

## CHAPTER – I PERFORMANCE REVIEWS

### ENERGY AND POWER DEPARTMENT

#### 1.1 Development of Hydro power Projects – Public Private Participation

*The State of Sikkim has won accolades from various prestigious organisations in and outside the country for excellent law and order situation, peace and tranquillity, investor ambience, environment management and overall good governance. The State Government considered promoting these positive factors in the national and international markets in harnessing the huge hydro power potential through private sector investment with a view to turnaround the State's economy and avoid its dependence upon central transfers for development. With the liberalisation of Power policy by the Government of India, the State Government identified 35 hydro power projects with an aggregate installed capacity of 5,741.20 MW and invited the Independent Power Producers (IPPs) for development of projects since 2001-02. Performance audit of Development of Hydro power Projects by the State Government through Private Sector participation revealed that the State had neither finalised its hydro power policy nor prepared a time bound plan till date for implementation of the projects. Absence of a firm and defined policy and a definite plan led to inconsistency in award of projects and lack of a well thought of revenue model resulted in loss of potential revenue. Besides, the State also did not take sufficient precaution against degradation of environment. The significant observations noticed are highlighted below:*

**The State Government had not finalised and notified private power policy as of September 2009 although the Administrative Staff College of India had prepared the draft private power policy for the State as early as September 2003.**

**(Paragraph 1.1.8)**

**Award of two projects to Gati Infrastructures Ltd (November 2003) and two other projects to National Hydroelectric Power Corporation (March 2006) at a comparative low rate of 12 per cent royalty for the entire agreement period may lead to a potential loss of Rs. 143.50 crore per year from the 16<sup>th</sup> year of operation onwards.**

**(Paragraph 1.1.10.1)**

**Imposition of upfront premium at a meagre rate of Rs. 10,000 per MW would lead to a reduction in revenue ranging between Rs. 60.08 crore and Rs. 279.87 crore as compared to other states like Himachal Pradesh (HP), Jammu & Kashmir (J&K), Uttarakhand and Arunachal Pradesh.**

**(Paragraph 1.1.10.2)**

**Due to imposition of penalty at an abysmal low rate of Rs. 10,000 per MW per month for delay in commissioning of projects, the State stood to lose between Rs. 2,514.49 crore and Rs. 2,622.76 crore per year as compared to Uttarakhand, HP and J&K and Rs. 137.08 crore per year as compared to Arunachal Pradesh.**

**(Paragraph 1.1.10.4)**

**Non-imposition of specific condition for regular contribution towards local area development on 16 developers led to loss of Rs. 245.20 crore annually.**

**(Paragraph 1.1.10.5)**

**Adequate steps to safeguard the environment viz. catchment area treatment plans, protection and preservation of riverine fishes etc. has not been taken during implementation of hydro power projects.**

**(Paragraph 1.1.12)**

**Regular monitoring and vigil to ensure proper execution of the projects by the developers was virtually non-existent.**

**(Paragraph 1.1.14)**

### **1.1.1 Introduction**

Electricity has been recognised as a basic human need and a critical infrastructure on which the socio-economic development of the country depends. Availability and supply of reliable power at competitive rates to Indian industry, services sector, rural households, etc. is very crucial for rapid economic growth and poverty alleviation. Recognising this, Government of India (GOI) set a target of providing access to electricity to all households<sup>1</sup> in the next five years through significant addition to the generation capacity of the existing power projects in the country. With the liberalisation of Power policy by the GOI, the State Government also opened the power sector to private developers with the objective of rapidly harnessing the hydro power potential of the State and thereby gaining in a big way by exporting electricity to other power hungry States of the Country. The hydro power potential of the State was assessed at 8,000 MW peak. The State Government identified (upto September 2009) 35 hydro power projects of total capacity 5,741.20 MW (ranging between 27.50 MW and 1,200 MW) for development by independent power producers (IPPs) and the NHPC. Letters of intents (LOIs) had been issued in respect of 33 projects for 5,681.20 MW capacity, out of which, agreements (MoU) had been signed in respect of 28 projects with IPPs (24 projects) and NHPC (4 projects) for a total of 5,421.70 MW. The details of the 35 power projects are depicted in the table below:

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<sup>1</sup> According to Census 2001, about 44 per cent of the households in the country do not have access to electricity.

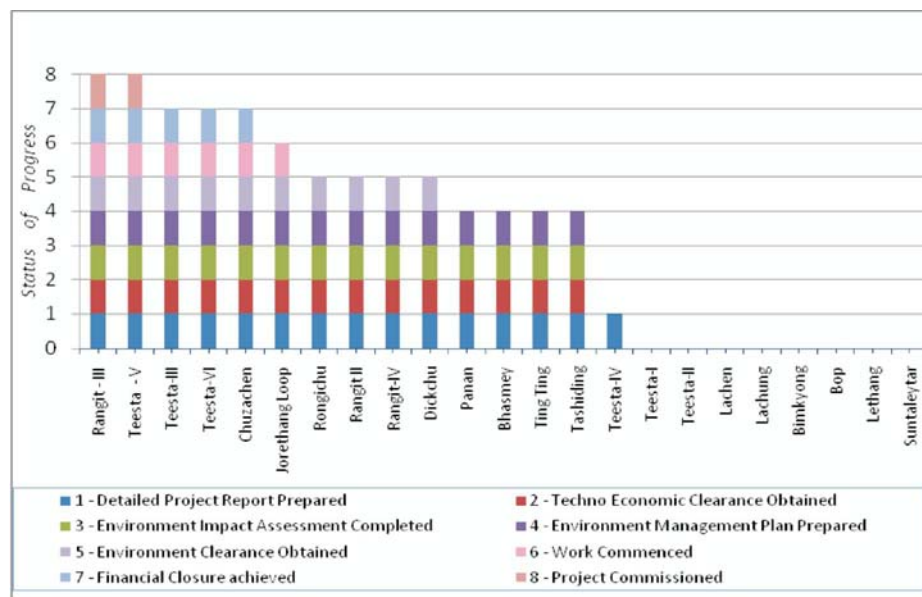
Table – 1.1.1

Sl No	Particulars	No of projects	Capacity (MW)
1	Total number of projects identified	35	5,741.20
2	LOIs issued	33	5,681.20
3	LOIs withdrawn	2	139
4	LOIs against which agreements are yet to be drawn	3	120.50
5	Agreements signed	28	5,421.70
6	Agreements withdrawn	5	314
7	Agreements valid	23	5,107.70
8	Projects awarded to NHPC	4	1300
9	Projects awarded to IPPs	19	3,807.70
10	<b>Projects commissioned (NHPC)</b>	<b>2</b>	<b>570</b>

Source: Information obtained from the Department.

As of September 2009, only two projects viz; Rangeet Stage III (60 MW) and Teesta Stage V (510 MW) aggregating 570 MW constituting 10 per cent of the total capacity identified had been commissioned by the NHPC in February 2000 and March 2008 respectively. 13 projects were at various stages of progress while 8 projects were yet to make any progress. The status of progress of the projects is depicted in the graph below:

Chart – 1.1.1



### 1.1.2 Organisational set-up

Development of hydro power projects in Sikkim was entrusted to the Sikkim Power Development Corporation (SPDC), a fully owned State Government undertaking, as a facilitator under the overall control of the Energy and Power Department. The SPDC is headed by a Managing Director (MD) who is also the Principal Chief Engineer-cum-Secretary, Energy and Power Department (EPD). The MD, SPDC is

assisted by one Senior General Manager (Chief Engineer, EPD), one General Manager, one Manager and one Assistant Manager in the discharge of his duties relating to development of hydro power projects through the IPPs/NHPC.

### **1.1.3 Scope of Audit**

The performance of the State Government in developing hydro power projects in collaboration with the private sector was reviewed with reference to the activities undertaken by the State Government and the SPDC during the period 2003-08. The audit was carried out during March–August 2008 and May–June 2009. All 23 projects awarded so far to the IPPs / NHPC for which agreements signed were valid were selected for examination in audit.

### **1.1.4 Audit objective**

The main objectives of the performance audit were to assess whether:

- the State Government had a clear vision and a well defined policy for development of its hydro power potential;
- due diligence was exercised in awarding the development of power projects to the IPPs;
- the projects were implemented in strict compliance with the norms laid down for establishment of hydro power projects; and
- the issues relating to protection of environment were adequately addressed while awarding projects to the IPPs.

### **1.1.5 Audit criteria**

The audit objectives were benchmarked against the following criteria:

- Electricity Act 2003 and National Hydro power Policy.
- Agreements entered into with the IPPs / NHPC.
- Guidelines issued by the Union Ministry of Power, Central Electricity Authority, Ministry of Environment and Forests and the Central Water Commission from time to time.
- Private power policies of other hydro power States.
- Private power policy prepared by the Administrative Staff College of India for Sikkim.

### **1.1.6 Audit methodology**

The Performance audit commenced with an entry conference (March 2008) with the Department wherein the audit objectives, audit methodology and criteria for drawing audit conclusions were discussed. Audit was conducted by examination of records maintained in the Energy and Power Department, SPDC office and obtaining related information from various departments such as Forest, Environment and Wildlife



Management; Mines, Minerals and Geology and the Fisheries Directorate. Audit findings were discussed with the Departmental officers in an exit conference (September 2009) and their views appropriately incorporated in the report.

#### **1.1.7 Acknowledgement**

Accountant General, Sikkim acknowledges the cooperation and support extended by the Energy & Power Department, Sikkim Power Development Corporation, Directorate of Fisheries, Forest Environment & Wildlife Management Department and the Mines, Minerals & Geology Department during audit.

#### **Audit Findings**

#### **1.1.8 Private Power Policy**

Government of India launched the private power policy as early as 1991. As the methodologies regarding independent power projects (IPP) had not been firmed up by then, the initial project solicitation was done through the Memorandum of Understanding (MOU) route. Subsequently, in order to bring in transparency and to ensure better deal for the States, GOI advised (October 1993) all the States to introduce competitive bidding and forwarded (October 1995) guidelines thereof.

The State Government, however, had not spelt out any vision, mission, policy or a plan for development of hydro power projects through private sector participation. In 2002-03, after more than a decade of announcement of the private power policy by the GOI, the State Government engaged<sup>2</sup> the Administrative Staff College of India (ASCI), Hyderabad as consultants for preparing hydro power policy for the State. The ASCI submitted (September 2003) a draft policy for the State which, inter alia, envisaged advertisement of the projects to seek potential bidders; award of projects to the highest bidder; laying down qualifying criteria for the IPPs such as past experience of hydro power development; determining financial capability of the IPPs; rate of royalty; norms for maintenance of projects etc. However, no further action was taken by the Power Department to get the private power policy approved and notified by the Government even as of September 2009.

While accepting the facts stated by audit, the Department replied (September 2009) that since hydro power is the only available source of revenue generation for the State, they awarded the projects before finalisation of the hydro power policy to quicken up the implementation of the projects.

However, absence of hydro power policy and a well defined plan led to a number of inconsistencies in award of projects to IPPs, loss of revenue to the State, environmental risk, etc. as discussed in the succeeding paragraphs.

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<sup>2</sup> At a cost of Rs.30 lakh.

### **1.1.9 Award of projects**

#### ***1.1.9.1 Transparency in award of projects***

Despite many encouraging attributes of the State, open advertisement and dissemination of information regarding availability of hydro power potential in the State for development by the private sector, was not done either in the print or electronic (internet) media with a view to solicit best deals from reliable and competent firms. Instead, all the projects, irrespective of the size, were awarded by the State Government through the MOU route without calling for bids. Despite considerable hue and cry in the State regarding the methodology adopted for award of the projects, the Government had not notified the details of potential available, modality for award of projects, technical capability, financial strength and experience of IPPs chosen, etc. to the public.

The Department stated (September 2009) that the details of projects, location, IPPs etc. are available in the official website of the Department. Besides, a white paper on hydro power resources in Sikkim has been brought out by the Government.

Audit scrutiny revealed that the official website of the Energy and Power Department contained an outdated list of 26 projects detailing only the name of the projects and address of the IPPs. The website did not capture the projects cancelled, new projects allotted, details of potential available, modality for award of projects, technical capability, experience and financial strength of IPPs etc. Even the white paper brought out in April 2009, also categorically mentioned that the basic facts regarding the hydro power projects were not available in the public domain.

#### ***1.1.9.2 Safeguards against plants remaining defunct***

The State Government should have incorporated specific conditions in the agreements to safeguard its interest in cases where the plants, after commissioning, remain shut down for considerable lengths of time due to reasons attributable to the developers. However, no such condition was incorporated in the agreements. Hence, the State had no enabling provision to compel the IPPs for payment of appropriate compensation in lieu of the free power receivable from the projects.

The Department stated (September 2009) that provision was made in the agreements for levy of penalty in case of delay in construction by more than 12 months. However, it was seen in audit that no clause for levy of penalty for plant remaining defunct after commissioning was incorporated in the agreements.

#### ***1.1.9.3 Modality for transfer of projects***

The agreements did not incorporate the modalities for transfer of the assets and liabilities of the projects to the State Government after the termination of the award

period. No mention was made in the agreement as to what would happen to the manpower engaged in the projects after the award period and whether the manpower would also be transferred to the State Government along with the project or whether it would be left to the discretion of the State Government to retain the manpower in the projects. Further, the State Government had also till date not formulated any strategy for taking over the projects after the award period.

The Department stated (September 2009) that the modalities and strategy for taking over the projects after the award period shall be formulated shortly by the State Government.

#### **1.1.9.4 Imposition of cost of Rajiv Gandhi Gram Viudyutikaran Yojana on the developers**

Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY), a centrally sponsored scheme (90:10 CSS) for Rural Electricity Infrastructure & Household Electrification was launched by the Prime Minister of India in April 2005 with the objective of providing access to electricity to all households and improving the rural electricity infrastructure. In the agreements drawn (November/December 2008) by the State Government with M/s KHC Lethang Hydro Project Pvt Ltd (60 MW Lethang HEP) and M/s Shreya Powertech Pvt Ltd (40 MW Suntaleytar HEP), the IPPs were made to bear 10 *per cent* of the RGGVY scheme cost within the surface distance of 2 Kms from the project site. The above condition was not imposed on the other developers who had been awarded projects thereby resulting in inequitable terms of execution of the projects.

The Department stated (September 2009) that the condition of bearing 10 *per cent* cost of RGGVY schemes could not be imposed on agreements signed earlier as this condition was laid down by the GOI only in 2008. The reply, though a fact, further affirms audit contention that the agreements did not contain relevant provision for incorporation of new policy measures introduced by the GOI and the State Government from time to time.

