

Remote Village Electrification

1. Introduction

The Remote Village Electrification (RVE) Programme was designed to provide financial support for electrification of those remote unelectrified census villages and unelectrified hamlets of electrified census villages where grid-extension was either not feasible or not cost effective; and were not covered under Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY). Such villages were to be provided basic facilities for electricity/lighting in distributed power generation mode, through various Renewable Energy (RE) sources like Small Hydro Power (SHP), biomass gasification based electricity generation systems, Solar Power Plants (SPP), etc depending upon local availability.

Projects under the RVE Programme were intended to cover all the households in the village/hamlets, including those in the *dalit bastis* of the village, and creation of capability for availability of electricity as laid down in the National Electricity Policy 2005, i.e., a minimum of one kWh per household per day. However, if the State Governments concluded that the norm of one kWh per household per day was not achievable in a cost effective manner through various RE technologies, due to inadequate availability of the resources, then as a last resort they could decide to provide at least the basic lighting facilities through Solar Home Lighting Systems (SHLSs) for each of the willing households in the village. However, as per the Rural Electrification Policy 2006 of the Government, villages/hamlets using isolated lighting technologies like SPV, were not to be designated as “electrified”.

The programme was to be implemented through State Nodal Agencies (SNAs)/ Power Departments/Electricity Boards/Corporate Entities with active involvement of District-level Bodies, Panchayati Raj Institutions, Village Councils, etc. However, the State Governments were to notify the nodal agency which would be responsible for coordination of all the efforts in the State pertaining to electrification of remote unelectrified census villages through non-conventional energy sources.

2. Targets and achievement

2.1. Position of electrification of remote villages/hamlets

At the end of the 10th Five Year Plan (FYP), 3,254 remote villages/ hamlets had been covered under the programme. The State wise targets and achievements for the period 2007-14 are given in **Annexure XVI**. The consolidated position as per MNRE for the period 2007-14 is detailed in Table 34 below:

Table 34: Targets and achievement under 11th and 12th FYP

S. No.	Year	Target (No. of villages/hamlets)	Achievement (No. of villages/hamlets)
Up to 10 th Five Year Plan Period		#	3,254
11th Five Year Plan Period (2007-12)			
1	2007-08	2,000	1,297
2	2008-09	1,500	326
3	2009-10	1,500	1,013
4	2010-11	1,500	1,537
5	2011-12	500	1,056
	Total	7,000	5,229
12th Five Year Plan Period (upto 2014)			
6	2012-13	Not fixed	975
7	2013-14	Not fixed	860
	Total	Not fixed	1,835
	Grand Total		10,318

Source: MNRE.

- Figure not furnished by MNRE.

Table 34 above revealed that progressively from 2007-08 onwards the coverage under the RVE programme declined. No targets were fixed by MNRE for the years 2012-13 and 2013-14. MNRE stated (July 2015) that it had sanctioned 13,059 villages/hamlets during the period 2007-14 out of which 11,308 had been completed/ electrified. The total of the year wise achievement as depicted in Table 34 did not match with the achievement claimed by MNRE for the period 2007-14.

It was also observed that the release of Central Financial Assistance (CFA) decreased from ₹ 132.81 crore in 2007-08 to ₹ 17.92 crore in 2013-14 and this was not commensurate with the RVE targets.

Such wide variations in all parameters of target setting and achievement raise doubts on the reliability of the planning process and the data maintained by MNRE.

2.1.1. Short achievement of targets

Under RVE programme, Andhra Pradesh, Goa, Kerala and Nagaland completed electrification in villages/hamlets as per MNRE's sanction. However, Chhattisgarh, Jammu & Kashmir, Jharkhand, Karnataka, Odisha, Uttar Pradesh and West Bengal could not cover all the villages/hamlets sanctioned by MNRE under the scheme.

2.1.2. Coverage of excess villages/hamlets under RVE programme

Under RVE programme, in the following States more villages/hamlets were reported to be covered than the villages identified as eligible by REC, thus indicating that ineligible villages/hamlets were covered under the RVE programme. The States in which the number of villages/hamlets identified as eligible as REC were less than the actual coverage reported are given in Table 35.

Table 35: States which covered more villages/hamlets than identified as eligible by REC.

