

Abengoa Solar Power South Africa (Pty) Ltd  
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4 May 2016

Integrated Environmental Authorisations  
Strategic Infrastructure Developments  
Department Environmental Affairs  
Private Bag X447  
Pretoria  
0001

Attention: Mr Muhammad Essop

By e-mail: Messop@environment.gov.za

Dear Sir,

**DEA Reference: 14/12/16/3/3/2/870 - Additional information required for the EIA as prescribed in DEA acceptance letter for the proposed 200 MW Paulputs CSP facility and associated infrastructure (the Paulputs Project) on Portion 4 of the farm Scuit Klip 92 (the Property) near Pofadder**

We refer to the DEA acceptance of the scoping report, dated 18 February 2016 with additional required information subjected as number XV.

We consider the Property to be highly preferred and suited for the development of a concentrated solar power (CSP) project given that the land portion in question was identified as being technically- and commercially feasible.

The development and operation of the Paulputs Project is largely dependent on resources such as solar radiation levels, location, extent and accessibility of the site, availability of water and grid connection. The aforesaid factors have a direct effect on the feasibility of a CSP project and development.

The Property has been identified as having the potential for the installation of a CSP facility based on the following technical criteria:

#### **1. Extent of the Property and Site**

The Project needs a relatively flat area of sufficient extent to develop the Paulputs Project. The planned 200 Mega Watt concentrated solar power project using heliostats and tower technology, and associated infrastructure requires up to 900 ha of land space. The larger farm portion owned by Kaxu CSP South Africa (Pty) Ltd is approximately 3507 ha in extent, of which approximately 900 ha (the Site) has been allocated for the Paulputs Project. The Property and the Site (i.e. Paulputs 200MW tower Project) have been indicated on the attached map, marked as annexure "A".

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The Project will occupy approximately 27% of the land surface area of the Property. The two existing CSP plants (being Kaxu Solar One and Xina Solar One) on the Property occupy approximately 900 ha in total, with the remainder of the Property available for future CSP development. The Site is considered sufficient for the installation of the Paulputs Project allowing for the avoidance of sensitivities within the greater study area.

## **2. Site access**

The Site can be accessed via the existing tarred access road off the R357 Onseepkans Road which turns off from the N14, 40 kilometres North East of Pofadder. The existing tarred access road is currently used for access to the other two CSP facilities on the Property.

## **3. Current land use considerations**

There is no cultivated agricultural land or other commercial agricultural activities on the Property which has or could have an impact on the Paulputs Project. The two other CSP facilities on the Property, Kaxu Solar One and Xina Solar One are located in the southern portion of the Property as indicated on the map marked A attached. Kaxu CSP South Africa (Pty) Ltd had the portion of the Property south of the R357 rezoned for Special Solar use, which is consistent with the current and intended land use.

## **4. Climatic conditions and solar irradiation**

Climatic conditions determine the economic viability of a concentrated solar power project as it is directly dependent on the annual direct solar irradiation values for a particular area. Factors contributing to the preferred location of the project include the relatively high number of daylight hours and the low number of rainy days experienced in this region. The Northern Cape receives the highest average daily direct normal and global horizontal irradiation in South Africa. The latter indicates that the location of the Paulputs Project is extremely well positioned for a concentrated solar power project. In addition, the area which lies to the west of Upington exhibits some of the best solar irradiation in South Africa (see Annexure "B"). Direct normal irradiation (DNI) for the Pofadder region is more than 2900 kWh/m<sup>2</sup>/annum. The DNI for the Paulputs Project Site is more than 3000 kWh/m<sup>2</sup>/annum as confirmed by long term actual ground station measurements.

## **5. Square Kilometre Array**

Through interactions with the South African SKA Project Office it has been confirmed that the nearest SKA station has been identified as SKA ID 1896, at approximately 107 km from the proposed installation. Based on distance to the nearest SKA station, and the information currently available on the detailed design of the CSP installation, the Paulputs CSP Project poses a very low risk of detrimental impact on the SKA.

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## **6. Topography**

The Site is located on a series of plains that slope in a North - Westerly direction. The Site is generally flat to gently undulating and lies at a height of approximately 800m - 850m above sea level. The study area includes a single hill in the North - Western corner (i.e. Konkoonsieskop) and a range of steep hills in the North - Eastern corner (i.e. Ysterberg), both of which fall outside of the area of interest considered for the Paulputs Project.

## **7. Access to the Grid**

It is vital to the viability of the Paulputs project to have easy access to the Eskom electricity grid. Projects which are in close proximity to a connection point and/or demand centre are favourable, and reduce the losses associated with power transmission. Eskom's Paulputs Transmission Substation is located on the Property (see Annexure A) and allows for direct connection to the grid via a short connection. In addition, 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. The Paulputs CSP project site falls into the Northern corridor.

We have consulted with representatives of local Eskom technical departments as well as the Eskom planning and transmission expansion departments to understand the future demand centres as well as strategic plans to upgrade and strengthen any local networks. These discussions have been guided to a large extent by the recently published Eskom Transmission Development Plan ("TDP") 2015 – 2024.

