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Executive summary of GSPC wind power consultancy project

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1. Introduction

With the growing concern over climate change, and environmental degradation, there is clear focus world over to switch over to green and renewable energy sources. Wind energy being among the most commercially viable renewables, world over there is huge increase in the demand for wind power projects. This has resulted in the demand for wind energy equipment outstripping the supply capacity. Another aspect is the identification of required quality windy sites and development of the same. World over these two factors are basically restricting the demand growth at present and the same is true in Indian scenario.

TERI has been appointed as consultant to prepare the feasibility report, formulate the tender document, conduct pre-bid meets with the bidder, and carry out the technical as well as the financial evaluation of the tender and give purchase recommendation to Gujarat State Petroleum Corporation Limited.

Feasibility report

A feasibility report for 100 MW wind power project was prepared considering 3 sites of different wind power density, 6 turbines of different range of capacities from various manufacturers, cost of wind mills from various suppliers as given in their earlier bids, various financing terms etc. The general review of wind sector is presented in the feasibility report along with the potential and policy for wind power development in Gujarat State is presented. Technical comparison of the turbines is carried out and the rating is given to each turbines depending on their technical features. Financial analysis is carries out for various combinations of wind turbines and sites, and the IRR, Payback period, cost of generation, etc. are presented in the report.

Based on the analysis it was recommended that the turbines of higher capacity such as Suzlon's 1500 kW and 2100 kW, Vestas's 1650 kW, and Enercon's 800 KW rated capacity turbines should be considered for the investment in higher wind power density sites such as Warshamedi in Gujarat.

Tender Document

Based on the feasibility report for 100 MW wind power project GSPC decided to go for investment in 200 MW wind power project. TERI prepared the tender document

for inviting the bids from various suppliers and developers of the wind farm in Gujarat. The tender document was consisting of the following chapters

1. Instruction to tenderers (ITT): In this the general instructions to the bidders were given, which are capacity of the project, various definitions,volumes of the bid document and the format of bid document, Earnest Money, Site conditions, criteria for evaluations, etc.
2. Special Conditions of Contract (SCC): In this the scope of work, conditions for guarantee and penalties, procurement of land, payment schedule, taxes, governing laws and some other conditions were specified.
3. Annexure: In this various formats for submitting the bids such as Performa of deviations, technical data sheets, Performa for WEG already installed in India, O7M experience, Performa for price schedule, Bank guarantee, etc. were given.
4. Technical Specifications: In this the minimum technical specifications required for civil works, WEG, rotor, gearbox, capacitor, tower, control panel, electrical systems etc were given

Gujarat State Petroleum Corporation Limited invited the bids by releasing notice inviting tender through news paper, about 10 bidders purchased the bids, some of them are

- M/s Enercon (India) Ltd., New Delhi
- M/s Suzlon Energy Ltd., New Delhi
- M/s Vestas Wind Technology India Pvt. Ltd., Chennai
- M/s Global wind
- M/s Abelon energy
- M/s Elecon energy
- M/s Ergo
- M/s Price Water House coopers

A pre-bid discussions were held with all above parties to ensure maximum participation and to arrive at reasonable understanding on various issues the bidders had with the tender. An addendum was issued to all. However, only two bidders namely Vestas Wind Technology India Pvt. Ltd. and Suzlon Energy Ltd. have submitted the technical and commercial offers on 12th January 2009. However the other developers have not shown their ability to submit the bid as per the pre-decided criteria in tender document. As GSPC was very keen to set up at least 49.5 MW capacity of wind farm in the current financial year

(before 31st March, 2009), it has been decided that the techno-commercial bid evaluation must be completed before 22nd January 2009.

The technical bids received by GSPC from the two bidders have been forwarded to TERI for assessment. In the preliminary scrutiny itself it has been found that both the bid was mostly fulfilling the required format. A detailed evaluation of both the bids were carried out comparing the WTG offered and verifying the energy generation offered by the bidders using WAsP software. Both the bids were declared technically qualified and the pricebid of both were opened.

After opening the price bid, the evaluation was carried out based on the pre set financial conditions as given in the tender document, and the cost details offered by the bidders in their bid. The analysis was carried out for 50 MW, 100 MW and 200 MW projects for both the bidders and it was found that the prices of M/s Suzlon Energy Limited was lower then the M/s Vestas Wind Technology India Limited, and also the return on investment for the offer of M/s Suzlon Energy Limited was lower then the M/s Vestas Wind Technology India Limited. Based on the analysis it was recommended that the GSPC may give the order tio Suzlon Energy Limited for development of the wind farm in Gujarat.