

Prime Minister's Special Package for Arunachal Pradesh

1. Introduction

The Prime Minister announced a package of ₹ 550 crore in January 2008, to electrify/illuminate villages¹ in Arunachal Pradesh through Solar Power and Small Hydro Power projects by December 2011. The programme was extended with the approval of the Cabinet till March 2015.

2. Target and Achievements

The year wise targets and achievements under the PM's special package are given at Table 45.

Table 45: Year wise targets and achievements under the PM's special package

(in Nos.)

Year	Target				Achievement			
	No. of Households		No. of border villages		No. of Home Lighting Systems		No. of Villages	
	SPV	SHP	SPV	SHP	SPV	SHP	SPV	SHP
2008-09	5,758	48,331	546	868	-	27,859	-	216
2009-10	-	6,707	-	191	5,852	3,470	523	100
2010-11	-	-	-	-	-	2,339	-	58
2011-12	-	-	-	-	-	3,477	-	108
2012-13	-	-	-	-	-	664	-	27
2013-14	-	-	-	-	-	688	-	19
TOTAL	5,758	55,038	546	1,059	5,852	38,497	523	528

Source: APEDA and DHPD.

Note: SPV – Solar Photovoltaic and SHP – Small Hydro Power.

As can be seen from Table 45, 1,605 un-electrified border villages were to be electrified for which funds were given by Planning Commission and MNRE. The breakup of targets and achievements between Planning Commission and MNRE are given at Table 46.

¹ Apart from villages already covered under RGGVY.

Table 46: Breakup of targets and achievements between Planning Commission and MNRE

	Planning Commission		MNRE	
	Target	Achievement	Target	Achievement
No. of villages	486	303	1,119	748
No. of households	29,212	23,867	31,584	20,482
No. of SHP projects (capacity in MW)	DHPD ²	46 (61 MW)	37 (25 MW)	48 (16 MW)
	APEDA ³	-	-	67 (2 MW)
				42 (1 MW)

Source: APEDA and DHPD.

The shortfall in achievement of Planning Commission targets was mainly on account of non-completion of nine SHPs (36 MW), against which expenditure of ₹ 358.46 crore (including expenditure prior 2007-08 and State share as of August 2014) had been incurred. Against a target of 486 villages only 303 had been electrified.

The shortfall in achievement of MNRE targets was because Department of Hydro Power Development (DHPD) did not complete 13 hydel projects (capacity: eight MW) and APEDA not completing 25 (capacity: one MW) due to various reasons, such as, delay in completion of projects by turnkey contractors and non-availability of funds. The delay ranged from two to three years. Against a target of 1,119 villages only 748 had been electrified.

MNRE stated (May 2015) that some of the projects got delayed due to site conditions and some under installation projects also got damaged due to heavy rains and that the DHPD had further requested for additional fund of ₹ 1,719.11 crore from the Central Government, to complete the SHP projects.

3. Budgetary provisions

The details of budget and expenditure for the period 2007-14 are given at Table 47.

Table 47: Details of budget and expenditure for the period 2007-14

(in ₹ crore)

Year	CFA released by MNRE ⁴	Funds released by Planning Commission	State/Share	Individual	Actual Expenditure 2007-14
2007-08	-	69.11	-	-	-
2008-09	18.73	100.14	1.86		126.01
2009-10	56.00	105.31	0.22		132.09
2010-11	60.75	-	1.28		149.62
2011-12	62.09	-	10.77		74.61
2012-13	34.00	-	23.95		49.58
2013-14	9.75	-	8.85		25.41
Total	241.32	274.56	46.93		557.32

Source: APEDA and DHPD.

² Department of Hydro Power Development.

³ Arunachal Pradesh Energy Development Agency.

⁴ CFA released by MNRE included funds released to Department of Power (₹ 38 crore), DHPD (₹ 148.82 crore) and APEDA (₹ 54.50 crore) from 2007-08 to 2013-14.

During the period 2008-09 to 2013-14, out of total available funds of ₹ 562.81 crore an expenditure of ₹ 557.32 crore was incurred, leaving a balance of ₹ 5.49 crore.

3.1. Diversion of funds

The DHPD diverted (March 2011) ₹ 13.17 crore out of ₹ 13.85 crore released in 2008-09 for construction of Sipit and Sidip SHP projects, later scrapped in October 2011 for construction of an additional unit of four MW Halaipani SHP project without approval of the Planning Commission.

