

**EVALUATION OF RURAL ELECTRIFICATION  
PROGRAMME - VOLUME - I - 1982**

**1. The Study**

Rural Electrification, aimed at bringing about a rural urban continuum by bridging the gulf between them, received attention only after the Independence when the State Electricity Boards (SEBs) were formed under the Electricity supply Act, 1948. The Rural Electrification Corporation (REC), formed in 1969, was entrusted with the responsibility to administer the Central Plan outlay and to provide loans to the SEBs and Rural Electric Co-operatives for implementing schemes of rural electrification. Besides this, from the Fourth Plan onwards, rural electrification schemes attracted substantial loan assistance from the Agricultural Refinance Development Corporation (ARDC), the Agricultural Finance Corporation (AFC), Commercial Banks and the State Land Development Banks. The actual investment on rural electrification mounted up from Rs.8 crores during the First Five Year Plan to Rs.743 crores (exclusive of another 99 crores utilised from institutional agencies) during the Fifth Plan. With the targets of electrifying 1 lakh villages and of energising 25 lakhs additional pump sets, the Sixth Plan envisaged an outlay of Rs. 861 crores (to be supplemented with Rs.429 crores from institutional agencies) on rural electrification.

At the instance of the Planning Commission, the Programme Evaluation Organisation (PEO) had undertaken in 1961 an evaluation study of the rural electrification programme (REP). The Committee on Unemployment, 1973 urged the Planning Commission to take up through the PEO an evaluation of the employment generated under the REP since 1965. However, the Planning Commission desired that such a study should cover not only the employment aspect of the programme, but its important socio-economic aspects as well. A fresh Repeat study was, thus, launched in the field in 1979 and its report was brought out in 1982.

**2. Objectives**

- i) To examine the relative historical trends in the spread of rural electrification and to investigate in detail the factors influencing the spread and use of power in rural areas.

- ii) To study the supply of and the demand for power and to examine the reasons for lags in realising the potential;
- iii) To study inter-institutional co-ordination;
- iv) To assess the impact of rural electrification on agriculture, rural industry and socio-cultural life.
- v) To study the terms and conditions for giving connections and to study the tariff rates prevailing in different states/regions in the country and problems of realising arrears;
- vi) To investigate the problems faced by users.

### **3. Sample Size/Criteria for Selection of Sample:**

The study was conducted at various levels i.e. State, District, section office, village and household levels. The sampling design adopted for the study was a multi-stage sampling with States as strata and districts as primary units of sampling. The lowest administrative units (LAUs) of SEBs, ie, Section Offices/Sub-divisions of the SEBs, feeder lines within the LAUs, villages served by the feeder lines and the household benefited by the RE programme were taken as subsequent sampling units.

The above design generated a sample of 397 electrified villages located in 48 districts of 19 states. Besides, 79 non-electrified villages, which served as control, were selected to explore the causes of non-electrification. Information was elicited from 2,266 household beneficiaries and about 2,129 non-beneficiaries, besides data collected from SEBs and various other Government Departments and agencies.

### **4. Reference Period**

Data were collected and processed for period ranging between 1961 and 1980.

### **5. Main Findings**

1. The REP had to cope with a number of problems like the wide scatter of villages, non-clustered pumpsets and poor load factor emanating from seasonal consumption of electricity by agriculture. All this resulted in an enormous need for a wide network of transmission lines involving huge capital outlay.

2. The SEBs suffered from many organisational inadequacies. With the shift in emphasis of rural electrification to energisation of tubewells/pumpsets and the associated requirements of huge expenditure and careful planning, the REP could not be managed with the normal staff strength of the SEBs. The rural electrification cells, formed within the SEBs as per the directions of the committees set up by the Ministry of Energy in 1972 and 1974, lacked uniformity. Other pronounced deficiencies included the lack of technical competence of the staff employed in RE programme, over-burdening of the staff of many SEBs with the additional duties of executing the REC financed schemes, reluctance of experienced and qualified engineers, particularly in the North Eastern States, to work in remote areas and difficult terrains, etc.

3. The problems like delays in the clearance of technical and administrative sanctions for the schemes cleared by the REC, acute shortage of construction materials like conductors, RCC poles, transformers, etc. insufficient transport facilities in divisions/sub-divisions, inadequate delegation of financial powers to the field officers and the absence of service-wise data on the number of consumers, on consumption and load separately for the urban and rural sectors impeded the progress of electrification.

