

Mixed energy cost price of communication base stations in India





Overview

How much does a base station cost?

Base Transceiver Station (BTS). Table 5 gives the cost estimates for a Base Station obtained from the Operator. Thus the total cost of a Base Station and the supporting infrastructure is INR 4.5 Million approximately. Let us consider that there are 5 villages and the objective is to cover all these villages with minimum number of towers.

How do energy costs affect telecom operators in India?

The resulting energy costs alone account for 25 percent of the total network operating costs¹, affecting the profitability of the operators. The telecom tower industry in India is estimated to consume over 2.5 billion litres of diesel annually making it the second largest consumer of diesel in the country.

Does a GSM base station provide good coverage in rural parts of India?

We assume that a typical GSM Base Station in rural parts of India provides coverage to areas within 5 Kilometres (KM) radial distance. We also assume that villages within 2KM radial distance of the Base Stations would receive a stronger signal strength thereby enjoying higher quality of service.

How much power does a base station have?

In the Indian scenario the height varies between 40m-60m, with a large number of operators choosing to place the antennae in the 40m segment. The transmission power of the Base Station is fixed at 20W, the maximum permitted by the licensor. The antennae height and power are, therefore, taken to be fixed in the given context.

How many base stations are available?

The number of Base Stations made available is varied and the proportion of population that can be covered with high quality signal is obtained. The number of Base Stations is taken to be a constraint for the various scenarios.



The proportion of population to be covered (i.e within 5KM) is 100% in each scenario and is taken as a constraint.

Which equipment consumes the most energy in base stations?

largest energy consumer in base stations is the radio frequency equipment (power amplifier plus the transceivers and cables), which consumes approximately 65% of the total energy, the power amplifiers of transceivers, the radio frequency



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