DHPD stated that matter was placed before State Level Monitoring Committee and approved by the State Government. However, the fact remains that no approval was obtained from the Planning Commission.

MNRE offered no comments as the projects were supported by the Planning Commission directly to the State.

4. Implementation and Power Generation

Audit observed that some of the projects were non functioning due to defective equipment, natural calamities, lack of repair, abandoning of projects by contractors, etc. which resulted in losses in power generation. The detailed audit findings are given below:

4.1. Absence of a specific State Government policy for acquisition of land

Absence of State Government policy regarding acquisition of land for projects, compensation, resettlement and rehabilitation of land owners led to delay in completion of Sirikorang SHP project (500 kW) by two years due to disputes with villagers for acquisition of land. This resulted in cost escalation of ₹ 1.43 crore, which could have been avoided.

4.2. Non levy of Liquidated Damages (LDs)

As per terms and condition of the agreement with the developers/ contractors, if the commissioning/ supply were delayed beyond a certain period, then LDs at the rate of 10 per cent were to be charged. Audit findings in this respect are brought out in the Table 48.

Table 48: Contractors on which Liquidated Damages (LDs) were not levied

S.No.	Particulars of work	Delay period	Amount of LD (in ₹ crore)
1	APEDA did not deduct LDs from turnkey contractors (M/s Gita Flow Pumps, M/s Jal Sakhti Engg. & M/s Ushwin) for delayed completion of 42 SHP projects and non completion of 25 SHP projects for 55 months.	3 to 39 months	1.18
2	Delays in completion of works relating to supply and installation of SHLSs from the contractors, namely, M/s Sun Energy Systems, Gujarat, M/s ICOMM Tele Limited, Hyderabad, and M/s Reliance Industries Limited, Kolkata.	Eight months	0.86

S.No.	Particulars of work	Delay period	Amount of LD (in ₹ crore)
3	₹ 20.37 crore were sanctioned (January 2010) by the Planning Commission for Sambachu SHP project (three MW) in Tawang District, to the Hydro Power Development Corporation of Arunachal Pradesh Limited (HPDCAPL). M/s Nortech Power Project (P) Ltd., Kolkata could complete (August 2014) only 80 <i>per cent</i> of the work. Performance bank guarantees of ₹ 2.59 crore and ₹ 0.82 crore towards Security Deposit had also not been collected.	Three years	1.29

4.3. Non-functional SHP projects

4.3.1 Six SHP projects not working due to damage in floods

Six SHP projects with a capacity 195 kW, were not working for different periods ranging from one to 24 months due to flood damage to power channels, head works and penstock pipes. As a result, expenditure of ₹ 4.04 crore incurred on the projects remained unproductive.

MNRE (May 2015) accepted the facts and stated that 30 *per cent* of the projects were not working due to natural calamities.

4.3.2 Unfruitful expenditure

As per Memorandum of Understanding (February 2001), the National Hydro Power Corporation, Ltd. (NHPC), handed over the Kambang MHS project completed by turnkey contractor, M/s Kirloskar Brothers, Pune, to the DHPD for operation and maintenance without full load testing. An expenditure of ₹ 62.43 crore was incurred on the project.

Unit III of the project remained non-operative since April 2010 due to defective equipment. As per the Defective Liabilities Clause – Clause 27.2 of the Agreement, the turnkey contractor was responsible for successful operation for a period of 24 months from the date of operational acceptance. But the contractor neither repaired nor replaced the defective equipment even after a lapse of 49 months.

Later, Units I and II were also shut down from January to June 2014 due to vibration and oil leakage. As of June 2014, the turnkey contractor had not repaired Units I and II. As a result, the Department lost generation of 4.3 Million Units (MUs) of power in respect of Unit I and 4.3 MUs in respect of Unit II, whereas non-operation of Unit III since commissioning resulted in loss of potential generation of 42.34 MUs (May 2010 to June 2014). Thus, expenditure of ₹ 62.43 crore incurred on the project remained unfruitful. The expenditure of ₹ 0.32 crore incurred on repair and rectification of electrical equipment was also not recovered from the turnkey contractor by the Department.

In the Exit Conference (December 2014) held with the officials of DHPD, it was stated that the contractor abandoned the project (Kambang MHS). However, a notice was served to the contractor to resume works.

MNRE stated (May 2015) that it is the State's responsibility to complete the work as per work contract.