State	Number of villages/hamlets verified by REC	Number of villages/hamlets completed upto 2013-14
Goa	0	19
Haryana	149	241
Himachal Pradesh	1	20
Tripura	583	606

2.1.3. Improper planning by the States

As per the scheme guidelines of RVE, villages/hamlets covered under RGGVY based on certification by REC, were not eligible for coverage under the RVE programme. However, Audit observed deviations in this regards in some States. The State wise audit findings are given below:

Assam

- i. The State Government notified three agencies for implementing RVE – Assam Power Distribution Company Limited (for 1,057 villages), Assam Energy Development Agency (AEDA) (for 920 villages) and Forest Development Agencies (for 162 villages). As of November 2014, 191 villages remained to be electrified, but no record of basis of prioritization among villages was available. All residents of the villages were not covered and the basis of selection of individual beneficiary was not on record.
- ii. Audit observed that out of 206 villages identified for electrification, one had no beneficiaries, ten were already electrified and four were covered under village energy security programme. Four villages electrified under RVE programme had already been covered under RGGVY. As per DPR approved in February 2008, in 19 villages in Dhubri district there was a vast difference in the number of beneficiaries actually present, which led to delay of four years in implementation of scheme.

Chhattisgarh

REC prepared DPR for electrification of 10 villages under RGGVY. However in disregard of the programme guidelines, electrification of Kurkuriya village (Jashpur district) was done by CREDA through solar power. Similarly, out of 85 villages covered under RGGVY scheme, nine more villages were being electrified by CREDA.

Jharkhand

Jharkhand Renewable Energy Development Agency (JREDA) did not have a complete list of un-electrified villages in the State. During 2007-14, it prepared annual work plans to implement the programme in 792 villages but could not send proposals to MNRE during 2007-08 and 2012-14. As such, programmes of RVE was sanctioned by MNRE only for 251 villages. However, 353 villages¹ were covered under this programme during 2007-14.

¹ RVE for 102 villages was sanctioned in 2006-07.

Jammu & Kashmir

Jammu and Kashmir Energy Development Agency (JAKEDA) had not undertaken surveys of remote villages for assessment of demand for electricity and availability of RE sources. As such, DPR and lists of beneficiaries had not been prepared despite the fact that JAKEDA received ₹ 2.86 crore from MNRE, which had been utilized on unapproved items like purchase of five vehicles, Petrol, Oil and Lubricants, Travelling Allowance, air fares, lunch in hotels, repair of vehicles, hiring of vehicles, office equipment, wages etc. during 2008-14. Audit observed that the SNA relied on the lists of remote villages/ beneficiaries framed by the Rural Development Department, which were vetted by the concerned Deputy Commissioners. The criteria adopted by the Rural Development Department for formulation of lists of remote villages/ beneficiaries was not on record. It was seen in audit that long term as well as short term targets had not been fixed for electrification.

MNRE stated (May 2015) that identification of beneficiary and survey for demand of electricity was a State subject and a clarification will be sought from JAKEDA with reference to expenditure. The reply is not tenable because MNRE did not monitor the use of CFA either through utilization certificate or otherwise.

Odisha

RVE programme was implemented in eleven districts during 2007-12 with CFA of ₹ 51.77 crore and State Financial Assistance of ₹ 21.93 crore. The targeted number of 1,621 villages were electrified after delays ranging from five months to three years due to indecisiveness of the State Government. Further, delay in release of State share of financial assistance, delay on the part of administrative department² to finalise mechanism for implementation and consequential delay in placement of orders on vendors, etc led to CFA of ₹ 1.45 crore pertaining to the period 2008-10 to be refunded (January 2013).

West Bengal

Out of 24 villages only six villages had been covered due to delay in tendering. Further, provision was made for electrification of 18 villages by SHL system but the project had not yet commenced. MNRE stated (May 2015) that the State had been advised through meeting, video conferencing to expedite the implementation.

2.2. Funding of the programme

As per MNRE guidelines, CFA of upto 90 *per cent* of the costs of the RE generation systems was to be provided for approved projects, subject to the maximum amounts, and balance cost was to be financed through contributions from State funds, beneficiaries, or other sources.

Further, 70 *per cent* of the CFA was to be released along with sanction. The amount was to be used as early as possible. In case it was not possible to utilize the funds, the same was to be kept in interest bearing separate bank account and the accrued interest credited towards CFA. The second installment of 30 *per cent* was to be released after the receipt of

² Science and Technology Department of the Government of Odisha.

Utilisation Certificates/ Statement of Expenditures (SoEs) and periodical monitoring reports from SNA /independent bodies.

2.2.1. Irregularities in release of CFA and its utilisation

Audit observed that there were issues like non release of CFA by MNRE, CFA not being released in proportions fixed for the programme, CFA being kept in non-interest bearing account etc. The State wise audit findings are given below:

Assam

During 2005-14, MNRE sanctioned eight packages covering 882 villages with a CFA of ₹ 62.13 crore. As per guidelines the initial installment of 70 *per cent* was to be released along with the sanction. Audit observed that in five packages, MNRE released initial installment of only 0.38 *per cent* to 31 *per cent* and subsequent installments were released after lapse of 32 to 1,627 days. CFA of ₹ 12.20 crore was yet to be released by MNRE. Delay in release of sufficient installments impacted smooth progress of the projects. AEDA submitted Utilisation Certificates (UCs) with a delay of 652 to 1,755 days. Further, AEDA did not have an interest bearing account for the CFA received, which led to loss of interest of ₹ 67.72 lakh during phase I of the programme.