#### **1.1.10 Revenue model**

The revenue model adopted by the State Government for development of hydro power projects by IPPs / NHPC was inconsistent and was determined without considering the report of the ASCI, the situation prevailing in other forerunner hydro power states like Himachal Pradesh and Uttarakhand and the goodwill that the State of Sikkim had in the country. This resulted in loss of potential revenue to the State as detailed in the following paragraphs:

#### **1.1.10.1 Royalty from IPP/NHPC projects**

The Sikkim Government did not impose uniform royalty on all developers. In respect of 17 IPP projects, the Government imposed 12 *per cent* free power for the first 15 years and 15 *per cent* free power for the remaining agreement period of 20 years (16<sup>th</sup> to 35<sup>th</sup> year). However, in respect of two projects<sup>3</sup> awarded to an IPP (*Gati Infrastructures Ltd*), and four projects awarded to the NHPC, the Government charged 12 *per cent* free power for the entire agreement period. Out of the four NHPC projects, two projects - Rangeet Stage III and Teesta Stage V were already commissioned in year 2000 and 2008. The other two projects (Teesta Stage IV and Lachen HEP) awarded to NHPC in March 2006 were yet to be taken up for execution.

Award of two projects to Gati Infrastructures Ltd (November 2003) and two other projects to NHPC (March 2006) at a comparatively low rate of 12 *per cent* royalty for the entire agreement period may lead to a potential loss of Rs.143.50 crore per year<sup>4</sup> from the 16<sup>th</sup> year of operation onwards.

The Department stated (September 2009) that the condition of 12 *per cent* free power was imposed on the NHPC for the entire life of the projects based on GOI guidelines as it was a GOI agency. In case of Gati Infrastructures Limited, royalty of 12 *per cent* was imposed for the entire agreement period as M/s Gati was the first IPP to venture into the State and the two projects awarded to Gati were of very small capacities located in remote areas. Award of projects at a low rate of royalty to M/s Gati was due to absence of a defined policy and an effective revenue model. The projects which were later awarded to other IPPs at higher rate of revenue were of even smaller capacities situated at even more remote locations.

#### **1.1.10.2 Upfront premium**

The State Government had signed agreements with various IPPs and NHPC for development of 28 hydro power projects with total installed capacity of 5,421.70 MW as of December 2008. An amount of Rs. 10,000 per MW was charged as 'processing fees' in the agreements drawn with 18 IPPs between July 2005 and December 2008, irrespective of the size of the projects. No such fees were charged on the developers of 10 projects (*six IPP projects of 347.70 MW* agreements signed between December 2002 and November 2003 and *four NHPC projects of 1300 MW*).

Audit scrutiny revealed that the States of Himachal Pradesh, Uttarakhand, Jammu & Kashmir and Arunachal Pradesh charged minimum upfront premium at rates ranging

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<sup>3</sup> Chuzachen (99 MW) and Bhasmey (51.7 MW)

<sup>4</sup>  $(99 + 51.7 + 520 + 210) \text{ MW} = 880.70 \text{ MW}$ ;  $880.70 \times 365 \times 24 \times 1000 \times \text{Rs. } 6.20 = \text{Rs. } 143.50 \text{ crore}$ . The loss to the State has been calculated at current average trading rate of Rs. 6.20 per unit of electricity on full installed capacity. The rise in tariff with time is presumed to offset the generation below installed capacity.

between Rs. 1.5 lakh and Rs. 10 lakh per MW for projects of 100 MW and above capacity. The imposition of upfront premium on the IPPs at a meagre rate of Rs. 10,000 per MW by the State would lead to a reduction of revenue by a minimum of Rs. 279.87 crore as compared to Himachal Pradesh, Rs. 138.52 crore as compared to J&K / Uttarakhand and Rs. 60.08 crore as compared to Arunachal Pradesh for projects above 100 MW.

The states of Uttarakhand and J&K also charged minimum upfront premium of Rs. 5 lakh per MW for projects above 25 MW but below 100 MW. If fee was imposed at this rate, the State of Sikkim would have collected Rs. 64.74 crore<sup>5</sup> from 17 IPP projects in the range of 25 MW to 100 MW of total 1,294.70 MW capacity. However, the State could collect only Rs. 0.95 crore from 11 projects having total installed capacity of 947 MW leading to a loss of Rs. 63.79 crore.

The Department stated (September 2009) that it was a conscious decision of the State Government and upfront premium were not charged on the developers as (i) the developers had to do the pre-feasibility study at their own cost for most of the projects, unlike in other hydro power states (ii) collection of application fees and upfront premium would unnecessarily burden the capital cost of the projects thereby raising the cost of generation. The reply was not acceptable as upfront premium charged by other hydro power states was part of the project allotment process not related to cost of Pre-feasibility Reports while application fee was charged separately. Further, when all other hydro power states including Arunachal Pradesh were imposing upfront premium at substantial rates, a peaceful State like Sikkim with a record good governance and excellent law and order situation should have charged the application fees / upfront premium.

#### **1.1.10.3      *Application fees***

The States of Himachal Pradesh, Uttarakhand and Jammu & Kashmir also charged a non-refundable application fee of Rs. 5 lakh per project on the IPPs. The State did not impose any application fees on the 41 IPPs who had applied to the State Government for development of power projects, as charged by other forerunner hydro power states. This led to a loss of Rs. 2.05 crore to the State Exchequer.

#### **1.1.10.4      *Penalty for delay in commissioning of IPP projects***

The Sikkim Government imposed penalty of Rs. 10,000 per MW per month on the IPPs for delay in commissioning of the projects beyond the stipulated time period. A comparison of such penalty imposed by other hydro power States revealed that the penalty imposed by the State was appallingly low. Where Arunachal Pradesh charged a penalty of Rs. 40,000 per MW per month of delay, the States of Himachal Pradesh

<sup>5</sup>  $1294.70 \text{ MW} \times \text{Rs. } 5 \text{ lakh per MW} = \text{Rs. } 64.74 \text{ crore.}$



and Jammu & Kashmir imposed penalty equivalent to the royalty revenue that would have been payable to the Government had the project been commissioned in time. Uttarakhand imposed penalty of one *per cent* for one year over and above the 12 *per cent* free power for each year of delay (*totaling 13 per cent penalty per year*). Thus, due to imposition of penalty at an abysmal low rate, the State stood to lose<sup>6</sup> between Rs. 2,514.49<sup>7</sup> crore to Rs. 2,622.76 crore for each year of delay in commissioning the projects, when compared to the rate of penalty imposed by Uttarakhand, Himachal Pradesh and Jammu & Kashmir. Even when compared to Arunachal Pradesh, the State would be losing Rs. 137.08 crore per year towards royalty revenue for each year of delay. The meagre penalty of Rs. 10,000 per MW per month of delay imposed by the State had no logical basis as it was not linked to the royalty that the State would be receiving had the projects been commissioned in time. The agreements, thus, favoured the IPPs at the expense of the Exchequer.

The Department stated (September 2009) that the rate of penalty for delay in commissioning the projects was kept low as chances of non-completion of projects within scheduled time in the State of Sikkim with peaceful and enabling environment were very low. The reply was not acceptable as there was delay of more than 14 months in the commissioning of the 510 MW Teesta Stage V project executed by the NHPC leading to potential loss of Rs. 382.48 crore<sup>8</sup> to the State on its quota of 12 *per cent* free power receivable from the project during the 14 month period.

#### 1.1.10.5 Local area development fund

The terms of agreements entered into with the project developers were not standard and uniform. Only in seven projects (593 MW) out of the twenty three (5,107.70 MW), the State Government incorporated a condition in the agreements that the project developer would supply additional one *per cent* free energy or money equivalent thereof from the project for the entire 35 years from the date of commercial operation of the project towards local area development fund. In case of the other 16 projects awarded, no specific condition on the developers had been imposed towards contribution for local area development. Non-imposition of specific condition for regular contribution towards local area development on the other developers with total 4,514.70 MW capacity led to a

<sup>6</sup> The loss to the State have been calculated at current trading rate of Rs. 6.20 per unit of electricity on full installed capacity. The rise in tariff with time is presumed to offset the generation below installed capacity.

<sup>7</sup> As per Himachal Pradesh =  $3807.70 \text{ MW} \times 365 \times 24 \times 1000 \times 6.2 \times 12 \% = \text{Rs. } 2560.18 \text{ crore}$ . Uttarakhand =  $3807.70 \text{ MW} \times 365 \times 24 \times 1000 \times 6.2 \times 13 \% = \text{Rs. } 2688.45 \text{ crore}$ , Arunachal Pradesh =  $3807.70 \times 40000 \times 12 = 182.77 \text{ crore}$ .

State norm =  $3807.7 \times \text{Rs. } 10,000 \times 12 \text{ months} = \text{Rs. } 45.69 \text{ crore}$ .

Loss as compared to: Uttarakhand =  $\text{Rs. } (2688.45 - 45.69) \text{ crore} = \text{Rs. } 2622.76 \text{ crore}$ ; Himachal Pradesh =  $\text{Rs. } (2560.18 - 45.69) \text{ crore} = \text{Rs. } 2514.49 \text{ crore}$ ; Arunachal Pradesh =  $\text{Rs. } (182.77 - 45.69) \text{ crore} = \text{Rs. } 137.08 \text{ crore}$

<sup>8</sup> 12% of 510 MW =  $61.2 \text{ MW} \times 14 \text{ months} \times 30 \text{ days} \times 24 \text{ hrs} \times 1000 \text{ Kwh} \times \text{Rs. } 6.2 = \text{Rs. } 382.48 \text{ crore}$



loss of Rs. 245.20 crore<sup>9</sup> annually.

The Department stated (September 2009) that the provision of one *per cent* local area development fund was kept in all agreements signed on or after 2008 based on the revised hydro power policy of the GOI announced in 2008. This condition could not be incorporated earlier as there was no such provision. The reply however, reveals that the agreements did not contain relevant provision for incorporation of new policy measures introduced by the GOI and the State Government from time to time.

### 1.1.11 Execution of projects

#### 1.1.11.1 Equity subscription agreements

In terms of the agreements entered with the IPPs between July 2005 and March 2006, in the six<sup>10</sup> Joint Venture Projects of 100 MW and above, the IPPs would allocate 26 *per cent* of the company's equity to the Government by way of execution of equity subscription agreement, which was to be executed within a period of 6 months from the date of signing of the agreements for award of the project. It was however, seen that even after more than three years of award of the projects to the IPPs, the equity subscription agreements had not been signed as of September 2009 which is indicative of the absence of seriousness of the State Government in following the terms of the agreements and achieving the laid down milestones. Similarly, in case of joint venture projects of below 100 MW capacity in respect of which the IPPs would allocate 11 *per cent* equity to the State Government, neither the target date for executing the subscription agreement was fixed nor the agreements executed as of September 2009.

The Department stated (September 2009) that the process of equity subscription agreement has been initiated.

#### 1.1.11.2 Power purchase agreements

Of the 19 private IPPs whose agreements were still in currency till date (September 2009), power purchase agreements (PPA) in respect of only two developers had been drawn. This indicated that the remaining 17 IPPs had not been able to enter into PPA with any agency till date. In the absence of the PPAs, it was not clear how the IPPs would achieve financial closure and mobilise resources required for execution of the projects. More importantly, it was seen that the State Government had not fixed any deadline for the private developers to draw the PPAs. Failure to draw the PPAs with the prospective electricity consumers, traders or any other parties was therefore fraught with the risk of inordinate delay in completing the projects or abandonment

<sup>9</sup>  $45.147 \text{ MW} \times 365 \text{ days} \times 24 \text{ hrs} \times 1000 \text{ kw} \times \text{Rs. } 6.20 = \text{Rs. } 245.20 \text{ crore.}$

<sup>10</sup> (i) Teesta-I, (ii) Teesta-II, (iii) Teesta-III, (iv) Teesta-VI, (v) Panan, and (vi) Rangit-IV

of the projects at a later date.

The Department stated (September 2009) that two IPPs had till date completed the PPAs while the other IPPs were making efforts to finalise the PPAs early.

#### **1.1.11.3 Abandonment of projects**

The agreement signed by the State Government with the IPPs allowed various time periods, stretching upto 7 years, for commissioning of the projects after the date of signing agreement. It was however seen in audit that no condition was included in the agreements by the State Government for payment of compensation by IPPs for abandonment of the projects midway through implementation. No security deposit in the form of earnest money or otherwise, to ensure seriousness of the private developers was imposed. Absence of appropriate safeguards in the agreement against non-performance/abandonment was fraught with the risk of desertion of the projects by the IPPs midway. Absence of such safeguards also encouraged non-serious players and middlemen to apply for the projects.

The above observation was corroborated by the fact that the State Government had issued letter of intent (LOI) in August 2002 to the consortium of M/s Amalgamated Transpower Limited (ATPIL) and Karnataka Power Corporation Ltd. (KPCL), for drawing of agreement for development of the projects Teesta Stage IV (495 MW) and Teesta Stage VI (440 MW). No target date was fixed for drawing the agreement, although the Department mentioned that the agreement should be drawn at the earliest. The ATPIL/KPCL failed to draw the agreements even after a lapse of two years of issue of the LOI, while the Department dilly dallied with the matter. The LOIs were later cancelled in August 2004. The two projects were subsequently awarded to the NHPC (Stage IV) in March 2006 and M/s Lanco Energy Pvt. Ltd (Stage VI) in December 2006.

The negligence of the Department in fixing a target date for finalising the agreement and its failure to timely cancel the LOI issued to ATPIL / KPCL and non-exercise of due diligence pushed back development of the projects by a further four years and led to potential loss of Rs 2,437.52 crore<sup>11</sup> to the State Government against the free power receivable from the projects.

Subsequently, in June 2008, agreements in respect of 5 other projects, 3 of which had been awarded as early as December 2002 (126 MW) and two in March 2006 (213 MW) and LOIs issued in respect of 2 projects (160 MW) were also cancelled, indicating lack of due diligence while awarding the projects.

The Department stated (September 2009) that the delay in signing agreements was

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<sup>11</sup>  $(440 + 495) \text{ MW} = (935 \text{ MW} \times 4 \text{ yrs} \times 365 \text{ days} \times 24 \text{ hrs} \times 1000) \text{ units} \times \text{Rs. } 6.20 \text{ per unit} \times 12\% = \text{Rs. } 2,437.52 \text{ crore}$

caused due to delay in approval of draft, delay in vetting draft by concerned Departments etc. It was further stated that while some projects were cancelled due to public sentiments, others were cancelled due to failure of the IPPs to achieve the prescribed milestones and on technical grounds.

#### ***1.1.11.4 Engagement of Amalgamated Transpower (India) Ltd for developing power projects***

The Government through the SPDC proposed (December 1998) execution of four<sup>12</sup> small hydel power projects of 61 MW capacity by arranging funds of Rs. 300 crore through Market borrowings, targeted for completion within a period of four years on fixed cost and fixed time principle. The firm Amalgamated Transpower (India) Ltd. (ATPIL) was engaged for arranging funds through issue of bonds through an agreement (April 1999). The ATPIL raised (July to October 1999) bonds for Rs. 50.01 crore in the name of SPDC, guaranteed by State Government. Against this amount, expenditure of Rs. 51.34 crore<sup>13</sup> was incurred on various preliminary activities such as cost of raising bonds, preparation of DPRs etc. upto November 2003. Despite this fact, the ATPIL failed to raise further bonds for the projects. Although the SPDC decided (July 2001) to recover Rs. 9.16<sup>14</sup> crore from the ATPIL, no such recovery was made.

