

## COST BENEFIT ANALYSIS

Cost Benefit analysis for 400 kV D/C Khavda to Bhuj (PGCIL) Sub-station (with Multi Circuit Tower in forest stretch) of M/s Adani Green Energy Limited in Gujarat State is estimated as per the Guidelines of Govt. of India, issues with letter no. 7-69/2011-FC(Pt.) dated 1<sup>st</sup> August, 2017, and given below:

**Table-A: Estimation of cost of forest diversion:**

Sl.	Parameters	Cost (Rs. Lakhs)
1	Ecosystem services losses due to proposed forest diversion  (Economic value of loss of eco-system services due to proposed forest diversion has been taken as the "net present value (NPV)" of the forest land being diverted as prescribed by the Central Government (MoEF&CC)  NPV rates taken as Rs. 4.38 Lacs per Ha born by the Project, works out to be Rs.657 Lakhs for 149.922 Ha Forest Land	657
2	Loss of animal husbandry productivity (Taken at 10% of NPV)	65.7
3	Cost of human resettlement (There is no human resettlement due to proposed forest diversion)	Nil
4	Loss of public facilities and administrative infrastructure (Roads, building, schools, dispensaries, electric lines, railways, etc.) on forest land, which would require forest land if these facilities were diverted due to the project  (No public facilities and administrative infrastructure are involved)	Nil
5	Possession value of forest land diverted (Taken at 30% of NPV)	197.10
6	Cost of suffering to oustees (There are no oustees due to proposed forest diversion)	Nil
7	Habitat Fragmentation Cost (Taken at 50% of NPV)	328.5
8	Compensatory afforestation and soil & moisture conservation cost  (CA arrived at Rs.3.0/- lacs per Ha for 149.922 Ha) (Cost for double the area is Rs. 900 lakhs)	900
9	Project Cost:  Fixed assets, inclusive of investments, Current assets, Loans & Other Expenditures like preoperative expenses, interests during construction, etc	20600.00
	<b>TOTAL (A)</b>	<b>22748.3</b>



**Table-B: Estimation of benefits of forest diversion:**

Sl.	Parameters	Benefits (Rs. Lakhs)
1.	Increase in productively attributed to the project (ADANI GREEN ENERGY LIMITED (AGEL) is in process of developing 1500 MW Wind plant and 750 MW of solar plant in Khavda area in Kutch district of Gujarat. The connectivity for the said plants are granted to connect at PGCIL, Bhuj Pooling sub-station. This dedicated line shall add 175748 million unites of electric energy over life period of 25 year to the national grid. As the line is connected to the ISTS, the generated power would feed the power to the respective reason/states; where there is shortfall of electricity. Hence productively attributed cannot be quantified in the state of Gujarat, India)	NA
2.	Benefits to the economy to the specific project. (The development of such projects in Khavda area of Gujarat state shall have multiple national benefits; such as, (i) reduction of carbon footprint in tune of 95 Million-Ton over period of 25 years due to usage of renewable source of energy, (ii) contribution to growth of national GDP, (iii) meeting the rising demand of electricity, etc, hence benefits to economy cannot be quantified in the state of Gujarat, India)	NA
3.	No. of population benefitted due to specific project (As the plant shall be connected to ISTS through the dedicated line, the generated power would feed the power to the respective reason/states; where there is shortfall of electricity.) Hence number of population directly benefitted cannot be quantified for the state of Gujarat, India.	NA
4.	Economic benefits due to direct and indirect employment due to the project. During Project Stage, the project will provide employment to 20 Permanent and 150 Temporary Employment for a period of 1 year. The Economic Benefit is estimated at Rs. 419 Lakhs (For Permanent Employment, Average Benefit of Rs. 10 Lakhs/Year per person and for Temporary Employment, Rs. 400/- per man - day) During Operation Stage (calculated for 25 Years), the project will provide employment to 8 Direct and 10 Indirect Employment for a period of 25 Years. The Economic Benefit is estimated at Rs. 2365 Lakhs (For Direct Employment, Average Benefit of Rs. 10 Lakhs/Year per person and for Indirect Employment, Rs. 400/- per man day)	2419.00
5.	Economic benefits due to Compensatory afforestation (The NPV of the CA Land considered as prescribed by the Guidelines, 7-69/2011-FC(Pt.) dated 01.08.2017) NPV rates taken as Class III Medium Density Forest Rs. 8.03 Lakhs/Ha for 149.922 Ha. (benefit for double the area is Rs. 2407.74 lakhs)	2407.74
6.	Revenue from the Project for 25 Years @ 140 Cr/Annum)	350000
	<b>TOTAL (B)</b>	<b>354826.7</b>



**Cost: Benefit Ratio**

**A.** Cost of Project (including loss of Forest) = **22748.3 Lakhs**

**B.** Financial Benefits of the Project: **Rs. 354826.7 Lakhs**

Cost Benefit Ratio (**1: B/A**) = 1: Rs. **354826.7** Lakhs/Rs. **22748.3** Lakhs

**= 1: 15.5**

**The Cost Benefit Ratio of the Project is estimated at 1: 15.5**