4.3.3 Inoperative Liromoba SHP project

M/s Swamina International Private Limited, Kolkata, completed the works of overhauling, repairing, renovation, modification, erection, testing and commissioning of Electrical & Mechanical (E&M) equipment of Liromoba SHP project (2 x 1 MW) after a delay of 27 months (March 2009) from the date of Agreement (September 2006). But the LD of ₹ 0.14 crore was not levied on the contractor as per terms and conditions of the Agreement. Reasons for delay were also not on record. Since commissioning (March 2009) till October 2012, the project was operated with a load of 130-140 kW on manual mode due to problems with the electronic governor which was unable to pick up any load exceeding 15 kW on both units. From October 2012 onwards the project remained non-operative, resulting in loss of potential generation of 15.55 MUs worth around ₹ 3.25⁵ crore. The Department neither repaired nor replaced the defective equipment at the risk and cost of the contractor.

4.3.4 Under-utilisation due to non-availability of Transmission and Distribution lines

The DHPD constructed Solegamang SHP project (1 x 50 kW) (Menchuka Circle) at a cost of ₹ 0.88 crore, but it provided electricity supply to only one village against the target of eight villages due to non-availability of Transmission and Distribution lines. Further due to operation of the project only at 15 kW capacity against its full capacity of 50 kW, the Department lost generation of 0.15 MUs (August 2013 to June 2014) valued around ₹ 0.32⁶ crore.

4.4 Sub-standard work

As per scope of work agreement, the contractor was to perform at least one practical demonstration on laying, fixing, jointing, installation and commissioning of pipes in districts having up to five projects and at least two demonstrations in districts having more than five projects. If the demonstration failed or any material was found to be sub-standard during the demonstration or at any subsequent point of time, they would be rejected and the amount recovered, wherever applicable. However, the contractor installed penstock pipes without ascertaining their quality, as a result of which damages and leakages of fibre penstock pipes was reported from Jangtangpu Mini Hydel Power(MHP) projects. But no action was taken against the contractors by the APEDA.

APEDA stated that more than 15 *per cent* of the agreed cost was retained and the cost of defective work would be recovered before releasing final payment.

4.5 Overlapping work

Both the DPRs for construction of Khadiabe SHP project by APEDA and DHPD covered 10 villages, and the same villages were also covered under the RGGVY Programme. Thus, lack

⁵ 15.55 MUs @ ₹ 2.09 per unit = ₹ 3.25 crore.

⁶ 0.15 MUs @ ₹ 2.09 per unit = ₹ 0.32 crore.

of co-ordination and proper planning between the Agency and Departments resulted in overlapping of villages, which may have caused unnecessary expenditure.

In reply, DHPD stated that from the list of villages prepared by DHPD and APEDA, only two villages (Tania and Sube) overlapped.

The reply was not tenable as six villages were included in the DPRs prepared by DHPD and APEDA. Besides, the villages listed in the DPRs were taken up under RGGVY for supply of power through grid.

4.6 Work orders placed without tender process

As per GFR, works were to be executed through open tender and as per Central Public Works Department Works Manual, tenders should normally be called for all works exceeding ₹ 50,000. Audit observed that:

- i. Contrary to the guidelines, DHPD carried out Civil and E&M Works, in respect of 17 projects under the PM package, valued at ₹ 68.86 crore, without following any tendering procedures. The civil works were executed through local villagers (stated to be land donors) by issue of a number of work orders, without any technical sanction or calling for open tenders.

DHPD stated that the Department adopted splitting of works on piecemeal basis through Work Orders, mostly for earth work components, to benefit local people.

The reply is not acceptable as the works were done in contravention of the Guidelines, and without ensuring economy and quality of works executed.

- ii. MNRE released (2006-07) ₹ 4.70 crore for construction of Kambang MHP project. However, DHPD diverted ₹ 0.79 crore for reconstruction works on damage to Kambang MHP project in 2006-07 by flood during construction, without approval of the MNRE. The works were executed by issue of a number of work orders to individuals without calling for open tenders.

DHPD stated that the Desilting Tank was severely damaged due to flash floods and immediate rectification was required for timely restoration of power supply.

The reply was not acceptable as the released amount was diverted for flood damage works without approval.

5 Monitoring

- i. Monthly generation data was not submitted to MNRE in respect of all commissioned projects, except for Kambang, Sippi and Nuranang SHP projects.
- ii. APEDA neither monitored the progress of works nor received Progress Reports from the DHPD or Department of Power.

