

## Environmental and Social Data Sheet

### Overview

Project Name:	<i>IIFCL - MYTRAH VAYU INDRAVATI</i>	
Project Number:	<i>2016-0033</i>	
Country:	<i>India</i>	
Project Description:	<i>The project is an allocation under the IIFCL ENERGY SUSTAINABILITY &amp; CLIMATE ACTION FL (2013-0339). The loan will contribute to the financing of two wind farms totalling 155 MW. The wind farms are located in the states of Andhra Pradesh and Rajasthan.</i>	
EIA required:		yes
Project included in Carbon Footprint Exercise <sup>1</sup> :		yes

### Environmental and Social Assessment

#### Environmental Assessment

The project comprises two wind farms:

#### Wind farm “Vajrakarur” in Andhra Pradesh:

The wind farm consists of 50 wind turbines with a unit capacity of 2.1 MW and a hub height of 90 m each. Electricity of 31 turbines is transmitted via overhead lines to an existing 33/220 kV pooling station in the wind farm’s vicinity which is already connected to a public substation. A new 100 MVA transformer is added to the pooling station that also serves other turbines. Electricity from the remaining 19 turbines is transported via overhead lines at 33 kV level to a public substation which located around 15 km from the wind farm.

There are further wind turbines installed in the project area.

The project area is characterised by a rural setup. Much of the study area is a modified habitat comprising agricultural lands and scattered villages. The land for the proposed project comprises of private agricultural land and fallow land. Being a rain-shadow region with less rainfall and shortage of ground water, agriculture is slowly deteriorating and people have taken up other skilled and non-skilled income generating occupation. No forest land or protected land is involved.

The nearest protected areas of high biodiversity value are the Important Bird and Biodiversity Area (IBA) Jogimatti Reserve forest in 142 km distance and the Veerapuram Bird Sanctuary that is located nearly 135 km from the project area.

<sup>1</sup> 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 CO<sub>2</sub>e/year absolute (gross) or 20,000 tons CO<sub>2</sub>e/year relative (net) – both increases and savings.

Wind farm “Bhesada” in Rajasthan:

The wind farm consists of 24 wind turbines with a unit capacity of 2.1 MW and a hub height of 90 m each. Electricity produced is transmitted via overhead lines at to an existing 33/220 kV pooling station which is located in wind farm’s vicinity. From there, electricity is transmitted via existing overhead lines at 220kV level to a public substation which is around 51 km away.

The project is part of a larger wind farm of 300 MW. Numerous additional wind farms are located in the same area, totaling some 3-4 GW.

The project area is characterised by a rural setup. Much of it is modified habitat, mainly in the form of rain-fed farmlands. The land for the proposed project comprises of agricultural land and fallow land. No protected land is involved. Forest land is existing in the project area but not affected.

The nearest protected area is Desert National Park (IBA) at a distance of 70 km approximately.

The project area is water scarce.

The entire Indian subcontinent, including study-area, is situated within the limits of the Central Asian Flyway (CAF).

The project, if located inside the EU, would fall under Annex II of the EIA Directive 92/2011/EU leaving to the competent authority the decision as to whether an EIA is required or not. According to applicable Indian law, wind power projects do not require an EIA. Consequently, no screening took place. However under the conditions established by the Bank under the related Framework Loan the final beneficiary was required to carry out an Environmental and Social impact Assessment (ESIA) study for the project.

Two comprehensive ESIA studies including Environmental and Social Management Plans have been produced by external consultants and completed in November 2015 (Vajrakarur) and December 2015 (Bhesada), respectively. The studies cover the entire scope of the project with one exception: The ESIA for Vajrakarur did not comprise micro-site specific impacts for 9 turbines as their location was still uncertain at the time of ESIA. Confirmation collected in the meantime from the promoter and the ESIA expert suggest that these 9 turbines are located inside the study area and subject to the same generic risk profile as the other wind turbines of the wind farms. The Bhesada wind farm was about completed at the time of ESIA. The two ESIA studies conclude that the project has no significant negative environmental and social impacts if the recommended mitigation measures are implemented. The latter are summarized in two detailed Environmental and Social Management Plans (ESMPs) that were partially implemented during construction and that still need to be fully implemented by the promoter and its key contractors over loan life time.