Meghalaya

Contrary to guidelines, in respect of two projects (70 and 66 remote villages) CFA of ₹ 2.18 crore and ₹ 1.68 crore released by MNRE was kept in non-interest bearing account leading to loss of interest of ₹ 9.78 lakh. MNRE withheld the final release of installment of ₹ 0.89 crore and ₹ 0.71 crore, respectively due to violation of guidelines and non evaluation of projects by third party.

Odisha

During 2006-07 to 2011-12, Odisha Renewable Energy Development Agency (OREDA) neither kept the fund in a separate bank account nor credited the interest on the unutilised funds to that account. Thus, CFA of ₹ 15.84 lakh to ₹ 10.63 crore were blocked without utilisation for a period ranging from 15 to 652 days leading to loss of interest of ₹ 1.72 crore. OREDA stated that interest accrued on this account is utilized to meet several contingencies in the execution of the programme. However, it was observed that interest earned on the funds were not identified and added to the CFA.

Rajasthan

During the years 2011-13, MNRE sanctioned ₹ 13.41 crore for installation of 12,941 SSLs. The systems had been commissioned, but ₹ 3.29 crore were yet to be released by MNRE for want of third party evaluation.

2.2.2. Irregularities in collection of beneficiary share

The State wise audit findings are given below:

Assam

- i. Audit observed that there was excess collection of beneficiary share of ₹ 2.72 crore by the implementing agencies for SHLSs in 305 villages.
- ii. AEDA did not procure systems at the cost fixed by MNRE which led to an additional burden of ₹ 28.33 lakh to be shared between the State Government and the beneficiaries.

Jammu & Kashmir

Beneficiary share of ₹ 750 per SHLS and ₹ 500 per SL was to be recovered before issue of these equipment. Audit observed that an amount of ₹ 25 lakh had been outstanding against district officers as beneficiary share as of March 2014 for the systems issued during 2009-13. Further, foolproof mechanism for recovery of beneficiary share had not been formulated as beneficiary share to be recovered was not indicated in the SHLS distribution lists. As a result, the district officer, Baramulla had collected (2011-12) beneficiary share in the range of ₹ 1,600 to ₹ 3,000 in villages of Jabla and Gakhrote in place of approved amount.

3. Implementation of the RVE programme

Audit noticed instances of inordinate delays in completion of projects, award of contracts to ineligible contractors, irregular distribution of lighting systems and incomplete/non-installation of Remote Village Electrification systems. The detailed audit findings are given below:

3.1. Delay in completion of projects

As per MNRE sanctions, all projects were to be completed within one year of release of funds. However, Audit observed that there were inordinate delays in completion of projects. The State wise audit findings are given below:

Chhattisgarh

Under RVE programme, MNRE sanctioned ₹ 23.18 crore for 314 villages and released ₹ 16.21 crore during 2007-09. CREDA had executed the electrification work of 252 villages. MNRE did not release the remaining CFA as electrification work could not be completed even after seven years, due to law and order problems affecting the villages.

Meghalaya

A project of 70 villages approved in March 2007 was completed with a delay of 22 months as State share was not released on time and there were changes in the list of villages³ and increase in number of households⁴. Another project of 66 villages sanctioned in March 2010 was completed (May 2011) with delay of two months and only 52 villages were electrified⁵ as 11 villages were covered by other schemes and three villages were not inhabited.

MNRE stated (May 2015) that efforts were being made through video conferences and meetings to expedite the implementation within the stipulated time.

3.2. Non utilization and diversion of funds

Audit observed that there were cases of non utilization of funds and diversion of funds. The State wise audit findings are given below:

Bihar

An amount of ₹ 20 lakh received from the State Government during 2007-08 was lying unutilized for last six years as no project was taken up by BREDA. Further, ₹ 0.52 lakh was transferred to Rajiv Gandhi Akshaya Urja Diwas during 2012-13 from this amount. BREDA accepted the facts.

Chhattisgarh

MNRE sanctioned (June 2007) an amount of ₹ 2.14 crore for electrification of village Kachhar. Instead electrification work at three villages (Arsiya, Lalpani, Tumnar) was done by utilizing MNRE share of ₹ 59.40 lakh. Further, cases of deviation in number of sanctioned households, SHLS, SLS, power plants were also noticed. In some villages SPV Power Plants had been sanctioned but no Power Plants were installed and electrification was done through SHLSs and SLSs only.