- iii. DHPD monitored 67 SHP projects out of 94 SHP projects under the PM's Package through third parties like Nabard Consultancy Services (Private) Ltd. (NABCON) and Alternate Hydro Energy Centre, IIT Roorkee from June 2009 to March 2014. However, the other 27 SHP projects remained un-monitored by any agency.

MNRE stated (May 2015) that the monitoring works of SHP projects was assigned to AHEC and IIT Roorkee on random basis and that they had regularly monitored the SHP projects. The reply of MNRE should be considered in the context of the audit findings reported in the preceding paragraphs which revealed that 38 projects were yet to be completed.

6 Maintenance

6.1 Non-repair /replacement of equipment

Due to non-commissioning of Unit-II (250 kW) by the turnkey contractor - M/s BIEECO Lawrie Ltd., Kolkata and non-repair/rectification of fault in Unit-I(250 kW), the project Sirikorong SHP remained under operative, resulting in loss of generation 2.08 MUs valued around ₹ 0.44 crore⁷ (August/2003 to July/2014) and unproductive expenditure of ₹ 6.40 crore.

6.2 Annual Maintenance Contract (AMC)

APEDA did not enter into any AMC with suppliers as per terms of the Agreement even after two years (July 2014) of installation of 5,852 Solar Home Lighting Systems (SHLSs). As a result, the full life efficiency/expectancy of the installed systems could not be ensured. Reasons for the same were not on record.

APEDA stated that AMC was in-built in the original contract agreement with the parties. It was further stated that effective implementation of AMC was difficult due to various logistical factors, site difficulties, lack of awareness of beneficiaries and fund constraints. The fact remains that APEDA did not implement the AMC.

MNRE stated (May 2015) that it has asked APEDA to make the AMC as the part of the contract Agreement with the PV equipment suppliers, and accordingly, it was the part of agreement. However, the effective implementation of AMC lies with implementing organization i.e. with APEDA.

6.3 Setting up of Service Centres

As per terms of Agreement, contractors were required to set up one Service Centre with a technician in each District or for every 500 SPV systems with all necessary spares. A maintenance report was to be submitted every three months to concerned APEDA Project Officers for the entire contract period. However, the contractors did not submit the maintenance reports to APEDA.

⁷ 2.08MUs X ₹ 2.09 per unit = ₹ 0.44 crore.

APEDA stated that Service Centres were set up by contractors in all District Headquarters and that the Service Centres initially functioned satisfactorily. On completion of the two years of warranty period and there being no complaints against functioning of the systems provided, the Security Deposits/Bank Guarantees were released.

MNRE agreed with the reply given by the APEDA. However, it needs to be considered how the SPV systems would be maintained in the absence of Service Centres.

7 Conclusion

A Prime Minister's special package of ₹ 550 crore was announced in January 2008 for electrification of 1,605 border villages located in Arunachal Pradesh through Solar Power and Small Hydro Power projects. The project was to be completed by December 2011. Funds of ₹ 515.88⁸ crore were released by the Planning Commission and MNRE.

As of 2013-14, only 1,051⁹ i.e. 65 per cent of the villages were electrified. Audit observed that the shortfall was due to delay in completion of projects and non-availability of funds. Nine Small Hydro Power projects of 36 MW, funded by the Planning Commission, remained incomplete even after incurring an expenditure of ₹ 358.46 crore. 38 projects of nine MW aggregate capacity sanctioned by MNRE also remained incomplete. Even after completion, some of the projects were found to be not functioning due to defective equipment, natural calamities, inaction by contractors to repair the same, abandoning the projects by contractors, etc. which resulted in losses in power generation. MNRE agreed that 30 per cent of the projects were not functioning.

Audit observed instances where provisions of General Financial Rules and terms and conditions of the contracts were not followed, tendering process was not followed and substandard work was done.

Audit further observed that Annual Maintenance Contract for maintenance of solar equipment installed were not in place after the first two years. No service centres for maintenance of the projects were functioning. There were deficiencies in monitoring of implementation of the Small Hydro Power projects by MNRE and by the State Agencies.

8 Recommendation

- *MNRE must review the work done under Prime Minister's Special Package for Arunachal Pradesh and take action in coordination with the State Agencies for completing delayed projects, ensuring operations of commissioned projects and adequate post-project maintenance thereof.*

⁸ MNRE - ₹ 241.32 crore and Planning Commission - ₹ 274.56 crore.

⁹ SPV – 523 and SHP – 528.