4. In line with the instructions of the REC to the State Governments and the SEBs, Co-ordination Committees were formed at the State level in Assam, Gujarat, MP, Meghalaya, Rajasthan, UP and West Bengal and at the district level in all the States except Haryana, Punjab, Meghalaya and Nagaland. In Punjab and Haryana, instead of Co-ordination Committees, Agricultural Production Committees and Public Relations and Grievances Committees were formed. However, the Co-ordination Committees were not effective to the desired extent in getting RE Schemes executed expeditiously.

5. Punjab, Haryana and Kerala had extended electricity to all their villages, while Tamil Nadu was in the process of reaching this stage. Intensification of electrification in many states was adversely affected by lack of co-ordination, high cost of material, exorbitant rates of securities and other charges levied by the SEBs, inadequate promotional efforts and non-availability of facilities for domestic connections. While formulating schemes, the cost of works was underestimated and physical targets were exaggerated to prove their

financial viability. Such schemes could not be executed in full. The factors like uncertainty of power supply, frequent load-shedding and rostering schedule on an extensive scale dampened the demand for power in rural areas.

6. Preferential terms of assistance were introduced by the REC in 1970-71 for the RE schemes in the backward areas. A special programme for electrification of Harijan Bastis adjoining electrified villages was taken up in 1972-73. Specific allocations were made by the REC in 1975-76 for the electrification of tribal areas.

7. Upto the end of the Fourth Plan, the source to finance the RE schemes were (i) Central Plan outlay, (ii) State Plan outlay, and (iii) internal resources of the SEBs including institutional finances. During the Fifth Plan and onwards, additional funds were provided under the outlay for the Minimum Needs Programme (MNP) and the revised MNP. Administration of funds under the Central Plan outlay, the MNP and the revised MNP rested with the REC while the funds under the other two sources were administered by the SEBs. The SEBs, therefore, planned two types of schemes viz. schemes to be financed out of its own resources and those to be financed with loans from the REC. Emphasis on the former got reduced with the setting up of the REC.

8. All States availed the loan facility from the REC to the maximum. In some States, Schemes formulated in the initial years were executed without conducting the required surveys. Wherever profitability of the scheme was exaggerated, the sanctioned amount got exhausted even before the completion of works. In almost all the States, the RE schemes were formulated without active consultation with the agencies having development schemes in the scheme area. Extension of the RE schemes was, in many cases, sporadic, leaving some pockets of unelectrified villages in the scheme area.

9. For fixing the target of rural electrification and for measuring the level of achievement, the norm used was the percentage of villages electrified. Due to large variations in the size of villages and to the lack of uniformity in the definition of a village as adopted by the Registrar General of India for census purposes and by the CEO to determine the number of villages electrified, it was difficult to arrive at the correct percentage of villages electrified. This rendered inter-state comparison of the progress of electrification unrealistic.

10. With the shift of emphasis to energisation of pumpsets/tubewells, the Planning Commission started giving state-wise targets for the same during the First Annual Plan (1966-67). During the Annual Plans and the Fourth Plan, the targets were over-achieved. Underachievement of targets, reported during 1974-79, indicated lack of interest on the part of the implementing agencies or faulty planning done at the time of setting up of targets.

11. Except for the North Eastern States, the progress of energisation of pumpsets was more or less satisfactory. About 21 pumpsets per 1000 hectares of gross cropped area were energised in 1979 at the all-India level. This proportion varied between States in the range of 111 in Tamil Nadu to 1 in Orissa.

12. The number of industrial units functioning in 397 selected villages was 76 before electrification. This went up to 546 at the time of the enquiry. Of these, 16% were still operating without any electric motive power. Of the above said 546 units, 82.80% were agro-based, 14.6% non-agro based and 2.6% service units.

13. The SEBs banked heavily on the REC for extension of rural electrification and energisation of pumpsets. During the Fourth Plan, the REC financed the electrification of 15.1% of the total villages electrified. This increased to 62.3% during the Fifth Plan.

14. The connected load per village worked out to 96 kws for the sample villages. The variations across states ranged from the extremes of 417.7 kws in T.N., 311.7 kws in Kerala, 180 kws in Gujarat and 130.4 in A.P. to 17.6 kws in U.P., 16.5 kws in Meghalaya, 14.6 kws in J&K and 11.5 kws in Orissa.

15. During 1976-77, the annual consumption per village and per consumer were 57200 kwhs and 881 kwhs respectively. Of the total consumption, about 64% was utilised for agriculture, 14% for industry, 13% for domestic use, 4% for commercial use and 2% for street lighting.