

Environmental and Social Data Sheet

Overview

Project Name: ESKOM KIWANO CSP PROJECT

Project Number: 2010-0704

Country: South Africa

Project Description: Implementation and operation of a 100 MW power plant based on an innovative Concentrated Solar thermal Power (CSP) technology.

EIA required: yes

Project included in Carbon Footprint Exercise¹: yes

(details for projects included are provided in section: “EIB Carbon Footprint Exercise”)

Summary of Environmental and Social Assessment, including key issues and overall conclusion and recommendation

The project will apply a heliostat/receiver technology, with a 210 m high tower and a solar field area of around 1.3 km². The project site is located ca. 15 km southwest of Upington, a town in the province of Northern Cape, in Northwest South Africa.

If the project were located in the EU, it would fall under Annex II of the EIA Directive 2011/92/EU, requiring the competent authority to determine the need for an Environmental Impact Assessment (EIA). Under South African Law, the project requires an EIA, including initial scoping and public consultation.

According to the EIA, environmental project impacts relate to effects on local avifauna, water consumption and visual and noise impacts. They have been adequately mitigated, and are expected to be minor if the mitigating measures required in the environmental permit are effectively implemented.

However, the EIA studies relating to fauna and flora baselines relied heavily on published information, and not enough fieldwork on the site was conducted to confirm the occurrence of species. Thus, the Bank has requested the promoter to perform additional studies and fieldwork in line with its environmental standards. The Bank will review these studies to its satisfaction as part of a disbursement condition to be included in the Finance Contract. However, given the site conditions and the Bank’s experience in similar projects very close to the site, the outcome of these studies is not expected to affect either the environmental baseline or the project impacts and proposed mitigation measures.

The project does not involve any physical or economic displacement of local populations. Project social impacts are deemed to be overall positive, given the high levels of unemployment and poverty and the low levels of education in the surrounding areas, and the employment opportunities this project represents, in particular for low to semi-skilled workers. Negative social impacts such as those related to the presence of construction workers in the area are adequately mitigated.

¹ Only projects that meet the scope of the Pilot Exercise, as defined in the EIB draft Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: above 100,000 tons CO₂e/year absolute (gross) or 20,000 tons CO₂e/year relative (net) – both increases and savings.

Environmental and Social Assessment

The CSP plant will emit significantly less gaseous and pollutant emissions, including greenhouse gases, than conventional thermal power plants. The current power plant mix in South Africa is dominated by coal. The plant's construction and operation may represent an important employment opportunity for the communities around the project site that are suffering from high unemployment and limited commercial alternatives.

The EIA process has already been completed (initially in 2011, amended in 2013) and an environmental permit was granted in June 2013. Public consultation was performed during the initial scoping phase and throughout the EIA process. It included inter alia, the identification of potential stakeholders and their issues and concerns related to the project, a 30-day public review period (for both the scoping and EIA reports), focus group meetings, a public meeting advertised in the local press, and written correspondence. In addition, a stakeholder meeting was held to provide feedback on the EIA findings. The EIA scope comprised a plot of land of 1.3 km², which comprised the project (including its 132 kV overhead tie-line of ca. 6 km) and two other solar power plants not included in the project.

The potential effects on avifauna are the possibility of collisions of three threatened bird species with the connection tie-line are also likely to be limited after installing bird deterrent mechanisms and special marking devices in the overhead line and associated structures. Collisions with the central tower should be mitigated by the fact that it will be relatively visible with a diameter of ca. 20 m. Other environmental impacts included water consumption of ca. 130 000 m³/a, which is well below the consumption of a similar plant due to the use of a dry-cooling system for the project.

The project's residual environmental impacts will be mainly visual. The central tower with a height of 210 m and the flat mirrors covering 1.3 km² will be visible from all directions up to a distance of 16 km. The area is sparsely populated, with less than 10 person/km². The operation of the plant is expected to have a limited environmental impact. Noise will be kept within permitted limits and very limited atmospheric emissions are expected, as the plant will use a very limited amount of auxiliary fuel.

The nearest site of natural interest is the Spitskop Provincial Nature Reserve, a 5 600 ha hunting reserve about 16 km from the site. The reserve is privately owned and used for recreational purposes, in particular for sighting local game species such as springbok or gemsbok. It is to be noted that none of species hosted by the reserve are endangered, vulnerable or near threatened, according to the IUCN Red List.

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The project is expected to create 730 person-years of temporary employment during the 33 month construction period. Permanent employment is expected to be 73 full-time jobs. These figures do not take into account indirect employment generated by the project.

EIB Carbon Footprint Exercise

Absolute CO₂ emissions from the project in a standard year of operation will be around 62 kt CO₂ e/a.

The baseline emissions are calculated assuming that electricity generated by the project will displace generation from a mix of existing thermal power (coal) and new generation (coal and renewable, as per the South African Department of Energy Integrated Resource Planning, published in 2010). The project's auxiliary consumption will be sourced from the existing electricity grid. Compared to this baseline the project is estimated to save ca. 335 kt CO₂ e/a.

For the annual accounting purposes of the EIB Carbon Footprint, the project emissions will be prorated according to the EIB lending amount signed in that year, as a proportion of project cost.