MNRE stated (May 2015) that during the final settlement CFA was disbursed only for those villages which were approved and no deviation was allowed without prior approval. The reply is not tenable because electrification was not done in the villages as per the sanctions accorded.

3.3. Award of contract to ineligible contractors

As per MNRE guidelines, competitive bidding process was to be followed in award of works to contractors. For SPV systems, procurement was to be done from suppliers having valid test certificate from a MNRE authorized test centre. The State wise audit findings are as follows:

³ 12 villages in the original list had to be replaced as 11 villages were unwilling and one was abandoned.

⁴ There was an increase in the total number of households which led to increase in installation of SHLSs to 1,570.

⁵ Six villages were already electrified by MeECL, five villages were covered by it under Ministry of Tribal Affairs Programme/other programme and three villages were uninhabited.

Jammu & Kashmir

JAKEDA placed orders⁶ (26 October 2009) for supply of 11,227 SHLS⁷ for ₹ 11.24 crore. Audit observed that the supply order was placed without the approval of the JAKEDA board and it was split into 14 supply orders in order to avoid cheques being jointly signed by the CEO and Commissioner/ Secretary. Taking serious note of the matter the Minister⁸ ordered cancellation (November 2009) of supply order, but JAKEDA did not cancel the supply order placed with Directorate General of Supplies and Disposals (DGS&D). Further, DGS&D rate contract was to lapse by 31 October 2009. The new DGS&D rate contract for the systems was lower (₹ 12,500) than the previous rate contract (₹ 12,978), leading to loss of ₹ 32.81 lakh.

MNRE stated (May 2015) that at the time of final Settlement the SNA had to certify that the CVC guidelines have been followed while selecting the contractor.

Nagaland

M/s Kuwe Mero, who had qualified in both the technical and financial bids had quoted the lowest rate among the tenderers for supply of SHLSs and SSLs. The supply orders were however awarded to M/s Kuovisie Rio and M/s Kevi Chadi at a rate higher than that quoted by M/s Kuwe Mero. No justification for selection of bidder at higher rate was on record. This led to excess expenditure of ₹ 26.60 lakh.

The Department of New and Renewable Energy (DNRE) accepted the fact and stated that though lowest rate was recommended for award of contract, the Directorate of DNRE, recommended award of contract to higher bidder. Accordingly, supply order was issued.

3.4. Excess/irregular distribution of RVE systems

As per MNRE guidelines, the implementation of the RVE systems should be certified by authorized village/district level officials/bodies to the effect, that the village has been electrified or that work had been carried out as per the sanction order/DPR (for SHLS). Further, periodic monitoring should be done by the SNA/independent agency and report thereof submitted to MNRE. MNRE should also monitor the progress of the project through the reports submitted by the SNAs so that RVE systems are distributed as per MNRE sanction. The State wise audit findings are given below:

Jammu & Kashmir

- i. In four test-checked districts, records showed that 25,016 SHLSs were approved for 25,016 households of 148 villages. JAKEDA procured only 22,690 SHLSs out of which only 10,324 SHLSs were distributed as per sanction. 3,382 SHLSs were distributed in 34 unapproved villages/ hamlets without obtaining the approval of MNRE and 8,984 SHLSs were distributed in 37 electrified hamlets. The State Government stated (July 2014) that the villages which had been electrified during the process of obtaining

⁶ With Director General Supplies and Disposals (DGS&D), New Delhi.

⁷ 6,872 SHLS of M/s Bharat Electronics Ltd make and 4,355 SHLS of M/s Kotak Urja Private Ltd. make.

⁸ Science and Information Technology Department.

sanction from MNRE were dropped and only actual un-electrified villages were covered. However, Audit observed that the due process of obtaining prior permission from MNRE for distribution of SHLSs among the beneficiaries was not followed and SHLSs were distributed in electrified hamlets.

- ii. The executive committee of the JAKEDA decided (May 2009) that the hospitals which were suitably connected with grid would not require SPP as a backup and decided to install SPP only in the health centres of the REC cleared villages which were without electricity. Records, however, showed that 47 SPPs were installed at district/sub-district hospitals which were grid connected. Similarly, 40 SSLs (cost: ₹ 10 lakh) were installed (November 2011) at four hospitals of Jammu city which were already provided with grid based SSLs.

3.5. Incomplete /Non deployment of RVE systems

Audit observed that there were cases of incomplete installation of RVE systems and non deployment of RVE systems. The State wise audit findings are given below:

Jammu & Kashmir

MNRE had released CFA of ₹ 64.32 crore during 2007-14 for installation/distribution of 1,04,118 SHLSs/SSLs. However, only 48,298 (46 per cent) SHLSs had been distributed as of March 2014.