The two ESIA studies are considered to be sufficiently in line with international standards with one exception: The bird impact assessments in both ESIA studies lack an appropriate site-specific data basis. Further, cumulative impacts are not considered in any of the ESIA studies despite other wind farms of various developers in the project’s vicinity.

After thorough analysis of the ESIA studies and consultation with its authors, the Bank concludes that the project sites do not feature significant bird risks when proper

mitigation measures are applied. Both project areas are substantially distant to areas of high biodiversity value.

The Bank therefore explicitly requests, that all bird risk mitigation measures as suggested in the ESMPs must be fully implemented by the promoter. For the Bhesada wind farm this comprises, amongst others, to pursue supplementary short and longer term monitoring campaigns, to count bird mortality, and – if deemed appropriate after further analysis – to introduce temporary turbine shut down during bird migration events. The ESMP for the Vajrakarur wind farm suggests, amongst others, the installation of visibility enhancement objects such as marker balls, bird deterrents, or diverters along transmission lines and on any guy wires used to support towers to avoid avian collision, and recommends the implementation of a long-term programme, designed to monitor avifaunal activity with reference to wind-turbines, to be instituted at the project-site.

In addition, the Bank considers the implementation of additional site-specific bird surveys important to verify the project-related impacts on critically endangered, endangered, and vulnerable bird species as well as on migratory birds and to verify the appropriateness of the mitigation measures proposed. This is largely reflecting current ESMP recommendations but may also go beyond. Corresponding undertakings and reporting requirements are proposed.

### **EIB Carbon Footprint Exercise**

The project has no direct greenhouse gas (GHG) emissions. Estimated GHG emissions savings in a standard year of operation are 303 kT of CO<sub>2</sub> equivalent per year compared to a baseline comprising the current fleet of thermal power plants, new coal power plants, and new renewable energy installations.

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.

### **Social Assessment**

The project contributes to improving the electricity supply of India on the basis of renewable resources. In addition, the project offers benefits to local communities through employment opportunities during project implementation and operation as well as through the improvement of existing and installation of new roads.

The project has neither involuntary resettlement nor indigenous people's issues. There are no culturally important sites in or around the Bhesada project site. Potential noise impacts on a small temple in the Vajrakarur site area are minor.

The Bhesada wind farm is located on public revenue land which is leased from the Government of Rajasthan for 30 years for the purpose of installing a wind farm. The land allotment is conditional to leaving the land available to grazing activities by local farmers. Compensation has been paid by the developer to affected people for the loss of revenues in the immediate footprint of wind turbines, roads, and transmission poles. The compensation payments were collected and further distributed by dedicated Village Development Committees (VDC).

In contrast, the Vajrakarur project is located on private land which was bought for the purpose of this project. Land acquisition took place on the basis of a 'willing

buyer/willing seller' basis. The conversion of private agricultural land to non-agricultural land (NA) for industrial purpose requires permission from state authorities. The financial intermediary (FI) is following this up.

Stakeholder consultations pursued during ESIA's confirm the appropriateness of the land acquisition and allotment/compensation processes; prices paid were deemed adequate by all consultees and in-line with or above prevailing market prices. The land around the turbines of both wind farms remains open for agricultural use and grazing activities. Only the pooling stations are fenced off for safety reasons. The project neither comprises economic nor physical involuntary resettlement.

Local people are employed by the EPC contractor for works and services that do not require specialist skills. Besides local people who represent the majority of workers, skilled workers were hired from outside. They were accommodated in rented accommodation in nearby villages (Vajrakarur) and in a labour camp (Bhesada), respectively. The latter is explained by the remote location of the wind farm.