Subsequently, in June 2002, the SPDC decided to hand over the projects with enhanced capacity of 126 MW to the ATPIL on Build, Own, Operate and Transfer basis (BOOT) on the condition that the responsibilities of payment of Rs. 50.01 crore on account of bonds, interest and other incidentals would rest with ATPIL besides payment of Rs. 38.64 crore to SPDC to make up the losses. The Cabinet approved (October 2002) the proposal and a fresh agreement was signed (December 2002). The fresh agreement provided for completion of the projects between December 2006 and December 2007 (*Rolep I & II- December 2006, Ralong - December 2007 & Chakungchu - December 2007*). The SPDC paid Rs. 9.33 crore towards interest on bonds after signing of the fresh agreement.

The dues of Rs. 38.64 crore and interest of Rs. 9.33 crore paid by the SPDC on bonds were never paid back by ATPIL, as this had not been factored in the new agreement. Even after the fresh agreement, the ATPIL did not furnish Bank guarantee before December 2003 or thereafter for due discharge of the liabilities as agreed. The new agreement was later cancelled by the Government.

<sup>12</sup> Rolep (I & II) 21 M.W, Ralong 16 M.W and Chakungchu 24 M.W)

<sup>13</sup> Rs. 19.64 crore paid to ATPIL towards commission (Rs. 1.89 crore), advance for raising bonds (Rs. 6.56 crore), preparation of DPRs & CAT plans (Rs. 6.19 crore), construction of approach road (Rs. 5 crore). Rs. 2.65 crore spent on stamp duty and registration. Rs. 29.05 crore spent on payment of interest to Bond holders.

<sup>14</sup> Rs. 8.19 crore towards fees for raising of bonds with interest, interest of Rs. 62.25 lakh on advance paid for DPR and Rs. 35.09 lakh towards interest paid in excess due to delay in allotment of bonds.

Thus, action of the Government for executing the projects with borrowed funds by engaging the firm ATPIL without exercising due diligence resulted in wastage of Rs. 51.34 crore (more than the entire borrowed funds) on preliminary expenses and undue favour to the ATPIL. The inefficient functioning of SPDC and absence of close monitoring and supervision by Government led to ultimate cancellation of the projects which had not been awarded till date (September 2009).

The Department stated (September 2009) that action has been initiated by the Government to find new prospective developers for taking up implementation of the three projects under new terms and conditions keeping in mind overall interest of the State.

#### ***1.1.11.5 Award of projects to Gati Investments Limited (GIL)***

The Government of Sikkim signed (November 2003) an agreement with Gati Infrastructures Limited (GIL), a Public Limited Company, for development of the following three hydro power projects in the State: i) Sada Mangder, ii) Chuzachen and iii) Bhasmey with installed capacity of 63 MW, 57 MW and 32 MW respectively. The installed capacities of the projects were later enhanced to 71 MW, 99 MW and 51.7 MW, respectively. The agreement in respect of the first project (71 MW) was later withdrawn by the Government.

At a later date, between July 2005 and December 2008, the Government signed 18 agreements with other IPPs for development of various hydroelectric projects with installed capacities of the order of 40 MW to 1200 MW. In respect of all these 18 projects, the Government, inter alia, imposed the following conditions:

*a)* Non-refundable processing fees of Rs. 10,000 per MW to be paid upfront by the IPPs for the projects awarded to them, *b)* the IPPs shall at their costs construct, widen and strengthen such roads or bridges within the State as are considered necessary for implementation of the project, *c)* in case the IPPs fail to commission the projects within the specified time periods for reasons attributable to the IPPs, the IPPs shall be liable to pay penalty of Rs. 10,000 per MW per month to the Government for delay beyond the stipulated time period for commercial operation of the project, *d)* The Government shall impose an environmental cess at one paise per unit of electricity generated and sold by the IPPs to its customers and *e)* Any reasonable liabilities incurred on account of investigation studies for the projects by the Government shall be reimbursed by the company after the financial closure.

None of the above conditions were imposed on the GIL. Besides, the Government expressly agreed to provide access roads to all the three project sites of the GIL at its own cost and entered (January 2006) into a loan agreement with the GIL through the SPDC for availing loan of Rs. 4.20 crore (at the actual interest rate being paid by the GIL for such borrowing) to be utilised for construction of approach road to the power

house for its Chuzachen project. The SPDC also proposed to avail additional loan for the GIL's other projects, later on. As of December 2007, the SPDC had already availed loan of Rs. 3.68 crore from the GIL, against the loan facility of Rs. 4.20 crore, for construction of access road to the Chuzachen project.

Further, the SPDC had incurred Rs. 17 lakh on account of investigation studies for the three projects, prior to award of the projects to the GIL. The GIL however refused to re-imburse this expenditure to the Government, being well aware of the fact that there was no enabling clause in the agreement to bind the GIL for such reimbursement.

Thus, the agreement with the GIL for award of the three projects were unduly skewed in favour of the GIL thereby resulting in i) outright loss of Rs. 22.17 lakh<sup>15</sup> towards processing fees, ii) unnecessary loan liability of Rs. 3.68 crore (*plus interest*) borrowed for road construction, iii) loss of Rs. 21.70 lakh per<sup>16</sup> year on penalty in the event of delay in commissioning the projects, iv) loss of Rs. 1.32 crore<sup>17</sup> per year towards environmental cess, and v) loss of Rs. 17 lakh incurred by the SPDC on investigation studies for the three projects, prior to award of the projects to the GIL.

The Department stated (September 2009) that M/s GIL being the first IPP to venture into the State was given certain extra incentives with a view to attract other developers to the State. The reply was not acceptable as the discrepancy was due to non-existence of hydro power policy and absence of any standard terms, conditions and criteria for award of the projects to the IPPs.

### 1.1.12 Environment aspects

#### 1.1.12.1 Environment Impact Assessment

The IPPs were required to carry out environmental impact assessment (EIA) in association with the Forest, Environment and Wildlife Management (FEWM) Department as required under the Environment Protection Act 1986 through consultants drawn from reputed organisations.

Test-check of records revealed that in respect of two Projects (Teesta Stage VI and Dikchu HEP) being developed by M/s Lanco Energy Private Limited and Sneha Kinetic Power Projects limited, the Environment Impact Assessment (EIA) and Environment Management Plan (EMP) were prepared by the FEWM Department. In respect of all other projects, the EIA/EMP were prepared by agencies based outside the State. Project-wise details of personnel in the FE&WM Department who were

<sup>15</sup>  $221.7 \text{ MW} \times \text{Rs. } 10000 \text{ per MW} = \text{Rs. } 22.17 \text{ lakh}$  (calculated for all 3 projects for which agreement was signed)

<sup>16</sup>  $150.70 \text{ MW} \times \text{Rs. } 10000 \text{ per month} \times 12 \text{ months} = \text{Rs. } 21.70 \text{ lakh per year}$  (calculated for 2 projects under implementation)

<sup>17</sup>  $150.70 \text{ MW} \times 1000 \times 24 \text{ hrs} \times 365 \text{ days} \times 1 \text{ paise} = \text{Rs. } 1.32 \text{ crore}$  (calculated for 2 projects under implementation)



associated in preparation of the EIA and EMP by these agencies and the preliminary data sheets relating to collection of data and survey/investigation reports prepared after field survey and ground testing were not furnished to audit. As a result, audit could not vouchsafe authenticity of the data incorporated in the EIA and EMP reports. The Principal Chief Conservator of Forests-cum-Secretary, FEWM Department complained as early as January 2006 that the project developers were conducting survey and investigation of forest lands without involving officers of the Department. Site clearance was being applied to GOI without the knowledge of the FEWM Department and hence data provided to the GOI was not correct. EIA/EMP was being done by agencies about whom the FEWM Department was not aware. In most cases, the mandatory one year comprehensive data required for preparation of the EIA was not gathered as indicated by the period between the grant of site clearance and the grant of environment clearance.

The above facts indicate that the EMPs had been prepared through assessment of secondary data without diligent study, observation and research of the prevailing ground realities over an adequate period of time.

The Department while skirting the audit observation stated (September 2009) that since the experts in the Ministry of Environment and Forests (MoEF) scrutinised and cleared the EIA and EMP, these reports were presumed to conform to the prevalent norms. The reply was not acceptable as the developers had not associated the FEWM Department as per terms of the agreement in preparation of the EIA/EMPs before approval of the same by the MoEF.

#### **1.1.12.2 Catchment Area Treatment Plans**

The Catchment Area Treatment (CAT) Plans portray the ecological health of the catchment areas and also the various soil and moisture conservation programmes required for the treatment of catchments for their stabilisation against future erosion so that life of a reservoir in case of a seasonal storage dam is not reduced. The measures adopted for catchment area treatment, inter alia, consist of various types of plantations and allied activities followed by adequate maintenance to ensure survival of the plantations. Test check of EMPs of ten projects revealed that provision for plantation was kept for only one year in one project<sup>18</sup>, three years in six projects<sup>19</sup> and four years in remaining three projects<sup>20</sup>. No provision for subsequent weeding and maintenance of the plantations was kept in respect of four projects<sup>21</sup>. In respect of the remaining six projects<sup>22</sup>, provision for maintenance for subsequent years' plantations

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<sup>18</sup> Teesta VI.

<sup>19</sup> Panan, Rongnichu, Ting Ting, Tashiding, Rangit II and Jorethang Loop

<sup>20</sup> Teesta III, Dikchu and Rangit IV

<sup>21</sup> Teesta III, Ting Ting, Tashiding, Dikchu

<sup>22</sup> Teesta VI, Panan, Rongnichu, Rangit II, Rangit IV, Jorethang Loop



was inadequate - ranging from 0 to 4 years. Thus, CAT plans were prepared without taking into account the field requirement for survival of the plantations and were therefore, arbitrary and inadequate.

The Department stated (September 2009) that since the CAT plans are accorded approval by experts of the MoEF, the same were presumed to conform to the prevalent norms. The reply was not acceptable as the FEWM Department which was supposed to be associated in preparation of the EMPs before approval of the same by the MOEF had not ensured adherence of the CAT plans to the prevalent norms.

#### ***1.1.12.3 Implementation of Compensatory Afforestation, Catchment Area Treatment, Wildlife Preservation etc***

The FEWM Department had not yet taken up Compensatory Afforestation (CA), Catchment Area Treatment (CAT), Wildlife protection/preservation and allied activities to mitigate the distress caused to the forest, wildlife and environment due to diversion of forest lands for establishment of the hydro power projects. These activities were to be implemented simultaneously with the execution of the power projects. Six<sup>23</sup> IPPs deposited Rs. 26.37 crore (December 2005 to May 2009) towards cost of CA, CAT, Net Present Value, Wildlife Preservation and Biodiversity Preservation. The FEWM Department had prepared annual plan of operation (APO) for implementation of CAT programme in respect of only two projects<sup>24</sup> and a five year plan of operation for compensatory afforestation in respect of only one project (99 MW Chuzachen Project). No plan had so far been prepared for wildlife protection, biodiversity preservation, infrastructure development and forest protection for any project.

The APO for implementation of CAT Plan for the Jorethang Loop Project was prepared for seven years and the cost accordingly worked out for a seven year period. The Plan in respect of the Chuzachen Project was prepared for five years. Since the treatment measures adopted in the CAT Plans of all the projects were similar, reasons for adopting varying treatment periods of 5 and 7 years in respect of different projects was inexplicable. If a seven year intervention was called for, treatment plan should have been prepared for a seven year period for all projects without discrimination. In reply, the FEWM Department, inter alia, stated that no work could be undertaken towards Compensatory Afforestation, CAT programme and preservation of biodiversity as the funds received from the project developers were transferred to the Compensatory Afforestation Management & Planning Agency (CAMP) account under the MoEF, GOI. The Department had not received back the funds from the GOI for taking up the works.

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<sup>23</sup> Teesta –III, Teesta –VI, Rongnichu, Chuzachen, Rangit IV, Jorethang Loop.

<sup>24</sup> Jorethang Loop, Chuzachen.

#### **1.1.12.4      *Disposal of excavated material from the projects***

The terms of agreement drawn by the State Government required the IPPs/NHPC to ensure that the material excavated from the construction sites were dumped in specific sites identified and approved by the State Pollution Control Board (SPCB). Despite this, no action had been taken by the SPCB for identifying specific locations for dumping the excavated material. Thus, there was indiscriminate disposal of muck by the developers thereby causing degradation of land, air and water. A study conducted by the Mines, Minerals and Geology Department revealed gross negligence by the NHPC in disposal of muck generated from execution of the Teesta Stage V project. Spoils were thrown along the river banks raising the river bed of the Teesta leading to change in the flood behavior of the river, acceleration of toe erosion and degradation of the overall geo-environmental setting of the area. In the case of another project (Panan HEP), the sites identified for disposal of muck was too small to retain safely the huge quantity of muck which could lead to future disasters such as enhanced siltation of reservoirs of the downstream projects, toe erosion and change in the geo-environmental setting of the downstream areas.

The Department stated (September 2009) that sufficient areas for dumping muck are identified jointly by the Developers, FEWM Department and Land Revenue & Disaster Management Department. Such areas are properly demarcated and suitable measures taken to prevent flow of muck into the river. The reply is not acceptable as the findings by the Mines, Minerals and Geology Department revealed indiscriminate disposal of muck into the rivers.

#### **1.1.12.5      *Protection and preservation of riverine fishes***

The agreement drawn with the developers provided for appropriate steps to be taken by the project developers for protection of fish culture as per environmental requirements. Records indicated that altogether 63 species of Phytoplankton, 17 species of Zooplankton and 48 species of fish inhabit the river systems of the State. The creation of reservoirs, fluctuation in natural river discharge and diversion of river waters through closed tunnels would completely change the ecological conditions of the river systems. It was, therefore, necessary for making adequate provisions in the environment management plans for establishment of a well equipped research centre for undertaking research and designing suitable measures to mitigate the effect of construction of hydel projects on the aquatic life. MOUs were needed to be signed with the project developers securing their commitment for a long term comprehensive strategy for preservation and protection of the fishes and aquatic life in the river systems of the State.

Test-check of EMPs of ten projects, however, revealed that the measures<sup>25</sup>

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<sup>25</sup> Development of hatcheries, nursery ponds, fish farms, stocking tanks, rearing ponds etc.

incorporated in the EMPs for protection of fishes were mainly alternative strategies for raising culturable varieties of farm fish for consumption of the people which would not help in protection and preservation of the indigenous varieties of fishes in the river systems of the State. No provision towards protection of the fish and other aquatic life inhabiting the river system was made in the EMPs of two projects (*Chuzachen and Bhasmey*). Although a provision of Rs. 50 lakh for fisheries development had been kept in the EMP of the Teesta Stage V project commissioned in March 2008, steps had not been taken to plan and implement any tangible action. About 23 Km of the river Teesta between the dam site and the tail end of this project was diverted through tunnels. The fish species and other aquatic organisms along this stretch of the river thus already suffered possible damages due to the change in the flow of water. The Directorate of Fisheries had not entered into any MOU with the project developers securing their commitment for long term strategies for preservation and protection of the fishes and aquatic life in the river systems of the State.