Jharkhand

As per MNRE guidelines, RVE systems installed in the village should be redeployed if the village was connected to a grid before expiry of at least five years of the installation of RVE systems.

However, Audit observed that in 14 villages of Potka block in East Singhbhum, RVE systems (SHLS: 902 and SSLs: 89) installed were not redeployed on getting grid connectivity under RGGVY.

Uttarakhand

The State Government approved (December 2008) construction of two SHP projects at Pinswad (50 kW) and Kotijhala (200 kW) under RVE programme for providing electricity to 2,700 inhabitants of 502 households for ₹ 0.81 crore. Construction of both projects was stopped (December 2012) after incurring an expenditure of ₹ 0.43 crore because of lack of interest by Urja Samitti, deviation in drawing, substandard work (May 2011) and further damage caused by natural disaster in June 2013. MNRE stated (May 2015) that as informed by the SNA, the work was in progress.

West Bengal

MNRE sanctioned ₹ 36.76 crore (February 2010) with CFA of ₹ 21.60 crore for electrification of 18 remote villages of Sundarban by providing SHLS to 23,845 households and 2,008 SSLs.

Audit observed that no work was taken up (September 2014) because of delay in finalization of the beneficiary list, delay in tendering and absence of infrastructural support. Although only ₹ one lakh was spent but UC for the full amount was sent to MNRE. MNRE also did not monitor the implementation of the project. MNRE stated (May 2015) that it accepts the UC certified by SNA, however, in this case a clarification will be sought from WBREDA and that WBREDA has been instructed to finish the project in time.

4. Monitoring and evaluation

As per MNRE guidelines, the concerned State Departments/ Implementing Agencies were to ensure close monitoring of the implementation of the projects and to provide periodic progress reports to MNRE. Third party monitoring by an independent, reputed agency after completion of the projects was mandatory before release of the final installment. MNRE provided ₹ 50,000 per village as service charge to the Implementing Agencies for third party monitoring by an independent, reputed agency.

After installation also it was the responsibility of the implementing agencies to ensure functionality of the systems and periodic monitoring was to be carried out by them. The district/village level agencies were to be closely associated in planning, implementation and monitoring of all projects.

MNRE was also to carry out its own monitoring and evaluation of the projects directly or through independent agencies appointed by it.

Test audit revealed deficiencies in monitoring by SNAs and MNRE. The State wise audit findings are given below:

Arunachal Pradesh

Arunachal Pradesh Energy Development Agency (APEDA) conducted third party monitoring only once after installation of SHLs under RVE programme in 2005-06 by Arunachal Pradesh Aditya Solar Society, Itanagar (NGO). However, there was no data on the number of SHLs functioning. MNRE stated (May 2015) that clarification will be sought from APEDA in respect to evaluation report.

Assam

The three⁹ implementing agencies got the systems evaluated by third parties like Assam Financial Corporation, IIT Guwahati, Tezpur University etc. The deficiencies pointed out included non installation of systems as per work order, insufficient training, systems being stolen, systems sold/transferred to others, excess collection of beneficiary share, demands for grid connected power so that other household needs could be fulfilled, non creating of corpus funds for maintenance and replacement of batteries, systems not working to the full extent etc.

⁹ AEDA, APDCL and FDAs.

Chhattisgarh

CREDA received an amount of ₹ 1.09 crore from MNRE as service charges for RVE projects but monitoring and evaluation of the completed RVE projects was not conducted through any agency/organisation. MNRE stated (May 2015) that third Party monitoring was a mandatory requirement for final settlement of projects and CREDA had been asked for submission for the same.

Jammu & Kashmir

- i. Audit observed that the SNA had neither carried out periodic inspections nor monitored the implementation of the projects through independent agency. As a result, performance of these projects could not be ascertained. The State government stated (July 2014) that since the projects had been recently completed, the third party monitoring got delayed and it would be taken up immediately. The reply is not tenable as RVE had been running since 2007-08.
- ii. The UCs and SoE in respect of installation of SHLSs under RVE programme were not submitted to MNRE within the scheduled period of time as detailed below:
 - UCs and SoE in respect of electrification of 68 villages (sanctioned in February 2009), 77 villages (March 2010), 27 villages (March 2010), 80 villages and 20 hamlets (March 2010) and 48 villages (July 2010) were submitted to the MNRE in January 2013 after a delay of 31 to 47 months;
 - The UCs and SoE in respect of 12 projects sanctioned during November 2007 to February 2012 were submitted to the MNRE during the period April 2010 to May 2014 after delays ranging between 14 and 36 months; and
 - The UCs and SoE in respect of installation of one SPP of 100 kW capacity sanctioned (December 2011) had not been submitted as of August 2014 due to non-completion of the project.

