

REPORT ON
DEMONSTRATION OF RENEWABLE ENERGY SYSTEMS
AT



ROYAL COMPLEX

MANDU

UNDER

SPECIAL AREA DEMONSTRATION PROJECT SCHEME OF
MINISTRY OF NEW AND RENEWABLE ENERGY

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1. ***History***

Mandu, or Mandavgarh, is a ruined city in the Dhar district in the Malwa region of western Madhya Pradesh state, central India. In the 11th century, Mandu was the sub division of the Tarangagadh or Taranga kingdom . This fortress town on a rocky outcrop about 100 km (60 miles) from Indore is celebrated for its fine architecture.

Perched along the Vindhya ranges at an altitude of 2,000 feet, Mandu, with its natural defenses, was originally the fort capital of the Parmar rulers of Malwa. Towards the end of the 13th century, it came under the sway of the Sultans of Malwa, the first of whom named it Shadiabad - 'city of joy'. And indeed the pervading spirit of Mandu was of gaiety; and its rulers built exquisite palaces like the Jahaz and Hindola Mahals, ornamental canals, baths and pavilions, as graceful and refined as those times of peace and plenty.

Each of Mandu's structures is an architectural gem; some are outstanding like the massive Jami Masjid and Hoshang Shah's tomb, which provided inspiration to the master builders of the Taj Mahal centuries later.

Mandu is a celebration in stone, of life and joy, of the love of the poet-prince Baz Bahadur for his beautiful consort, Rani Roopmati. The balladeers of Malwa still sing of the romance of these royal lovers, and high up on the crest of a hill, Roopmati's Pavilion still gazes down at Baz Bahadur's Palace, a magnificent expression of Afghan architecture. Under Mughal rule, Mandu was a pleasure resort, its lakes and palaces the scenes of splendid and extravagant festivities. And the glory of Mandu lives on, in legends and songs, chronicled for posterity.

Mandu, due to its strategic position and natural defenses, was an important place with a rich and varied history. It was an important military outpost and its military past can be gauged by the circuit of the battlemented wall, which is nearly 37 km (23 miles) and is punctuated by 12 gateways. The wall encloses a large number of palaces, mosques, Jain temples of 14th century and other buildings. The oldest mosque dates from 1405; the finest is the Jama Masjid or great mosque, a notable example of Pashtun architecture. The marble domed tomb of this ruler is also magnificent

Jahaz Mahal

This 120 mt long "ship palace" built between the two artificial lakes, Munj Talao and Kapur Talao is an elegant two storeyed palace. Probably it was built by Sultan Ghiyas-ud-din-Khilji for his large harem. With its open pavilions, balconies overhanging the water and open terrace, Jahaz Mahal is an imaginative recreation in stone of a royal pleasure craft. Viewed on moonlit nights from the adjoining Taveli Mahal, the silhouette of the building, with the tiny domes and turrets of the pavilion gracefully perched on the terrace, presents an unforgettable spectacle.

Hindola Mahal

An audience hall, also belonging to Ghiyas-ud-din's reign, it derives its name of "swinging palace" from its sloping sidewalls. Superb and innovative techniques are also evident in its ornamental facade, delicate trellis work in sand-stone and beautifully moulded columns.

To the West of Hindola Mahal there are several unidentified buildings which still bear traces of their past grandeur. Amidst these is an elaborately constructed well called Champa Baoli which is connected with underground vaulted rooms where arrangements for cold and hot water were made.

Other places of interest in this enclave are Dilawar Khan's Mosque, the Nahar Jharokha (tiger balcony), Taveli Mahal, the two large wells called the Ujali (bright) and Andheri (dark) Baolis and Gada Shah's Shop and House.

2. Background:

Royal Complex is one of the main tourist attractions of Mandu and attracts more than one lakh tourists annually. Accordingly it is covered in Category III for full support up to Rs. 25 lakhs. A team of officials led by Shri Suresh Agrawal, Director, MNRE, and official of MPUVN has visited Mandu on 8th January, 2011. Based on the discussions and visit, the details of the report are as under:

3. Existing Arrangement

There is no specific arrangement of illumination or lighting of the monument during night.

4. Proposal for consideration

- 1. A Solar power Plant of 10 KW, complete with adequate battery back up for lighting and illumination along with street lights and energy efficient lamps**

The SPV power plant is proposed to be located in a suitable location inside the complex so that it will neither obstruct the view of the main monuments nor interfere with the buried archaeology, but at the same time is visible to the visitors so as to create desired demonstration effect for renewable. The safety of the SPV power plant will also have to be ensured by ASI.

5. Cost Estimates

Based on the discussions with the manufacturers and prevailing rates, the following cost estimates of the project has been worked out ;

Sl.No.	Item	Estimated cost (Rs. in lakhs)
1	A Solar power Plant of 10 KW, complete with adequate battery back up for lighting and illumination along with street lights and energy efficient lamps and agency charges	25.00
	Total	25.00

The above cost will include 5 years annual maintenance contract charges also.

6. Sanction of proposal and Commitment for balance funds

As per the scheme, Ministry can provide full support up to Rs. 25 lakhs for the project including agency charges. The additional cost, if any will be provided by the State/ASI. The project will be sanctioned to Madhya Pradesh Urja Vikas Nigam Ltd.(MPUVN), the State Nodal Agency for Madhya Pradesh.

7. Implementation Arrangements

The project will be implemented and maintained by Madhya Pradesh Urja Vikas Nigam Ltd.(MPUVN), the State Nodal Agency for Madhya Pradesh in consultation with the local administration. The project will be completed within one year of its sanction.

8. Operation and Maintenance

Under the scheme, provision of five year Annual Maintenance Contract has been built in with the original manufacturers. AMC will be renewed by ASI after the expiry of this period to ensure trouble free operation of the equipment and devices. Training to local operators will be built in the contract.

9. Conclusion

Mandu is a celebration in stone, of life and joy, of the love of the poet-prince Baz Bahadur for his beautiful consort, Rani Roopmati. The majestic monuments with divine lighting and illumination will enhance their scenic beauty multifold.



Jahaz Mahal before renovation



Jahaz Mahal now



Hindola Mahal before renovation



Hindola Mahal now