The Department stated (September 2009) that the MoEF being the nodal agency for vetting and approving the EMPs, all necessary provisions had been made as per the prescribed guidelines and specifications. The reply did not address the issues raised in audit.

#### **1.1.12.6      *Disaster management plans***

The land profile of the State of Sikkim consists of steep slopes and narrow gorges, and with a high average annual rainfall of 3,120 mm, is prone to weathering, erosion and frequent landslides. Further, it is also located in Zone IV according to seismic zoning map of India where maximum intensity of over 5 in the Richter scale is expected. During the last 50 years, as many as 115 cases of major landslides and nine major earthquakes of magnitude more than 5 on the Richter scale were recorded<sup>26</sup>. Establishment of the hydro power projects in the State entailed extensive excavation, tunneling, blasting, construction of mammoth water reservoirs, power houses and allied activities. These construction activities put tremendous stress on the fragile environment of the State which could bring about unanticipated disasters and calamities. Unless a robust disaster management plan is prepared and put in place towards prevention and preparedness to face the disasters, the State would suffer tremendous loss of life and property besides long term damage to environment.

Audit scrutiny revealed that the issue on disaster management was incorporated in the Environment Management Plans (EMPs) of only two power projects - Teesta Stage-III and Dikchu HEPs - out of ten projects whose EMPs were examined. A

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<sup>26</sup> In terms of the studies conducted (2004 and 2006) by the Wadia Institute of Himalayan Geology, Dehradun and the School of Community Science and Technology, Bengal Engineering and Science University, Shibpur

nominal amount of Rs 2 crore and Rs 1 crore, respectively, had been included in the EMPs of these two projects towards disaster management plan. The Land Revenue and Disaster Management Department mandated by the State Government to address the issues of disaster management had not been consulted and involved in the process of preparation of disaster management plans either by the State Government or the Project developers. No effective and specific risk and responsibility sharing arrangement between the State Government and the project developers had been worked out till date.

The Department stated (September 2009) that a coordinated system for dealing with disasters was being worked out for sharing of information and evolving a proper mechanism for disaster management.

#### **1.1.13 Relief and rehabilitation**

The DPRs of the projects indicated that there would be minimum dislocation of people due to establishment of the projects. Rehabilitation and resettlement of project affected families due to establishment of the projects, therefore, did not appear to be a serious issue as on the date of audit. Actual effect of establishment of the projects on the people residing in and around the project areas would however, be known only after the construction works on the projects commence.

#### **1.1.14 Monitoring**

##### **1.1.14.1 Monitoring of project implementation by SPDC**

Although the development of hydro power projects in Sikkim was overseen by the Sikkim Power Development Corporation (SPDC), no specific responsibility within the SPDC was assigned to the officers and staff towards regular project monitoring, field visit and supervision of implementation of the projects by the developers. The SPDC did not even have in its possession vital documents like initial project proposals submitted by the developers, documents regarding business profile, audited statement of accounts, experience in implementing hydro power projects and other credentials of IPPs, copies of power purchase agreements, details of local manpower engaged by the developers, copies of EIA and EMP etc. This indicated that monitoring of implementation of the hydro power projects by the SPDC was not being done adequately.

The Department stated (September 2009) that the role of SPDC commenced after allotment of projects by the State Government. Scrutiny of credentials/profiles, experience and other documents of the IPPs was done by a Hydro Committee appointed by the Government due to which such documents were not available with the SPDC. The reply indicated that the modalities for implementation of all the vital aspects of hydro power projects had not been ironed out till date. It was further

observed that the Hydro Committee was constituted comprising of heads of various State Government departments and did not have a separate office where its records could be kept. Limited records were only available with the SPDC. The reply of the Department thus indicated lack of coordination and absence of focused action in implementation of the projects in the State.

#### ***1.1.14.2 Monitoring by multi-disciplinary committee***

In terms of the agreements drawn with the IPPs, the State Government was to constitute a multi-disciplinary committee comprising representatives of the IPPs and representatives from various departments of the Government to monitor the various issues arising during implementation of the projects. The committee was to draw methodology to regulate the payments to be made by the IPPs to the various departments of the Government for implementation of the projects. The committee was to meet at such intervals, preferably quarterly at such places as may be decided by it. The committee or any of its members would not have any authority to alter, amend or modify in any manner whatsoever the terms and conditions of the agreements.

The SPDC could not provide any record regarding either constitution of the multi-disciplinary committee, minutes of meeting of the committee or any reports indicating any monitoring or supervision of implementation of the projects conducted by the committee. Thus, the clause in the agreement regarding constitution of the committee for monitoring the projects was included only on paper.

The State Government displayed no serious intention to act on it. The Department stated (September 2009) that the proposal for constitution of project monitoring committee had been initiated.

#### ***1.1.14.3 Monitoring by project level welfare committees***

The State Government was to constitute a Project Level Welfare Committee for each project consisting of the local politicians, gram panchayats, village representatives, local administrations and IPP representatives to look after the welfare of the local people in respect of socio-economic development and employment opportunities etc.

The SPDC was categorically asked to provide details of constitution of the Project Level Welfare Committees for each project with details of members, minutes of meetings of the committees, reports of the committees and the welfare activities undertaken. No such details could be provided to audit. This indicated laxity of the SPDC in monitoring implementation of the welfare activities in the project areas.

The Department stated (September 2009) that proposal for constitution of Project



Level Welfare Committees had already been submitted and was under active consideration of the Government.

#### ***1.1.14.4 Vigil to prevent pilferage of precious materials***

During implementation of the projects, in case any objects of archaeological importance or any precious or semi-precious materials were found by the developers or any of their employee/contractors, the developers were to hand over such objects to the Government free of cost or to inform the Government immediately. Despite incorporation of the above condition in the agreements, no mechanism had been laid down by the State Government to regularly monitor execution of the projects and keep a constant vigil to see if any objects of value were unearthed during the course of implementation of the projects. There was thus, no deterrent in the existing system to prevent the developers or any of their employee/contractors from pilfering any precious material that may be unearthed during execution of the projects.

The Department stated (September 2009) that the State Government had initiated the process for constituting a monitoring committee to monitor all activities related to hydro power development.

#### ***1.1.14.5 Vetting of DPRs by the SPDC***

The SPDC was equipped with only one officer each holding the designation of Senior General Manager, General Manager and Manager, besides the Managing Director. These State officers did not possess adequate experience and exposure in planning and execution of large hydro power projects. The DPRs of even small projects of 1 to 2 MW capacity executed by the SPDC on behalf of the State were prepared and vetted by either the IITs or any other well recognised technical institutes of the country. Despite this fact the technical soundness and economic viability of all projects below 100 MW (total 13 projects) awarded to the IPPs were cleared by the SPDC for execution. This was fraught with the risk of future non-performance/under-performance and non-viability.

The Department stated (September 2009) that the SPDC sought expert opinion of retired/serving eminent geologists, hydrologists and other experienced engineers of reputed organisations like the Geological Survey of India, Central Water Commission etc on the DPRs of the projects before granting techno-economic clearance. The reply was not acceptable as no evidence was furnished to substantiate the Department's claim.

### **1.1.15 Conclusion**

*The State Government commenced award of hydro power projects to IPPs without working out any effective modality and finalising any plan or policy. Projects were*



*awarded at throwaway charges which compared very poorly with the charges imposed by all other hydro power States in the country in respect of royalty revenue, upfront premium, penalty for delay, local area development etc. Performance guarantee was not obtained to ensure earnestness of the developers to execute the projects resulting in cancellation of a number of agreements due to non-performance by the developers, which resulted in loss of substantial time and revenue receivable from the projects. Effective safeguards were not incorporated in the agreements against delay in completing various milestones laid down for completion of the projects and negligence in maintaining the projects after commissioning. Environmental issues such as identification of proper dumping sites, safe disposal of excavated materials, compensatory afforestation, catchment area treatment and bio-diversity preservation were neglected and delayed. Monitoring of execution of the projects was virtually non-existent.*

#### **1.1.16 Recommendations**

- The State hydro power policy and plan may be finalised and announced at the earliest;
- All projects in future may be awarded following a transparent bidding procedure;
- The State may consider levying appropriate application fee, upfront premium and royalty keeping in view the prevalent best practices;
- Suitable conditions against non-performance/abandonment of the projects and negligence in proper maintenance of the assets may be imposed on the IPPs forthwith;
- Strict adherence to environmental concerns may be ensured;
- Monitoring and vigil of the project execution by the IPPs may be strengthened.

## IRRIGATION AND FLOOD CONTROL DEPARTMENT

### 1.2 Implementation of Irrigation Schemes

*Out of a total geographical area of 7,09,600 hectares, the estimated area to be brought under assured irrigation system was 86,000 hectares. As on 1 April 2005, the area under assured irrigation was 23,864.05 hectares and during 2004-09, an additional area of 4,055.30 hectares was brought under assured irrigation. The Department has ensured that implementation of Minor Irrigation Scheme (MIS) in Sikkim did not suffer from any cost overrun. However, performance review indicated that there were absence of positive impact on agricultural productivity, underperformance in the areas of survey, investigation and ensuring supply of water during lean period. There was also loss of revenue due to non imposition of water tax, defunct schemes with consequential unfruitful expenditure, avoidable expenditure due to absence of uniform design specification for channels and unfruitful construction of Minor Irrigation Schemes.*

**Out of 68 physically verified MISs, 10 MISs constructed at a total cost of Rs. 26.80 lakh to cover 104.37 hectares remained defunct.**

(Paragraph 1.2.9.4)

**Although there was moderate increase in yield per hectare, there was almost no increase in agricultural area even after expenditure of Rs. 14.47 crore during 2004-05 to 2008-09.**

(Paragraph 1.2.10.1)

**The Department could not achieve the objective of providing water for irrigation during lean periods.**

(Paragraph 1.2.10.3)

**The Department had not devised a suitable system to monitor and reduce major gaps between creation and utilisation of irrigation potential.**

(Paragraph 1.2.12)

#### 1.2.1 Introduction

Sikkim is a hilly and mountainous State with a total geographical area of 7,09,600 hectares, of which the cultivable area is about 1,09,000 hectares (15.36 per cent). About 64 per cent of the working population are dependent on agriculture and horticulture which contribute about 30 per cent of the Gross State Domestic Product. The total rainfall in the State ranges from 100 to 145 inches (2,540 mm to 3,700 mm). The rainfall is very high and of very high intensity during May to September and tapers to almost zero during December to February. Against the backdrop of a

predominantly agricultural State, irrigation plays an important role in the economic upliftment of the people of Sikkim.

The State does not have any major or medium irrigation projects and was therefore dependent on only minor irrigation schemes (MISs)<sup>27</sup>.

### 1.2.2 Organisational set-up

Irrigation and Flood Control Department (IFCD) is the implementing department for development of irrigation. The Department is headed by a Secretary and assisted by a Chief Engineer, Additional Chief Engineer, Joint Secretary, Senior Accounts Officer, two Deputy Directors, four Superintending Engineers and five Divisional Engineers.

### 1.2.3 Scope of Audit

Implementation of irrigational projects in Sikkim was reviewed in audit during May 2009 to July 2009 through test-check of records relating to the period 2004-09. The review covered scrutiny of 191<sup>28</sup> (out of a total 547) schemes executed during 2004-09 at an expenditure of Rs. 4.93 crore in all the four divisions, i.e., East (71), West (44), North (21) and South (55), which is 34 *per cent* of total expenditure of Rs. 14.47 crore. Joint physical verification of the assets created was conducted (June-July 2009) in 68 out of the selected 191 MISs. The selection of samples both for scrutiny and physical verification was on the basis of random sampling.

### 1.2.4 Audit objectives

The main objectives of the performance audit were to assess:

- Whether the programmes achieved their objectives of creating adequate and targeted irrigation potential and their optimum utilisation;
- Whether planning for new projects and prioritisation for funding the ongoing projects was done in a systematic manner;
- Whether adequate funds were released on time and properly utilised;
- Whether individual projects were executed in an economic, efficient and effective manner;
- Whether the monitoring mechanism and evaluation of projects, including assessment of achievement of the desired Benefit Cost Ratio (BCR) was adequate and effective.

### 1.2.5 Audit criteria

The audit objectives were bench marked against the following criteria:

- Schemes guidelines issued by the Union/ State Governments;

<sup>27</sup> Covering a culturable command area (CCA) of below 2000 hectares. The minor irrigation schemes are known as minor irrigation channels (MICs) in Sikkim.

<sup>28</sup> AIBP: 65, NABARD (RIDF): 119, Social Welfare (SCSP/ TSP): 7

- Guidelines issued by Central Water Commission (CWC), Government of India for preparation of Detailed Project Reports;
- Detailed Project Reports;
- Circulars/instructions issued by Ministry of Water Resources, Central Water Commission, State Government and National Bank for Agriculture and Rural Development (NABARD);
- Sikkim Public Works Code, Manual and Schedule of Rates;
- Sikkim Financial Rules.

### 1.2.6 Audit methodology

The performance audit started with an entry conference with the representatives of IFCD and FRED i.e., Finance, Revenue & Expenditure Department on 21 April 2009 wherein the audit objectives, methodology and audit criteria were discussed and agreed upon with the Departments. The performance audit involved test-check of records in the secretariat and four district headquarters. Joint physical verification of the schemes was carried out with the departmental officers. Photographs of the projects and interviews with the beneficiaries were also taken to ascertain the factual position of implementation of the programme.

An exit conference was held (5 August 2009) with departmental representatives and the audit findings were discussed. The report has been finalised after incorporating the views of the Department.

### Audit Findings

The programmes under which the MISs were implemented during 2004-09 are detailed below:

(i) *Accelerated Irrigation Benefits Programme (AIBP)*: Under this programme, irrigational projects with cultivable command area (CCA) of 20 hectares and above are taken up. Out of 242 schemes with total CCA of 3,814.54 hectares involving Rs. 12.87 crore sanctioned during 2004-09, 216 schemes with total CCA of 3,237.04 hectares involving Rs. 9.71 crore were completed and 26 schemes (16 schemes beyond schedule) were under progress as of March 2009.

(ii) *Rural Infrastructure Development Fund (RIDF) financed by NABARD*: Out of 288 MISs with CCA of 1,341.40 hectares involving Rs. 6.45 crore sanctioned during 2004-09, 219 schemes with total CCA of 968.65 hectares involving Rs. 4.42 crore were completed and 69 schemes (13 schemes beyond schedule) were under progress as of March 2009.

(iii) *Scheduled Caste Sub-Plan and Tribal Sub-Plan*: Out of 17 MISs with total CCA of 27.20 hectares involving Rs. 42.79 lakh sanctioned during 2007-09, 11 schemes

with total CCA of 12.55 hectares involving Rs. 0.34 crore were completed and 6 schemes (2 schemes beyond schedule) were under progress as of March 2009.

