming and other forms of small livestock farming proves to be challenging.



#### 8. Wind and dust consideration

The Kumba iron ore mine is to north-west of the Site and venturing closer to the mining area in Kathu / Sishen would expose the SEF to increased dust levels thus reducing the efficiency of the solar PV modules and hence power generation of the SEF. The wind direction distribution for the Kathu / Sishen region appears to be predominantly towards the north-west which it is hoped will blow most of the dust from the mine away from the Site.



## 9. Proximity to access road for transportation of material and components

Large volumes of material and components would need to be transported to the project site during the construction phase of the project. The accessibility of the Site was therefore a key factor in determining the viability of Gaetsewe Solar, particularly taking transportation costs (direct & indirect) into consideration and the impact of this on project economics and therefore the ability to submit a competitive bid under the Department of Energy's ("DoE") Renewable Energy Independent Power Producer Procurement Programme ("REIPPPP").

#### 10. Kathu airport

The Sishen / Kathu airport is located approximately 18km to the north-west of the Site, and therefore will not pose any threat to the aviation industry.

#### 11. Same landowner

AEP has an established relationship with the landowner of Portion 2 of Legoko 460 due to other projects we have initiated on their land, and thus negotiating a new contract with the landowner is relatively easy.

Based on the above list of findings it was decided that the proposed site would be suitable for such a development. With consideration to the farm extents, it is believed that the site could accommodate the maximum 75 MW contracted capacity permitted under the DoE's RFP, and furthermore, that all this power would be able to be absorbed into the national grid under stipulated contingency conditions.



Please do not hesitate to contact me if any other information is needed regarding this request.

Yours sincerely,

Sonia Miszczak

Project Developer, Atlantic Renewable Energy Partners