Kerala

Audit observed that no monitoring was done by the ANERT, thereby violating the terms and conditions of the RVE programme.

Maharashtra

- i. In 30 villages the quarterly reports were submitted for periods two to three years only as against the full duration of five years. Quarterly reports for the entire period were not available with MEDA in respect of the remaining five villages¹⁰.
- ii. In 14 villages the Gram Sevaks did not submit six monthly reports to MEDA, in the absence of which the functioning of solar equipments (home/street lights) could not be ascertained in audit.
- iii. The report on training, orientation and awareness programmes for operating the solar equipments for various target groups / stake holders conducted by the supplier during the period 2007-14 were not furnished to Audit. In the absence of reports, it could not be ascertained whether the trainings were conducted or not.

¹⁰ Bhatpur district Gadchiroli, Ahire-Khandi district Pune, Charmali district Jalgaon, Gongwada and Rameshgudam district Gadchiroli.

Meghalaya

Third party monitoring was done by private consultants only for the project of 70 villages. As per the monitoring report submitted, 97.49 *per cent* of the total systems were found available at the time of survey. However, in the absence of the third party monitoring report for the other project for electrification of 52 villages, the impact of the project implementation could not be ascertained in audit.

Nagaland

As per the DPR, a Village Energy Management Board (VEMB) was to be formed for long term sustainability of the project, monthly collection of revenue and periodic monitoring. However, records on actual functioning of the VEMB and its monitoring by DNRE could not be furnished to Audit. DNRE stated that as per MNRE guidelines, VEMB was formed in all the eight villages. However, collection of revenue was not done by VEMB inspite of the Department's directives.

Uttar Pradesh

Audit observed that there was no periodicity of sending monitoring reports to MNRE and the same was sent as and when demanded by MNRE. However, copy of reports could not be furnished to Audit.

Uttarakhand

SNA did not maintain any record to indicate functionality of systems under RVE which was also confirmed during physical verification.

MNRE stated (May 2015) that under the provisions of the RVE Programme, maintenance and long-term sustainability of installed systems was primarily the responsibility of the concerned State Governments/SNAs. The reply is not tenable because MNRE did not carry out its own monitoring and evaluation through an independent agency to address the problems.

5. Maintenance

Deficiencies in maintenance of systems were noticed across the sampled States due to under collection of user charges and deficiencies in maintenance arrangements. The detailed audit findings are given below:

5.1. Collection of user charges from beneficiaries

As per the programme guidelines, user charges on an upfront basis and/or monthly basis were to be collected from beneficiaries. Where SHLSs are used, a charge of ₹ 20 per month or ₹ 10 per month were to be collected depending on the model of SHLS installed. This money was to be kept in a separate account for use for replacement of batteries and other components. A willingness to pay this amount by the beneficiaries was to be obtained before installation. The State wise audit findings in this regard are given below:

Assam

Audit observed that the Village Electrification Committees remained non functional which led to beneficiary share not getting collected, maintenance issue not being taken up with the contractors / implementing agencies and non monitoring the use of electrical and electronic gadgets by beneficiaries which had an adverse affect on the life of the systems.

Chhattisgarh

CREDA invited tenders in 2011-12 for AMC of SPPs, SSLs and SHLSs installed in the villages. During the period 2000-01 to 2013-14, a total 708 villages/hamlets were electrified covering 25,873 beneficiaries. Audit observed that user charges of ₹ 20.45 lakh were not collected from beneficiaries.

Gujarat

Gujarat Energy Development Agency (GEDA) awarded contract for installation of 509 SHLSs and 39 SSLs under RVE programme during 2005-06 for electrification of 36 remote villages. These contracts had a provision for recovery of ₹ 20 per user per month as user charges for maintenance of SHLSs by the contractor. The three contractors were to install 509 SHLSs and should have recovered ₹ 6.11 lakh from the beneficiaries for the period of five years and deposited the same with GEDA. Audit observed that only Bharat Electronics Limited (BEL) had collected ₹ 30,500 and deposited the same with GEDA. Thus, there was short recovery of ₹ 5.80 lakh required for the replacement of batteries after the five year period.

Jharkhand

Test check of records of five villages revealed that JREDA did not have system to collect the beneficiary share for maintenance. SNA accepted the facts.

Jammu & Kashmir

Audit observed that JAKEDA distributed 48,298 SHLSs to households of un-electrified villages during 2008-13. However, Audit observed that the SNA did not obtain the requisite willingness from the beneficiaries for payment of user charges leading to an annual loss of ₹ 1.16 crore. The State Government stated (September 2013 and July 2014)) that it was very difficult to manage the collection of user charges in the rural and far flung areas as JAKEDA did not have adequate manpower for the purpose.