The audit findings are enumerated in the succeeding paragraphs:

### 1.2.7 Planning

One of the most important information mentioned in the estimates prepared for obtaining technical sanction for MIS was 'potential planned' which is the aggregated land of all beneficiaries, proposed to be covered by the MIS. However, it was seen that the potential planned was worked out by the Department without any basis as beneficiaries' data was not collected. Analysis revealed that the figures of potential planned by the Department in respect of each MIS stated in the proposals submitted to the funding agencies and those depicted in estimates were inconsistent. Similarly, the Department showed potential created without actual review after construction of the MISs as no records of such review were found. Further, as verified from the individual files maintained for execution of works in respect of 22 MISs, irrigation potential was not planned at all which suggested that potential shown to have been planned against these MISs were superfluous. Therefore, the authenticity of potential created and utilised as stated by the Department was not reliable.

The district-wise position of utilisation of created potential showed that the potential was not fully utilised in any of the districts as detailed below:

**Table – 1.2.1**

District	CCA (Ha)	Potential created (Ha)	Potential utilised (Ha)	Percentage
East	9,943.73	11,883.87	8,705.88	73
North	2,008.40	2,253.61	1,921.83	85
South	5,789.24	6,464.28	5,431.13	84
West	5,890.15	6,781.99	5,221.29	77
<b>Total</b>	<b>23,631.52</b>	<b>27,383.75</b>	<b>21,280.13</b>	<b>78</b>

(Source: Information furnished to MoWR, GOI by the Department)

While accepting, the Department stated that the matter has been noted and the concerned field officers have been directed to give authentic figures as per the field data.

Besides, the following were also noticed:

The Department has not prepared any perspective plan with reference to the total cultivable area in the State and phased out year-wise targets keeping in mind the ultimate objective of bringing the entire cultivable area under all weather irrigation in a phased manner. While the annual plans with reference to the respective five year plans indicated the targets and achievements, the planning was not done with reference to area remaining to be covered, duly taking into account defunct and

damaged channels.

Proper survey and investigation is a pre-requisite for successful implementation of any scheme. In the 191 schemes test-checked, there was no recorded evidence of a survey and investigation having been conducted, which resulted in considerable decrease in water supply during November to March every year as water dried up at source during that period as detailed in paragraph 1.2.10.3. The Department stated (September 2009) that since water for paddy fields during summer was available in several jhoras, no detailed survey was required. This however, does not serve the purpose of the beneficiaries as sufficient rain water is available during summer and therefore, the objective of providing all weather irrigation water for overall agricultural development in the State was not fulfilled.

A Detailed Project Report (DPR) is vital for the successful implementation of a project. The Department did not produce the DPRs to Audit except for 63 DPRs, which were produced during Exit Conference (August 2009), examination of which showed that a uniform pattern of 'demand from farmers/general public', 'perenniality of sources with discharge of 0.50 cusec in lean period and 5.00 cusec in peak period', 'non availability of water before construction and expected sufficiency of water after construction' etc., were mentioned. Even these DPRs were not kept in the concerned files produced to Audit and were never utilised for evaluation of execution with reference to the objective of the MISs. The Department stated (September 2009) that the DPRs were prepared as per guidelines of the Ministry of Water Resources, Government of India and the same were vetted and sanctioned by the Ministry. The reply was not acceptable as these DPRs also did not conform to the CWC guidelines and were only work estimates.

The success of any irrigational project depends on the availability of water in the source from where the water is to be channelled to the irrigational fields. However, the Department has neither addressed the issue nor kept any provision as yet towards source development. This has resulted in a number of channels remaining dry during lean period as mentioned in paragraph 1.2.10.3. While accepting, the Department stated (September 2009) that the matter would be looked into.

The Department continued to create new MISs instead of ensuring proper utilisation of MISs already constructed. According to the fourth census (2006-07), 305 schemes constituting 21 *per cent* of total number of existing schemes were defunct. The Department should therefore, have made the channels functional by according high priority instead of going in for new construction. While accepting, the Department stated (September 2009) that it is already in the process of preparing estimates for defunct channels all over Sikkim and the same would be put up to the Government for providing funds for restoration.



According to AIBP guidelines, Benefit Cost Ratio (BCR) should not be less than one. In one<sup>29</sup> case, it was seen that one component i.e., benefit due to reduced cost of farming (on time saved by farmers for irrigating the fields), which was not included in the guideline issued by CWC for preparation of DPRs, was taken into consideration for calculation, which overstated the BCR. Had the BCR not been overstated, the scheme would not have qualified for execution and funding under AIBP. It was further seen that the Department had never calculated the actual BCR on the basis of factual data collected on any MIS executed which indicated that the BCR calculated was purely theoretical and not based on factual position. Further, in case of schemes funded under NABARD, no BCR was calculated to ascertain the economical viability of the schemes.

Thus, due to non-preparation of BCRs, cost could not be compared with the benefits. While accepting, the Department stated (September 2009) that in future it would be ensured that such lapses are not repeated.

## **1.2.8 Financial management**

### **1.2.8.1 Persistent savings**

During the years under review, out of a total provision of Rs. 56.21 crore (including *Direction & Administration, Machinery & Equipment, Assistance to Zilla Panchayat/Gram Panchayat, Other Expenditure on Flood Control*) available for execution of minor irrigation works, Rs. 46.60 crore was spent with persistent savings over all the years ranging from 6 per cent in 2005-06 to 28 per cent in 2007-08 indicating deficient budgeting process. The Department attributed the reasons for the savings to delay in obtaining sanction from MoWR and re-appropriation of funds to meet the obligation of State share for AIBP (2007-08), non receipt of resources (2005-06), non-completion of works (2006-07) and non-receipt of funds from the Government of India.

### **1.2.8.2 Surrender and supplementary provision**

Due to eventual savings of Rs. 1.34 crore, Rs. 2.15 crore and Rs. 2.47 crore during the years 2004-05, 2006-07 and 2007-08, supplementary provisions of Rs. 16.00 lakh, Rs. 5.15 lakh and Rs. 87.93 lakh in the respective years proved unnecessary which indicated absence of proper control over expenditure by the Department. The Department stated (September 2009) that savings occurred mainly under Stock Suspense due to purchase of stock materials from concerned work heads directly. Savings occurred on RIDF financed by NABARD as some works were not completed due to practical problems in the field. Further, as no adequate resource was received under NEC, there was also savings under this head in 2007-08. The fact

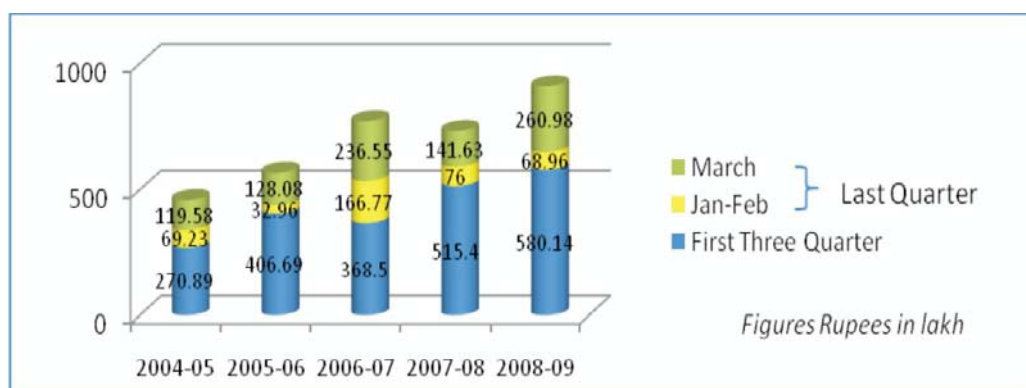
<sup>29</sup> MIS at Chalisay Army Camp to Bagan Genopang Khet

however, remained that during 2004-05, there was savings of Rs. 8.05 lakh after surrendering 6.41 lakh in March 2005 even under Direction and Administration and during 2007-08, there was saving of Rs. 233.76 lakh under Diversion Schemes (AIBP) even after reduction of Rs. 145 lakh through surrender and re-appropriation of Rs. 128.53 lakh to meet the State's share of funds for AIBP.

### 1.2.8.3 *Rush of expenditure at end of financial years*

Analysis of expenditure under Minor Irrigation for the last five years revealed that the Department spent huge amounts during the last quarter of the years, especially during the closing months. While the percentage of expenditure during the last quarter varied between 28 and 52 *per cent*, in the month of March, it varied between 19 to 31 *per cent* as shown below:

**Chart: 1.2.1**



The financial propriety requires that Government expenditure be evenly spread throughout the year as far as practicable and rush of expenditure at the close of the year indicated ill-planned expenditure. The Department stated (September 2009) that actual executions of works takes effect from October and are completed between December and February. The bills are raised during January, February and March and payments made during March.

However, the fact remained that the expenditure was not evenly phased as required under Sikkim Financial Rules which stipulate rush of expenditure in the closing months of financial year as a breach of financial regularity.

### 1.2.8.4 *Stock suspense*

The Department operated a suspense account with the provision and expenditure as under:

**Table – 1.2.2***(Rupees in lakh)*

Year	Budget Provision	Expenditure	Saving	Percentage of Saving
2004-05	100	75	25	25
2005-06	100	24	76	76
2006-07	100	3	97	97
2007-08	100	15	85	85
2008-09	5	1.5	3.5	70

*Source: Finance and Appropriation Accounts.*

Though there were huge savings during all the years, there were delays in completion of works due to non-availability of stock materials as stated in paragraph 1.2.9.2. The Department stated (September 2009) that due to resource constraints and delay in completion of supplies and execution of works, it decided to procure the stock materials debiting the scheme head which resulted in saving.

### **1.2.9 Programme implementation**

During 2004-09, against the target for creation of irrigation potential for 4988.74 hectares at an estimated cost of Rs. 19.75 crore, the Department succeeded in achieving 4055.30 hectares incurring an expenditure of Rs. 14.47 crore. Scrutiny of records on implementation of the schemes indicated the following irregularities:

#### **1.2.9.1 Design for construction of channels**

The Department had not devised any uniform design for construction of channels despite the fact that all the channels are to be constructed in areas with similar features. In the absence of any specified design, the width of side walls of the channels varied widely from one place to other, even for the channels with same width and depth, without any recorded reasons or justification. While the width of side walls in North District was taken as 15 cms, the same in the other three districts varied from 20 to 23 cms. This indicated that channels with side wall width of 15 cms were workable and increase in the same to 23 cms was without any justification. Due to taking up of greater than required widths of side walls, the Department had to incur an avoidable expenditure of Rs. 10 lakh during 2004-2009 towards construction of channels. While accepting, the Department stated (September 2009) that the field engineers have been issued instruction to keep the width within 15 cms.

#### **1.2.9.2 Completion of works**

According to the guidelines of AIBP (2 years' completion period) and RIDF financed by NABARD (3 years' completion period), there was no time over run in the implementation of MISs in the State. However, all works being small in nature, the Department allowed the completion time as per estimate of the works. In 90 works

out of 191, there were delays ranging from 17 days to 582 days for completion of works as per agreed completion time leading to delay in accrual of intended benefits from the schemes. The Department stated (September 2009) that completion was delayed due to delay in supply of materials by State Trading Corporation of Sikkim and Sikkim Investment and Marketing Federation. The fact however, remained that there were savings under stock suspense every year. Further, in 18 out of 90 cases of delay, the reasons were other than stock materials. Besides, in 16 cases, no reason was mentioned in the applications for extension of time.

#### **1.2.9.3      *Extension of benefit to SC/ ST beneficiary***

Although the Scheduled Caste Sub-Plan (SCSP) and Tribal Sub Plan (TSP) was to ensure direct benefits to individuals or families belonging to SCs and STs, test-check of 7 out of 17 works revealed that the Department did not maintain the list of beneficiaries along with the details of benefits being extended to them due to which Audit could not ascertain as to whether any benefit was actually extended to the SC and ST beneficiaries. The Department stated (September 2009) that the information about the intended population to be benefited was sent by SJEDW to DPER & NECAD for approvals. However, the IFCD, being the implementing agency for irrigational activities, should have maintained proper records.

#### **1.2.9.4      *Unfruitful expenditure on defunct MISs***

Out of 68 MISs physically verified, 10<sup>30</sup> MISs constructed at a total cost of Rs. 26.80 lakh to cover 104.37 hectares of land remained defunct due to landslides, leakage of water near the source and construction of roads. In Gera Gaon MIS at Penlong Bazaar, Dong and Tokdang MISs, the land remained totally dry and therefore, the farmers had to cultivate maize only. In remaining areas, the farmers had to collect water from the nearby small brooks and draw water from small earthen drains. No action was initiated by the Department to make these functional. This not only deprived the beneficiaries of the intended benefits, but also resulted in unfruitful expenditure. The pictorial views of some schemes are given below:

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<sup>30</sup> 1) Gera Gaon below Penlong Bazaar 2) Gagcha Jhora Tempo Tar Khet Changey Senti 3) Katuk House to Malami Dara L/Tumin 4) Seem Khola to Surkikhet at Martam 5) Tokdang MIS 6) Khanikhola to Pradhan Gaon 7) Thulo Khet at Dong Busty 8) Jugdum Khola at Aarubotey 9) Lower Labing 10) Kajini Kulo.



**Image – 1.2.1**



*Defunct MIS at Gere Gaon below Penlong Bazaar (N) & surrounding Dry Fields*

**Image – 1.2.2**



*Defunct MIS at Khanikhola to Pradhangaon (S)*

### **1.2.9.5 Unfruitful construction of MISs**

Three schemes constructed at a cost of Rs. 3.48 lakh covering 26 hectares in North District turned out to be unfruitful as these did not serve the purpose:

MIS at Upper Khedum to Lower Khedum at Lachung – The fields were above the level of the scheme. The scheme serves only as a drain.

MIS at U/Khedum under Lachung – The scheme serves only as a drain.

MIS at Tingvong – 70 per cent of the length of the channel is after the last outlet to the irrigated field. This channel is being used as a roadside drain.

**Image – 1.2.3**



*MIS at U/Khedum under Lachung serving only as a drain with fields on either side of it being above the level of the channel*

**Image – 1.2.4**



*MIS at Tingvong serving as a roadside drain*

### 1.2.10 Impact assessment

#### 1.2.10.1 Impact on agricultural productivity

A comparative scrutiny of productivity with area under cultivation of agricultural produce indicated that while there was increase in yield per hectare of 7 *per cent* in cereals, 4 *per cent* in pulses and 14 *per cent* in oil seeds, the total production under cereals and oil seeds increased by 7 *per cent* and 0.66 *per cent* respectively with a decrease of 10 *per cent* in pulse production. Since the area under cultivation had decreased only marginally during the period under review, there was almost no impact on the agricultural production in terms of yield per hectare. Notwithstanding the marginal decrease (81.23 hectare to 80.68 hectare constituting 0.68 *per cent*) in overall area, even after spending an aggregated amount of Rs. 14.47 crore (Rs. 9.71 crore under AIBP, Rs. 4.42 crore under NABARD and Rs. 0.34 crore under SCSP & TSP etc.) during 2004-09, the Department neither could ensure increase in yield per hectare nor increase in the overall area brought under cultivation. The details are given below:

**Table – 1.2.3**

Year	Area (in '000 hectares)				Production (in '000 tonnes)			Yield (in Kgs/ hectare) (Percentage of + increase, - decrease)		
	Cereals	Pulses	Oil seeds	Total	Cereals 1439.68 (2004-05)	Pulses 950.81 (2004-05)	Oil seeds 750.75 (2004-05)	Cereals	Pulses	Oil seeds
2004-05	64.57	6.71	9.95	81.23	94.73	6.44	7.56	1439.68 (0.00)	950.82 (0.00)	747.71 (-0.40)
2005-06	64.57	6.80	9.95	81.32	100.00	6.76	7.95	1548.71 (7.57)	994.12 (4.55)	798.99 (6.86)
2006-07	68.71	5.96	8.97	83.64	103.66	5.45	7.29	1509.769 (-2.51)	914.44 (-8.02)	812.71 (1.72)
2007-08	64.06	6.06	8.60	78.72	95.85	5.89	7.47	1496.25 (-0.89)	971.95 (6.29)	868.60 (6.88)
2008-09	65.90	5.88	8.90	80.68	101.22	5.79	7.61	1538.00 (2.79)	985.00 (1.34)	855.00 (-1.57)

Source: Productivity report of Food Security and Agriculture Department.