Child labour is forbidden by national law and not an issue in the project. The same applies to bonded labour. Full compliance with national law is a loan undertaking of the financial intermediary.

Occupational health and safety (OHS) standards are deemed satisfactory. The EPC contractor in charge of installation and operation of both wind farms is ISO 9001, ISO 14001 and OHSAS 18001 certified. It applies internationally accepted OHS standards. The contractor's HSE protocols for the two wind farms list multiple trainings, low numbers of injuries and no fatalities. The Bank's impression of OHS standards when visiting the construction site of the Varjakurur wind farm was good.

A few receptors (mostly with temporary use, a few permanently used settlements) are located close to individual turbines of both wind farms. They may temporarily suffer from noise levels and / or shadow flicker impacts above recommended threshold levels. The ESMP contains noise monitoring campaigns to follow this risk up. Shadow flicker risks are limited to few receptors but remain below internationally accepted levels. Effective mitigation measures such as implementation of hedges, constructive measures at receptor buildings, or temporary curtailments of individual turbines are available if in individual cases too high noise and/or shadow flicker levels were measured after project implementation.

Mitigation measures are suggested in the two ESMPs, addressing all key issues including occupational health and safety, community health and safety, noise, shadow flicker etc. At both sites, a formal and effective grievance redress mechanism for community people still has to be implemented by the promoter. The turbine supplier needs to be appropriately involved into this process, particularly at the Bhesada site, as it operates the project and adjacent wind farms.

## **Public Consultation and Stakeholder Engagement**

There is no requirement by law to pursue public consultation for wind farm projects in India. The Bhesada wind farm spreads across 18 villages and the Vajrakarur wind farm across 7 villages, respectively. Village citizens are generally represented by the Sarpanch (elected head) of their respective Gram Panchayat.

The developer had pursued informal consultations with land owners during project development. However, no formal consultations have taken place yet.

Additional consultations were carried out as part of the ESIA with the developer, land owners/ land users, local villagers, women groups, and a local NGO (consultees differ across the two sites). They all confirm that these people were sufficiently informed about the project and are generally supportive to the project.

Some third party concerns have been raised regarding the Vajrakarur wind farm. Local villagers and women folks are unconvinced about the growing wind power projects in the area which according to them is causing a decline in rainfall in the area. Others expressed that the roads should be restored to its initial conditions in case of any damage due to movement of heavy vehicles. This needs to be addressed through the stakeholder engagement measures laid out in the ESMP.

### **Other Environmental and Social Aspects**

Consultations made during ESIA indicate that local people have additional expectations on the project regarding enhancement of quality of electricity supply, drinking water supply, healthcare and education. Targeted measures of this type may be addressed under the promoter's Corporate Social Responsibility (CSR) programmes which are required by law but not necessarily on a project-specific basis. To date, no CSR or Community Development Programmes have been initiated by the promoter yet with regards to the project regions.

The financial intermediary (FI) requests from the promoter the following documents, satisfactory to the FI: An ESMP with clear allocation of responsibilities for the project's construction and operational period; an HSE management plan project's construction and operational period; an authorization for handling and disposal of waste oil under hazardous waste rules.

## **Conclusions and Recommendations**

The project is deemed acceptable for the Bank under environmental and social aspects under the following conditions:

- Promoter to fully implement the mitigation measures defined in the ESMPs for both wind farms to the satisfaction of the Bank.
- Promoter to carry out additional targeted bird surveys and related impact analyses at both sites, satisfactory to the Bank. The relevant ESMPs shall be updated accordingly.
- Promoter to carry out Corporate Social Responsibility (CSR) measures in both project regions over loan lifetime on a best effort basis and in consultation with the local people.
- Promoter to fulfil the Bank's project-specific E&S information and reporting requirements.