Maharashtra

Audit observed that under RVE programme for the period 2007-14, in 35 villages monthly charges amounting to ₹ 36.53 lakh were not recovered from 3,044 beneficiaries by the Village Panchayats.

Meghalaya

There was irregular collection of beneficiary contribution of ₹ 1,500 towards capital cost and ₹ 60 month towards maintenance. Further, there was no database of the installed systems with MNREDA, which indicated lack of monitoring. The same was also not checked by MNRE.

Nagaland

Though system of collection of ₹ 50 per month from beneficiaries through Village Energy Management Board (VEMB) was set up, no collections were being made as of November 2014.

MNRE stated (May 2015) that collection from beneficiary was not mandated by MNRE and it was upto to the States to decide considering successful implementation and maintenance of systems and that the State Government certify that the replacement of batteries after five years was their responsibility.

The reply is not tenable because as per MNRE guidelines the willingness to pay had to be taken from the beneficiaries before installation.

5.2. Deficiencies in maintenance arrangements

As per Programme guidelines, to ensure long term operation, maintenance and sustainability of the projects, appropriate arrangements were to be made for suitable AMC for a minimum period of five years. The State wise audit findings are given below:

Chhattisgarh

- i. In Gariyaband District, 81 villages were electrified through SPPs/SPV devices (commissioned during 2004 to 2008). Work order for operation and maintenance of the power plants in these clusters was issued to M/s Friends Solar Pvt Ltd, Raipur. As per conditions, the SSLs were to be operational for a minimum of 25 days and 90 *per cent* SHLSs should be operational in a month. Scrutiny of monitoring reports and payment vouchers for the period 2010-14 revealed that the SHLSs and SSLs and the power plant remained non-functional for three to 10 months continuously. For instance, SPPs at Paylikhand¹¹, Kochenga¹², Kurrubhata¹³ and Gajimuda¹⁴ were not functional due to theft of modules, inverter and battery problems. Thus, there was no electricity in these villages continuously for five to six months. Due to lack of proper maintenance of the systems, regular supply of electricity to the villagers could not be ensured. SNA accepted the facts (December 2014).
- ii. Audit also observed that out of the fund granted by the State Government under RVE programme, every year a provision of ₹ one crore was being made for village electrification Operation and Maintenance (O&M) fund which was kept in Terms Deposits (TD). The present value of TD was ₹ 10 crore (as of March 2014). Thus, fund provided for incurring O&M expenditure had been kept in TD, which was violation of the financial rules.

¹¹ June 2012 to October 2012.

¹² October 2010 to January 2011 & June 2012 to December 2012.

¹³ September 2013 to November 2013.

¹⁴ June 2012 to December 2012.

Haryana

HREDA signed Comprehensive Maintenance Contract (CMC) with the suppliers for maintenance of the systems which were commissioned in June-July 2006, for five years which expired in June 2011. Thereafter, for maintenance of the plants¹⁵ a village level Akshay Urja Samiti was formed. The said Samiti collected monthly charges of ₹ 60 from the beneficiaries to be used for repair and maintenance of the plant. The monthly charges of ₹ 1.50 lakh were collected from the panchayats for two years. Thereafter, the charges had not been deposited by the beneficiaries. After the expiry of warranty period, these systems remained non-functional.

Jharkhand

As per CMC, service centers of the suppliers were to send summary service reports to JREDA on half yearly basis regarding number of systems covered by the service station, number of systems working satisfactorily, number of complaints received, number of complaints attended, major cause of failure as observed and major replacement made. But, no such reports were submitted by the service centres to JREDA. As such JREDA was unaware of number of non-functional systems and reasons thereof.

Jammu & Kashmir

Audit observed that maintenance of SHLSs had not been provided by eight out of 13 suppliers, as these suppliers had not established service centers in the respective districts. Audit also observed that four out of five service centers established in district Doda were non-functional (August 2014) and that service centers had not been established in Anantnag and Poonch districts. Further, free of cost maintenance during the warranted period of five years was to be provided. But the service centre of M/s Kotak Urja established in Gurez charged fees of ₹ 200 to ₹ 400 from beneficiaries. JAKEDA had not initiated any action against the defaulting suppliers who had not established service centers or charged fees from beneficiaries. Accepting the facts, the State Government stated (July 2014) that JAKEDA had been ensuring setting up of proper service centers and that these would be strengthened further.

Kerala

As per the contract, the preventive/routine maintenance was to be done by the manufacturer at least once in every four/six months. For effective carrying out of maintenance at least one service centre was to be developed by the manufacturer for every 500 SPV systems. But the same was not done.