The above statistical data was further corroborated by interviews of 35 beneficiaries of 14 schemes, which confirmed that there was no increase in production after construction of the MISs.

The main objective of irrigation, i.e., to increase cultivable area and production was not achieved. It was further seen that the Department had never analysed the impact of implementation of these MISs. Thus, due to non-repair of damaged and defunct channels (paragraphs 1.2.7 and 1.2.9.4), non-availability of water in lean season due to defective selection of sources (paragraphs 1.2.9.4, 1.2.9.5, 1.2.10.3-1.2.10.5), flow of water remaining more or less static even after construction of MISs (paragraph 1.2.10.1), poor maintenance (paragraph 1.2.11.2), defects noticed by the CWC (paragraph 1.2.12) and under-utilisation of potential created (tables 1.2.1,



1.2.4 and 1.2.5) etc., the construction of MISs did not have the desired impact on the production.

The Department stated (September 2009) that the main objective of the Department was to provide water for cultivation. The productivity entirely depends on the farmers/growers and types of crops, quality of seeds, cropping pattern etc. However, the fact remained that the Department was unable to provide irrigation to a large percentage of area (58 *per cent*) as mentioned in paragraph 1.2.10.2.

### 1.2.10.2 *Creation and utilisation of irrigation potential*

The scheme- wise details of potential created and utilised are shown below:

**Table – 1.2.4**

Name of Schemes	Potential created (Ha)		Potential utilised (Ha)	
	Target	Achievement	Target	Achievement
AIBP	3,814.54	2,900.49 (76)	3,623.81	2,762.21(95)
NABARD	1,147	1,132.19 (99)	1,032.72	998.70 (88)
SCSP&TSP	27.20	22.62 (83)	24.45	19.60 (87)
	<b>4,988.74</b>	<b>4,055.30</b>	<b>4,680.98</b>	<b>3,780.51</b>

*Source: Departmental information*

*Figures in parenthesis indicate percentages*

While the scheme wise potential utilisation was shown to have been ranging from 87 to 95 *per cent*, the third and fourth Minor Irrigation Census portrayed the position of potential created and utilised as 62 and 78 *per cent* respectively as detailed in the table given below.

**Table – 1.2.5**

Irrigation Censuses	Potential created (Ha)	Potential utilised (Ha)
Third (2001-02)	23,151.9	14,421.49 (62)
Fourth (2006-07)	27,381.75	21,280.11 (78)

*(Source: Information furnished to MoWR, GOI by the Department)*

*Figures in parenthesis indicate percentages*

However, the Department could not produce documentary evidence in support of the claim of potential utilisation and the data validated by its own census contradicted their claim of higher achievement. Audit analysis further revealed that the Department had not collected inputs either from the field offices or from survey of the beneficiaries about the creation and utilisation of potential to ascertain the factual position. Further, irrigated area of only 27,381.75 hectares as revealed by fourth Census indicated that 38,518.25 hectares of land (58 *per cent*) out of total 65,900 hectare under cereal cultivation alone (Table 1.2.3) was without irrigation. Furthermore, against the potential creation of 27,381.75 hectares, only 78 *per cent*

could be utilised. This indicated that either the figures are factually incorrect or there remained a huge gap between the area under cultivation and the area to which irrigation facility could be extended by the Department.

Accepting the audit observation, the Department stated (September 2009) that the matter would be looked into in near future to ensure effective coordination amongst departments/agencies involved in different aspects of irrigation management as well as data collection.

#### **1.2.10.3      *Availability of water for irrigation during lean period***

Sikkim falls within the high rainfall zone and during monsoon, the State receives a high precipitation and its annual rainfall touches 3,700 mm. However, during winter seasons of November to March, there is serious scarcity of water for irrigation. During interviews with beneficiaries of 28 schemes out of 58 functional schemes verified (actual schemes verified 68 out of which 10 are under construction/just completed), the beneficiaries stated that the irrigation channels remain dry during the winter seasons when more water is required for irrigation.

Thus, there were defects in survey and investigation and selection of sources. This coupled with the absence of effective monitoring to identify the reasons for scarcity of water during lean period and corrective action on the defects noticed by the CWC (paragraph 1.2.12) defeated the objective of providing water for irrigation during lean period. There was also lack of integrated, holistic approach to natural resource management, with an emphasis on water resource augmentation and conservation.

The Department stated (September 2009) that it would be very expensive to bring water from a far away water source to the fields during the dry season of winter. However, during winter season, the farmers plant crops which do not require much water.

While the reply reflects the Department's approach towards one of the vital needs for overall agricultural development in the State, as already stated in paragraph 1.2.10.1, the fact remained that the Department could not provide sufficient water during lean period.

#### **1.2.10.4      *Adequacy of benefit from constructed channels***

In case of four MISs<sup>31</sup> constructed at a cost of Rs. 7.43 lakh and intended to cover 14.80 hectares, the channels did not reach the intended beneficiaries' fields as water was to be taken to beneficiaries fields through the earthen channel from end points. This resulted in inadequate benefit from the constructed MISs due to water loss on

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<sup>31</sup> MIS from Luksom Jhora at Pakyong, Changeylakha MIS at School Dara, Karma Khet MIS and MIS from Zingpong Source to Sonam Palzor Khet at Middle Syari

account of seepage. Besides, in case of Changeylakha MIS, the channel terminated at a Jhora from where water was taken through earthen channel to beneficiaries' field causing risk of environment pollution, health hazards and damaged crops.

The Department stated (September 2009) that the MISs constructed were as per the provision made in the estimate for the required length. Since water is sufficient during monsoon, the chances of water loss is negligible when allowed to flow through the earthen channel and since the habitations were very scanty in the rural areas, the chances of pollution and health hazard did not arise. While the reply suggests that the estimates were defective, it also indicated the Department's indifference towards the inevitable land erosion due to seepage of water into the soil.

#### **1.2.10.5 Supply of polluted water**

In one scheme (Chalisay Army Camp to Bagey Genopang Khet) completed at a cost of Rs. 4.80 lakh, the drain carrying dirty water is running across the constructed channel. Hence, drain water is getting mixed with water for irrigation thereby decreasing the yield in the fields besides leading to health hazards for the public as can be seen from the photograph below:

**Image – 1.2.5**



*Drain water flowing into MIS Chalisay Army Camp to Bagey Genopang Khet*

### **1.2.11 Participatory Irrigation Management**

#### **1.2.11.1 Non levy of water charges**

According to the guidelines operative from 1st February 2002, the 'Reforming States' in special category including Sikkim will be provided Central assistance in full without any State's share if they rationalise their water rates in such a way that full operation and maintenance cost of the irrigation projects are recovered in 5 years.

Though the Sikkim Irrigation Water Tax Act 2002 for levy of water charges has come into effect from April 2002 with rates of taxes notified and Sikkim Irrigation Water Tax Rules 2007 passed by the Sikkim Legislative Assembly, the tax has not yet been imposed due to which, the Government sustained a loss of Rs. 63.84 lakh<sup>32</sup>. Thus, the State not only lost the benefits extended by the GOI, it failed to create sense of belonging amongst the beneficiaries by levying the water charges. During Exit Conference (August 2009), it was stated that from 2010-11 onwards, the water charges will be collected by the Department.

#### **1.2.11.2 Non formation of water user groups**

The Department has neither formed any water user group nor handed over the constructed channels to the local Panchayats for upkeep and maintenance. This resulted in improper maintenance of channels with consequential denial of intended benefits. Further, non-maintenance also resulted in blockage of water leading to overflow and possible landslides at surrounding areas, uneven flow leading to non availability of water at tail points, growth of grass leading to cracks at channels and supply of dirty water as was seen in the cases of Pabong Khola to Rungdung Khet and Damala Gaon MISs. A few photographs highlighting lack of maintenance is given below:

**Image – 1.2.6**



*MIS at Ramathang in miserable condition due to non maintenance*

**Image – 1.2.7**



*Non visible Damala Gaon MIS due to non maintenance*

The Department stated (July 2009) that the action had been initiated to clear the boulders and slips and flow of some water had been made possible from this year (2009-10) in case of Pabong Khola MIS and bush had been cleared and there was

<sup>32</sup> @ minimum rate of Rs. 60 per hectare per year on 21280.11 hectares of potential utilised by beneficiaries over a period of five years during 2004-09.



smooth flow of water in the Dhamala Gaon MIS. The action of the Department is only partial and temporary measure, besides a belated one. Also, the fact remained that the Department had not evolved permanent solution by formation of water user groups. The Department further stated (September 2009) that formation of Water Users Association was made mandatory for all new schemes and that Association would be appropriately empowered once the MISs are handed over to them.

### **1.2.12 Monitoring and evaluation**

The progress of MISs is to be monitored by the State Government through agencies independent of the construction agencies. The schemes were to be monitored by the CWC, NABARD and SJEWD, besides the IFCD itself. While the IFCD, SJEWD, NABARD have not evaluated the implementation of the schemes as yet, CWC conducted three field visits (February 2007, April 2007 and May 2007) covering 13 schemes, as per records produced to Audit, and observed that i) the outlets should have been provided at regular intervals and the silt level in most of the channels should have been raised at least by 0.15 metre, ii) proper arrangements were to be made for taking the channels to the other side of the road, iii) sizes of channels constructed were bigger than what were designed, iv) scope for more coverage of areas was not exploited, v) crate walls were required for protection of channels, vi) culturable command area (CCA) required extension upto 20 hectares as per AIBP norms, vii) damaged part of channels were to be put to proper shape etc. However, the follow up action on the observations of the monitoring agency were not produced to Audit for examination. The Department also has not constituted any State Level Committee or Project Level Committee to monitor the implementation of AIBP at project level as well as State level as envisaged in the scheme guidelines.

Similarly, guidelines for schemes funded by NABARD envisaged State Government to endeavour devising a suitable system after completion of the projects to monitor and reduce the major gaps viz., (i) irrigation potential created vs. utilisation; (ii) fertility of the soil, gap between desired levels and the present levels and (iii) productivity gap, i.e., the gap between actual production and the production envisaged in the project report. Test-check of records of selected MISs however, revealed that no action was taken in respect of items (ii) and (iii). This indicated that there was no integrated approach to agriculture and irrigation. The two sectors function entirely independent of each other in a manner which contradicts the dictates of rationality and sound policy.

The Department did not have the monthly progress reports for the years 2004-05 and 2005-06. Further, in the case of MIS at Tokman (Taryang) of Lower Dzongu, before the commencement of construction works of the channel, the progress report for the month of March 2009 reflected completion of 35 meters length of the channel and in the case of MIS at Andheri Gairi Khet of Sakyong, against the commencement of

only protective wall, the progress report for the month of March 2009 reflected completion of 60 meters length of channel. Also, none of the schemes were found ever evaluated by the Department and thus, the impact of the various schemes implemented remained unascertained.

The Department stated (September 2009) that observation made by Audit has been noted and the matter would be looked into in future.

#### **1.2.13 Conclusion**

*The programmes did not achieve the objective to increase the cultivable area and production due to improper survey, investigation, absence of planning for source development, supply of polluted water to agricultural fields, non formation of water user groups, absence of planning for ensuring availability of water during lean period, defunct channels awaiting repair, delay in completion of channels etc. Budgeting process was deficient in the absence of an effective mechanism for monitoring which resulted in improper surrender and supplementary provisions, rush of expenditure at the end of years. The State is yet to enforce implementation of Sikkim Irrigation Water Tax Act 2002 to avail cent per cent financial assistance from GOI and avoid huge revenue loss. Also, there was unfruitful expenditure on defunct schemes, avoidable expenditure on construction without design specification, unfruitful construction of MISs and inadequate benefit from construction of channels. The IFCD also has not taken action to evaluate the implementation to take remedial measures for improvement in the irrigational development to reduce the gap between creation and utilisation of potential, actual production and production envisaged.*

#### **1.2.14 Recommendations**

- Proper survey and investigation may be conducted so that sustainable and perennial source are identified for availability of water round the year;
- Water user groups may be formed for ensuring maintenance and repairs of the schemes undertaken;
- Water charges may be levied on the beneficiaries which not only would create the sense of belonging and generate revenue but also entitle the State to avail 100 per cent Central assistance;
- BCR of all the schemes may be worked out on factual data after proper survey on benefits accrued;
- Monitoring mechanism may be streamlined to evaluate the implementation of the schemes.