## **8. Proximity to Towns with a Need for Socio-Economic Upliftment**

The Northern Cape Province, like most of South Africa, is marred by unemployment, inequalities and poverty. To this extent the Paulputs Project is situated approximately 40 km North-East of Pofadder, 45 km South East of Onseepkans and consequently, local labour would be easy to source, which fits in well with the REIPPPP economic development criteria for socio-economic upliftment. The Paulputs Project would present a new opportunity for local labour to be skilled and skilled workers because of previous work experience on the preferred bidder plants, and its proximity to the Kaxu Solar One and Xina Solar One projects which are in operation and construction.

## **9. Proximity to Access Road for Transportation of Material and Components**

The proximity of the site to the N14 decreases the impact on secondary roads from traffic during the construction and operation phases as the site can be easily accessed via the existing tarred access road off the R357 Onseepkans Road via the N14. As material and components need to be transported to the Site during the construction phase of the project, the accessibility of the Site is a key factor in determining the viability of the Paulputs Project, particularly taking transportation costs (direct and

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indirect) into consideration and the impact of this on project economics and therefore the ability to submit a competitive bid under the DoE's REIPPPP programme.

We trust you find the above in order.

Kind regards,



Julian Lopez Garrido

**Country manager**

**Abengoa Solar Power South Africa**

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**Annexure A**

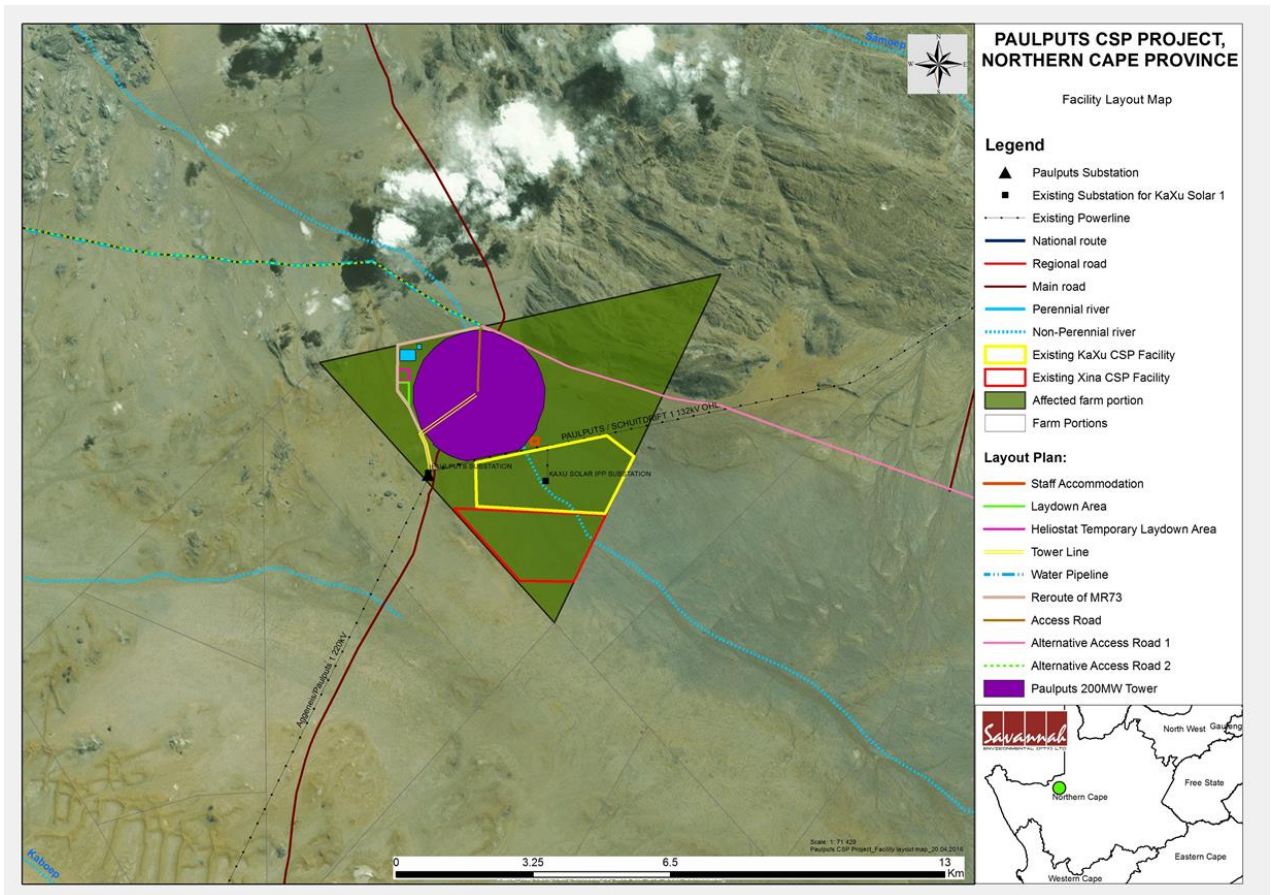


Figure 1 - Preliminary layout for the proposed Paulputs CSP Project in the Northern Cape Province

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Annexure B

Direct Normal Irradiation (DNI) South Africa