Nagaland

Department of New and Renewable Energy (DNRE) did not insert the clause of “security Deposit” of five *per cent* of the contract agreement while placing the supply order on M/s Kuovisie-Rio and M/s Kevi Chadi, with the result that the suppliers did not submit the security deposit of ₹ 4.59 lakh. Further, DNRE had to release ₹ 4.59 lakh (five *per cent* of the contract agreement) towards AMC to suppliers in a span of five years (at the rate of one *per cent* every year), however the same was released in full to suppliers.

¹⁵ SPV power plants of 5 kW at Babarwali, Khairi, Nagrasu, Thandaut, Kahlon and Dudhla hamlet of Panchkula District.

DNRE stated that it was due to inexperience and oversight and there was no complaint from beneficiaries as systems are working satisfactorily. However, in case of breakdown, the systems were not attended to by suppliers but were being individually maintained by the beneficiaries.

MNRE stated (May 2015) that under the provisions of the RVE programme, maintenance and long-term sustainability of installed systems was primarily the responsibility of the concerned State Governments/SNAs. The State Governments also undertook to provide funds and ensure replacement of batteries and other major maintenance expenditures as and when required. The CFA sanctioned by MNRE included the cost of a five year AMC with the suppliers. MNRE provided additional financial support for organization of training of beneficiaries and awareness camps. The reply is not tenable because due to lack of proper maintenance of the systems, regular supply of electricity to the villagers could not be ensured. The AMC was also not executed as per MNRE guidelines and service centres were not established. MNRE also did not monitor the working of the RVE programme.

6. Physical verification of systems installed under RVE programme

Audit conducted a physical verification of the RVE systems on a test check basis to see the condition of the systems installed and the problems faced by the users. Audit findings related to 45 sites in 11 States are given in Table 36. The State wise details are given in Annexure XVII.

Table 36: Summary of physical verification of RVE systems

System	No. of systems inspected	No. of systems of not working	No. of systems missing	Observations
SHLS	2,527	532	177	A large number of systems were lying idle due to issues such as battery failure, availability of quality grid power to users and lack of maintenance.
SLSL	345	48	6	Audit observed issues of delayed maintenance and poor quality of parts.
Biomass Gasifier plants	14	14	Nil	Audit observed that there was lack of user interest in these systems due to availability of grid power. Further the systems were provided in electrified villages.
SPP	1	1	Nil	System was not working and performance bank guarantee was not encashed.
SHP	1	1	Nil	Machinery defects resulted in idling of plant.
Total	2,870	585	183	

Note: Small Hydro Power (SHP), Solar Home Lighting System (SHLS), Solar Street Lighting System (SLSL) and Solar Power Plant (SPP).

Physical verification of sampled systems by Audit revealed that 20 *per cent* of the RVE's systems were not working and six *per cent* of the systems were found missing.

MNRE stated (May 2015) the clarification from all States will be sought with respect to the remarks made by the Audit.

7. Conclusion

Remote Village Electrification programme aimed at providing financial support for electrification of those villages and hamlets where electrification through grid extension was either not feasible or not cost effective. During the 11th Five Year Plan, MNRE set a target for electrification of 7,000 villages and achieved the same in 5,229 villages. Progressively from 2007-08, the coverage under the Remote Village Electrification programme declined over the years. No targets were fixed by MNRE for the years 2012-13 and 2013-14. It was also observed that the release of Central Financial Assistance decreased from ₹ 132.81 crore in 2007-08 to ₹ 17.92 crore in 2013-14 and this was not commensurate with the Remote Village Electrification targets.

Audit observed that in some States there were mismatches between the list of remote villages verified by Rural Electrification Corporation Limited, those sanctioned by the MNRE and the villages actually reported as covered by the States. In Assam and Chhattisgarh villages already covered under the Rajiv Gandhi Grameen Vidyutikaran Yojana, were also taken up under this Programme.

There were instances of irregularities in release of Central Financial Assistance and its utilization.

Audit also observed shortcomings in implementation of the programme in the States. There were instances of inordinate delays in completion of projects, award of contracts to ineligible contractors, irregular distribution of lighting systems and incomplete/non-installation of Remote Village Electrification systems.

There were instances of non maintenance of data to evidence functionality of systems under Remote Village Electrification. Monitoring reports were not available as per the scheme guidelines. There were deficiencies in the maintenance of systems due to under collection of user charges and deficiencies in maintenance arrangements.

Physical verification of sampled systems by Audit revealed that 20 *per cent* of the Remote Village Electrification systems were not working and six *per cent* of the systems were found missing, indicating poor maintenance and monitoring.

8. Recommendations

- *MNRE must ensure that only eligible villages/hamlets and beneficiaries are covered in the Remote Village Electrification programme.*
- *MNRE must ensure long term operation, maintenance and sustainability of the Remote Village Electrification systems.*