## TRANSPORT DEPARTMENT (SNT DIVISION)

### 1.3 Performance of Sikkim Nationalised Transport

#### Executive Summary

*The Sikkim Nationalised Transport (SNT) provides public transport in the State through its 12 depots. The SNT had fleet strength of 96 buses and 85 trucks & tankers as on 31<sup>st</sup> March 2009 and carried an average of 0.02 lakh passengers per day during 2004-09. The performance audit of the SNT was conducted to assess efficiency and economy of its operations, possibility of realigning the business model to tap non-conventional sources of revenue, existence and adequacy of fare policy and effectiveness of the top management in monitoring the affairs of the SNT.*

#### **Finances and performance**

*The SNT sustained a total loss of Rs. 12.91 crore during the period 2004-09. The SNT does not maintain separate records relating to cost incurred in the bus operations. However, traffic revenue earned and kilometres operated by buses are recorded separately. In 2008-09, the SNT earned Rs. 2.54 crore of traffic revenue from buses by operating 16.35 lakh effective kilometres. Audit noticed that with a right kind of policy measures and better management of its affairs, it is possible to increase traffic revenue and reduce overall costs, so as to limit losses and serve its cause better.*

#### **Share in Public Transport**

*The SNT enjoys the monopoly in operation of buses in the State. The SNT, however, failed to cater the growing demand of public transportation as there was a*

*continuous decline in the per Capita KM operated per year from 3.39 in 2004-05 to 2.39 in 2008-09. The decline in share was mainly due to operational inefficiency. Nonetheless, the vehicle density per one lakh population remained almost stable during the period 2004-09. This was due to the inability of the SNT to expand its operations.*

#### **Vehicle profile and utilisation**

*The SNT had 96 buses as on 31<sup>st</sup> March 2009. Of these 31 (32.29 per cent) were overage, i.e., more than 10 years old. The percentage of overage buses declined from 46.51 in 2004-05 to 32.29 in 2008-09 due to acquisition of 27 new buses during 2005-09 at a cost of Rs. 2.98 crore.*

*The SNT's fleet utilisation at 84 per cent in 2008-09 was below the All India Average (AIA) of 90 per cent in hilly areas. Its vehicle productivity at 58 kilometres per day per bus was below the AIA of 196 kilometres. Though the SNT achieved the AIA load factor in 2008-09 but none of the routes operated could earn profit. Test check in Audit revealed that none of the routes operated during 2004-09 could recover their total cost.*

#### **Economy in operations**

*Manpower and fuel & lubricants constitute 84.70 per cent of total cost in 2008-09. Thus, the controllable expenditure has to come from them. The SNT does not maintain separate records for manpower and its cost associated with the bus operations. However, the*

*SNT succeeded in reducing the overall manpower per vehicle from 5.92 in 2004-05 to 4.62 in 2008-09. It also brought down the repairs and maintenance expenditure from Rs. 60,241 in 2004-05 to Rs. 41,520 in 2007-08 per vehicle. Though the SNT was able to attain its own fuel consumption targets, however in the depots test checked by Audit, it consumed 1.69 lakh litres of excess fuel resulting in extra expenditure of Rs.55.20 lakh during 2005-09 as compared to AIA.*

#### **Revenue Maximisation**

*The SNT has about 13,194 square metres of land. The vacant space can be developed by it or through public private partnership basis to earn steady income which can be used to cross-subsidise its operations.*

#### **Need for a regulator**

*The fares in Sikkim are decided by the State Government. The fare policy adopted by the State Government is based on costs of inputs but is not on a scientific basis. In the absence of norms, the adequacy of services on uneconomical routes could not be ascertained in Audit. Thus, it would be desirable to have an independent regulatory body to fix the fares, specify*

*operations on uneconomical routes and address grievances of commuters.*

#### **Inadequate monitoring**

*The fixation of targets for various operational parameters and an effective Management Information System (MIS) for obtaining feedback on achievement thereof are essential for monitoring by the top management. The SNT did not set any targets for various operational parameters. The MIS was not effectively utilised by the SNT so as to exercise adequate management control over the operations.*

#### **Conclusion and Recommendations**

*Though the SNT is incurring losses, it is mainly due to its operational inefficiencies. The SNT can control the losses by taking adequate measures to improve the operational parameters and also resorting to tapping non-conventional sources of revenue. The review contains seven recommendations to improve the SNT's performance. Improving fleet utilisation, creating a regulator to regulate fares and services on uneconomical routes, tapping non-conventional sources of revenue and creation of separate cost centres for buses, trucks & tankers are some of these recommendations.*

## **Introduction**

**1.3.1.1** In Sikkim, the public road transport is primarily provided by the Sikkim Nationalised Transport (SNT) which is mandated to provide an efficient, adequate, economical and properly co-ordinated road transport. The State does not allow the private operators to ply buses. However, private taxis are permitted to ply as alternative mode of public transport. The fare structure is controlled and approved by the State Government.

**1.3.1.2** The SNT was set up in 1944 under the administrative control of the Transport Department of the Government of Sikkim. The day-to-day operations are carried out by the Secretary (Transport Department), Government of Sikkim, with the assistance of Principal Chief Engineer, General Manager, Additional Secretary (Administration), Additional Secretary (Operation), Additional Director (Accounts)

and Depot Managers. The SNT has one Regional Office, one Central Workshop and 12 depots. The bus body building is outsourced by the SNT while tyre retreading operations are carried out at the Central Workshop as well as through external agencies.

**1.3.1.3** The SNT had a fleet strength of 96 buses, 52 trucks and 33 tankers as on 31 March 2009. The SNT carried an average of 0.02 lakh passengers per day during 2004-05 to 2008-09. The total revenue of the SNT was Rs. 17.71 crore in 2008-09 which was equal to 0.87 *per cent* of the State Gross Domestic Product at the cost of 2005-06. The SNT employed 836 employees as on 31 March 2009.

**1.3.1.4** A review on the operational performance of the SNT was included in the Report of the Comptroller and Auditor General of India for the year 2002-03, Government of Sikkim. The report was discussed by Public Accounts Committee (PAC) during February 2006. The major recommendations of the PAC were that (i) the SNT should explore every possibility to improve the vehicle productivity, and (ii) the SNT should ensure that the fuel efficiency is maintained at 3.00 KM per litre.

#### Scope of Audit and Audit Methodology

**1.3.2.1** The present review conducted during April to May 2009 covers the performance of the SNT during the period from 2004-05 to 2008-09. The review mainly deals with operational efficiency, financial management, fare policy, fulfilment of social obligations and monitoring by top management of the SNT. The Audit examination involved scrutiny of records at the Head Office, the Central Workshop<sup>33</sup> and three<sup>34</sup> out of the 12 depots, based on number of buses held by the depots (Gangtok: 45 buses, Rangpo: 16 buses and Jorethang: 32 buses) out of 96 buses as on 31 March 2009. The revenue earned by these depots in 2008-09 against total revenue of Rs. 17.71 crore was Rs. 2.71 crore (Gangtok: Rs. 1.82 crore, Rangpo: Rs. 0.31 crore and Jorethang: Rs. 0.58 crore).

**1.3.2.2** The methodology adopted for attaining the audit objectives with reference to audit criteria consisted of explaining audit objectives to top management, scrutiny of records at Head Office and selected units, interaction with the auditee personnel, analysis of data with reference to audit criteria, raising of audit queries, discussion of audit findings with the Management and issue of draft review to the Management for comments.

<sup>33</sup> Central Workshop, Jalipool.

<sup>34</sup> Gangtok, Rangpo and Jorethang depots.

### Audit Objectives

**1.3.3.1** The objectives of the performance audit were to assess:

#### Operational Performance

- the extent to which the SNT was able to keep pace with the growing demand for public transport;
- whether the SNT succeeded in recovering the cost of operations;
- the extent to which the SNT was running its operations efficiently;
- whether adequate maintenance was undertaken to keep the vehicles roadworthy;
- the extent to which economy was ensured in cost of operations; and
- whether the manpower management was effective and efficient.

#### Financial Management

- the possibility of realigning the business model of the SNT to tap non-conventional sources of revenue and adopting innovative methods of accessing such funds.

#### Fare Policy and fulfillment of Social Obligations

- the existence and adequacy of fare policy; and
- whether the SNT operated adequately on uneconomical routes.

#### Monitoring by Top Management

- whether the monitoring by SNT's top management was effective.

### Audit Criteria

**1.3.4.1** The audit criteria adopted for assessing the achievement of the audit objectives were:

- all India averages (AIA) for performance parameters;
- performance standards and operational norms fixed by the Association of State Road Transport Undertakings (ASRTU);
- physical and financial targets/ norms fixed by the Management;
- norms for life of a bus, preventive maintenance schedule, fuel efficiency norms, etc.;
- instructions of Government of India (GOI) and Government of Sikkim (GOS) and other relevant rules and regulations; and
- procedures laid down by the SNT.

### Financial position and Working Results

**1.3.5.1** The SNT operates trucks & tankers besides buses. Though the buses constitute 53 *per cent* of total fleet strength (as on 31 March 2009), the SNT does not

maintain separate records relating to various components of costs relating to bus operations. However, traffic revenue and effective kilometers are recorded for bus operations separately. In view of the above, the costs components, total revenue, operating revenue, total expenditure and operating expenditure are not comparable with reference to bus operations. However, the details of consolidated working results are given below.

Table – 1.3.1

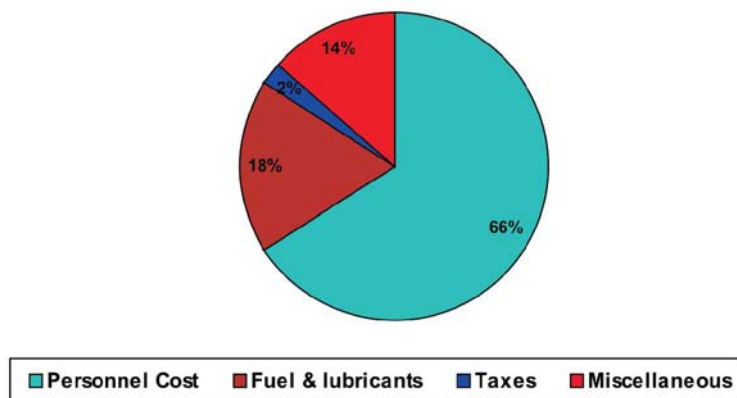
Sl.No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1.	Total Revenue <sup>35</sup>	9.93	11.58	14.86	15.62	17.71
2.	Traffic revenue <b>(for bus operations only)</b>	1.96	1.96	2.00	2.13	2.54
3.	Total Expenditure	15.28	15.94	16.30	16.00	19.09
4.	Loss for the year	5.35	4.36	1.44	0.38	1.38
5.	Fixed Costs:					
	(i) Personnel Costs	9.55	10.86	10.58	11.51	12.67
	(ii) Other Fixed Costs	0.65	0.51	1.54	0.74	0.76
	Total Fixed Costs	10.20	11.37	12.12	12.25	13.43
6.	Variable Costs:					
	(i) Fuel & Lubricants	3.80	3.40	3.04	2.63	3.50
	(ii) Tyres & Tubes	0.26	0.10	0.10	0.09	0.16
	(iii) General items	0.67	0.76	0.52	0.60	0.58
	(iv) Taxes	0.28	0.27	0.42	0.41	0.43
	(v) Other costs	0.07	0.04	0.10	0.02	0.99
	Total Variable Costs	5.08	4.57	4.18	3.75	5.66
7.	Effective KM operated (in lakh) <b>(for bus operations only)</b>	20.66	20.61	16.55	16.31	16.35
8.	Traffic Revenue per KM (in Rs.) (2/7)	9.49	9.51	12.08	13.06	15.54

### Elements of Cost

**1.3.5.2** Personnel costs and fuel costs constitute the major elements of costs. The percentage break-up of costs for 2008-09 is given below in the pie-chart.

<sup>35</sup> Total revenue includes traffic revenue, miscellaneous revenue and net revenue from Fuel business and hired fleet of trucks.

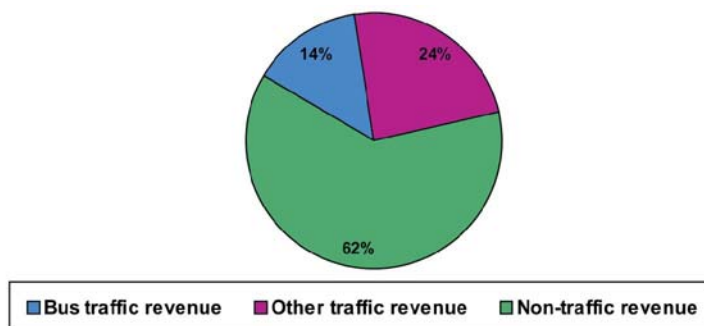
**Chart – 1.3.1**  
**Components of various elements of cost**



### *Elements of revenue*

**1.3.5.3** Non traffic revenue (supervision charges levied by the SNT on private truck operators) constituted the major element of revenue. Besides bus operations, traffic revenue consists of revenue from operations of trucks & tankers. The percentage break-up of revenue for 2008-09 is given below in the pie-chart.

**Chart – 1.3.2**  
**Components of various elements of Revenue**



## **Audit Findings**

**1.3.6.1** Audit explained the audit objectives to the SNT during an 'entry conference' held on 16 April 2009. Subsequently, audit findings were reported to the SNT in July 2009 and discussed in an 'exit conference' held on 3 August 2009, which was attended by Secretary, Transport Department, Government of Sikkim, Additional Secretaries and General Manager. The replies to the audit findings were received in September 2009. The views expressed by the SNT have been considered while finalising the review. The audit findings are discussed below.



### Operational Performance

**1.3.7.1** The operational performance of the SNT for the five years ending 31 March 2009 is given in the Appendix–1.1. The operational performance of the SNT was evaluated on various operational parameters as described below. It was also seen whether the SNT was able to maintain pace with the growing demand of public transport and recover the cost of operations. Audit findings in this regard are discussed in the subsequent paragraphs. These audit findings show that the losses were controllable and there is scope for improvement in performance.

### Share of the SNT in public transport

**1.3.8.1** The SNT enjoys the monopoly in operation of buses in the State of Sikkim. After the extension of the Central Motor Vehicle Act, 1988 (MVA) to Sikkim which permitted private taxis to operate, the share of the SNT got reduced in the overall public transport services.

**1.3.8.2** During the period 2004-05 to 2007-08, while 1,794 private taxis were registered, the SNT registered only 13 new buses during the same period. This indicated that the SNT failed to cater the growing demand of public transport. The effective per Capita KM operated per year is given in table below.

**Table – 1.3.2**

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Effective KM operated (lakh)	20.66	20.61	16.55	16.31	16.35
Estimated Population (lakh) <sup>36</sup>	6.09	6.27	6.46	6.65	6.85
Per Capita KM per year	3.39	3.29	2.56	2.45	2.39

**1.3.8.3** The table above shows that there is a continuous decline in passenger transportation services by the SNT. In absence of the data relating to total carriage of traffic in the State, trend analysis of SNT's share in passenger traffic could not be carried out in Audit. However, test check in Audit of 11<sup>37</sup> routes operated from Gangtok during 2008-09, revealed that SNT carried 980 passengers per day against 4,280 passengers per day by the private operators, which is only 23 *per cent* of the total passengers carried on these routes per day.

<sup>36</sup> Population figure as per 2001 census after considering 3 per cent growth rate.

<sup>37</sup> Gangtok-Siliguri, Gangtok-Kalimpong, Gangtok-Padamchey/Pakyong, Gangtok-Dikchu, Gangtok-Tumim, Gangtok-Lingdok, Gangtok-Rumtek, Gangtok-Rhenok/Rongli, Gangtok-Sang, Gangtok-Jorethang and Gangtok-Namchi.

**1.3.8.4** The table below depicts the growth of public transport in the State.

**Table – 1.3.3**

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1.	Number of buses	86	85	84	86	96
2.	Estimated population (in lakh)	6.09	6.27	6.46	6.65	6.85
3.	Vehicle density per one lakh population	14	14	13	13	14

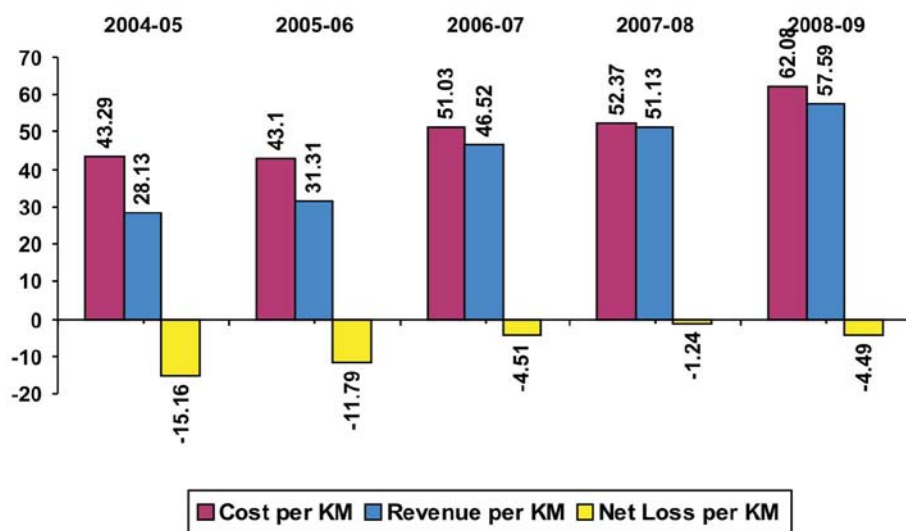
**1.3.8.5** Public transport has definite benefits over personalised transport in terms of costs, congestion on roads and environmental impact. The public transport services have to be adequate to derive those benefits. In the instant case, the SNT was not able to maintain its share in transport mainly due to operational inefficiencies as described in the succeeding paragraphs.

**1.3.8.6** The SNT while accepting (September 2009) the facts stated that the services of the private taxis are preferred by the commuters as it is economical and consumes less time, which led to reduction in its share.

### Recovery of cost of operation

**1.3.9.1** Considering the overall operations of the SNT, the cost per KM, the revenue per KM, net loss per KM for the five years ending 2008-09 is depicted in the graph<sup>38</sup> below.

**Chart – 1.3.3**



<sup>38</sup> **Cost per KM** represents total expenditure divided by total effective KM operated by bus, trucks and tankers. **Revenue per KM** is arrived at by dividing total revenue with total effective KM operated by bus, trucks and tankers. **Net Loss per KM** is cost per KM minus revenue per KM.

**1.3.9.2**

Above graph indicates that the SNT was able to improve its performance from 2004-05 to 2007-08

Orissa, Uttar Pradesh and Karnataka registered best net earnings per KM at Rs. 0.49, Rs. 0.47 and Rs. 0.34 respectively during 2006-07.

(Source : STUs profile and performance 2006-07 by CIRT, Pune)

The SNT was not able to recover its cost of operations during 2004-09.

thereby reducing its overall net loss per KM from Rs. 15.16 to Rs. 1.24. However, the net loss per KM again increased to Rs. 4.49 in 2008-09. This was due to payment of Rs. 1.39 crore in 2008-09 as interim relief on revision of

pay. It may be seen that the net loss per KM of the SNT remained higher than the best performing STUs. Though the best performer relates only to bus operations, there is scope of improvement in the SNT in this regard.

**1.3.9.3**

The SNT stated (September 2009) that the overage fleet and hilly terrain was responsible for the high cost. The fact, however, remains that the SNT was not able to recover its cost of operations.

### Efficiency and Economy in operations

#### Fleet strength and utilisation

##### *Fleet Strength and its Age Profile*

**1.3.10.1**

The SNT has its own fleet of vehicles (Buses, Trucks and Tankers). It does not hire any buses, however, trucks and tankers are hired by the SNT for goods transportation.

**1.3.10.2**

The Association of State Road Transport Undertakings (ASRTU) had prescribed (September 1997) the desirable age of a bus as eight years or five lakh KMs, whichever was earlier. As per Sikkim Financial Rules, 1979, the SNT had prescribed the norms of 10 years or 2.5 lakh KM, whichever was earlier for the overage buses. The table below shows the details of the buses held by the SNT for the period of five years ending 2008-09.

**Table – 1.3.4**

Sl.No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1.	Total number of buses at the beginning of the year	100	86	85	84	86
2.	Additions during the year	Nil	1	Nil	12	14
3.	Buses scrapped during the year	14	2	1	10	4
4.	Buses held at the end of the year (1+2-3)	86	85	84	86	96
5.	Of (4), number of buses more than 10 years old	40	50	49	40	31
6.	Percentage of over-age buses to total buses (Based on the SNT norms)	46.51	58.82	58.33	46.51	32.29

The SNT had 32.29 per cent overage buses as on 31 March 2009.

**1.3.10.3** The above table shows that the SNT was not able to achieve the norm of right age buses. During 2004-09, the SNT added 27 new buses at a cost of Rs. 2.98 crore. The expenditure was funded through the budgetary support of the State Government. To achieve the norm of right age buses, the SNT was required to buy 31 new buses additionally which would have cost it Rs. 3.42 crore approximately based on the average cost of buses purchased during 2004-09. The State Government, however, did not allocate adequate fund for the SNT to replace its overage vehicles. Thus, the SNT's ability to survive and grow depends on its efforts to remove operational inefficiencies, cut costs and tap non-conventional revenue avenues so that it can assist the State Government in funding its capital expenditure.

**1.3.10.4** The overage fleet requires high maintenance and results in extra cost and less availability of vehicles compared to right age fleet, other things being equal. This only goes on to increase operational inefficiency and causes losses, which in turn affects the ability of the SNT to replace its fleet on a timely basis.

**1.3.10.5** The SNT stated (September 2009) that the fleet is being augmented every year depending on the availability of the budget provisions.

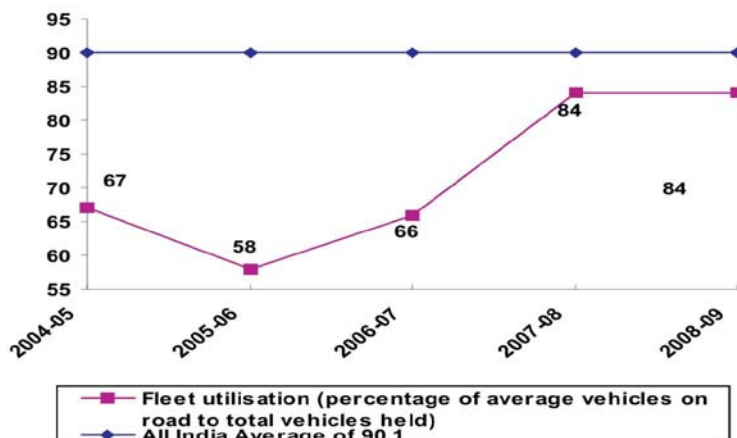
### Fleet Utilisation

**1.3.10.6** Fleet utilisation represents the ratio of buses on road to those held by the SNT. The SNT did not set any target of fleet utilisation during the period from 2004-05 to 2008-09. The fleet utilisation of the SNT varied from 58 per cent to 84 per cent during the period 2004-09 as compared to the AIA of 90 per cent, as indicated in the graph given below.

Andhra Pradesh, Tamil Nadu (Kumbakonam) and Tamil Nadu (Coimbatore) registered best fleet utilisation at 99.4, 98.4 and 98.3 per cent respectively during 2006-07.

(Source: STUs profile and performance 2006-07 by CIRT, Pune)

Chart – 1.3.4



**1.3.10.7** The above graph shows that though in the later years (2007-08 and 2008-09) the percentage of fleet utilisation had improved but it was below the norms recommended by ASRTU (92 *per cent*) and the AIA (90 *per cent*). The increase in 2007-08 and 2008-09 was due to induction of new buses during these years. The reasons for poor fleet utilisation were not analysed by the SNT.

**1.3.10.8** Analysis in Audit revealed that the main reason for low fleet utilisation was abnormal delay in repairs of buses. Test check in Audit of 85 numbers of bus repairs at the Central Workshop during the period 2004-09 revealed that there were delay in repairs and renovation works resulting in loss of 6,387 bus-days with consequent loss of potential traffic revenue of Rs. 46.48 lakh as given in table below.

**Table – 1.3.5**

Sl.No.	Type of job	Norms of repair (in days)	Range of period of repairs	Bus-days lost
1.	Renovation of Body	12	23 to 347	1,057
2.	Repair of Brake	02	10 to 90	96
3.	Engine Overhaul	20	02 to 315	4,679
4.	Minor repairs	02	17 to 75	146
5.	Other repairs	05	19 to 125	409
<b>Total Bus-days lost</b>				<b>6,387</b>

**1.3.10.9** From the above table, it may be seen that there were considerable delays in engine overhaul followed by renovation of bus bodies. Since the SNT was not able to achieve an optimum utilisation of its fleet strength, this in turn impacted its operational performance adversely.

**1.3.10.10** The SNT while accepting the facts (September 2009) stated that low fleet utilisation was due to the overage vehicles which require frequent maintenance. Moreover, due to shortage of fit drivers, sometimes roadworthy vehicles are being stranded. It was also stated that the SNT was considering retiring sick and incapable drivers.

### **Vehicle productivity**

**1.3.11.1** Vehicle productivity refers to the average KM run by each bus per day in a year. The vehicle productivity of the SNT vis-a-vis the overage fleet for the five years ending 31 March 2009 is shown in table below.

Table – 1.3.6

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1.	Vehicle productivity (KM run per day per bus held)	64	66	57	59	58
2.	Overage fleet (percentage)	46.51	58.82	58.33	46.51	32.29

The vehicle productivity of the SNT reduced from 64 to 58 KM per day per bus during 2004-09.

**1.3.11.2** From the above, it may be seen that the vehicle productivity reduced from 66 in 2005-06 to 58 in 2008-09 though the overage fleet of the SNT had reduced during the corresponding period.

**1.3.11.3** Compared to the AIA of 196 KMs per day for hilly areas, the vehicle productivity of the SNT had been on the lower side for all the years under review. The SNT even failed to achieve the target (75 KM per day) fixed by it. The reasons for low vehicle productivity were not on record. Despite continued low productivity, the SNT did not take any effective steps to increase the same.

Tamil Nadu (Villupuram), Tamil Nadu (Salem) and Tamil Nadu (Kumbakonam) registered best vehicle productivity at 474, 469 and 462.8 KMs per day respectively during 2006-07. (Source : STUs profile and performance 2006-07 by CIRT, Pune)

**1.3.11.4** The SNT while accepting (September 2009) the audit observation stated that it was due to the fact that the average time taken to cover most of the routes was four to five hours because of adverse terrain and unfavourable gradient of the hilly roads. Besides, shortage of drivers and frequent bandhs also contributed to low vehicle productivity. However, the SNT failed to achieve even the norms of 75 KM per day fixed by it after taking into consideration all these factors.

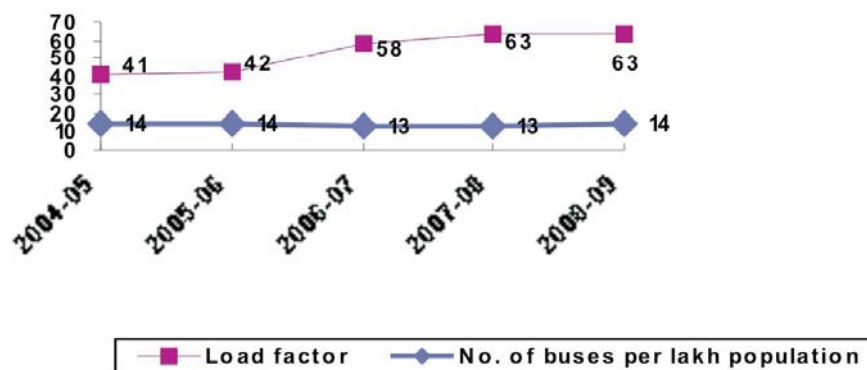
### Capacity Utilisation

#### Load Factor

**1.3.12.1** Capacity utilisation of a transport undertaking is measured in terms of Load Factor, which represents the percentage of passengers carried to the seating capacity. The schedules to be operated are to be decided after proper study of routes and periodical reviews are necessary to improve the load factor. The load factor of the SNT increased from 41 *per cent* in 2004-05 to 63 *per cent* in 2008-09 thereby achieving the AIA of 63 *per cent*. The improvement in load factor was attributable to induction of new fleet. A graph depicting the load factor vis-a-vis number of buses per one lakh population is given in chart below.



Chart – 1.3.5



### Route planning

**1.3.12.2** The routes are required to be operated on the basis of proper survey as regards to its potential occupancy and viability. Operational performance can be improved by periodic review of uneconomic routes with a view to assess their continuance, rationalisation of routes and optimum operation of buses on the higher revenue earning routes. The SNT, however, neither made prior survey nor periodical review of routes. Although the SNT maintains records of route-wise earnings and expenditure, it failed to review them in a periodical manner so as to take remedial measures for sustainability.

**1.3.12.3** Among the test checked depots in Audit, no route commenced from the Rangpo depot. The routes operated from Jorethang and Gangtok depots revealed that none of the routes operated during 2004-09 could recover their total cost. Audit further observed that the SNT operates several schedules for various en-route stations on a particular route on which single schedule could have catered to the general public.

**1.3.12.4** Though some of the routes may appear unprofitable now, these may become profitable once the SNT improves its efficiency. However, there may still be some uneconomical routes. Given the social obligation to serve uneconomical routes, the SNT should decide an optimum quantum of services on different routes so as to optimize its revenue while serving the cause. However, no such exercise was carried out by the SNT.

**1.3.12.5** The SNT stated (September 2009) that road survey is carried out and volume of traffic revenue assessed before introduction of services on public demand. However, no records for the same were furnished to Audit to substantiate the reply.

## Maintenance of vehicles

### Preventive Maintenance

**1.3.13.1** Preventive maintenance is essential to keep the vehicles in good running condition and to reduce breakdowns/ other mechanical failures. The Original Equipment Manufacturer (OEM), viz., TATA recommended the following preventive maintenance schedule:

**Table – 1.3.7**

Sl.No.	Particulars	Schedule
1.	After every 9,000 KM	Brake and steering
2.	After every 18,000 KM	Engine Oil change, Body mounting and other schedule preventive maintenance

**1.3.13.2** Audit observed that the required preventive maintenance schedules were not being adhered to. Test check of history sheets of 54 buses at the Central Workshop revealed that out of 145 numbers of servicing required, in 96 cases (66 *per cent*) the preventive maintenance was carried out after 18,000 KM (after allowing a grace of 500 KM) during the last five years ending 31 March 2009 as detailed in table below.

**Table – 1.3.8**

Sl.No.	Range of KM	Number of servicing
1.	Upto 18,500	49
2.	18,501 to 25,000	66
3.	25,001 to 30,000	14
4.	30,001 and above	06
5.	Mile meter not working	10
	<b>Total</b>	<b>145</b>

**1.3.13.3** Audit noticed that high percentage of non-adherence of preventive maintenance schedule was due to the fact that the buses were brought for maintenance to the Central Workshop only when any defect was observed by the driver.

**1.3.13.4** The SNT stated (September 2009) that the vehicles cannot report for servicing on the exact time as they happen to be en-route and lubricants are sometimes changed before the scheduled maintenance. The contention is not correct, as the Audit had considered the servicing schedule after providing a grace of 500 KM and also change of lubricants is not the only criteria of scheduled maintenance.

### Repairs & Maintenance

**1.3.13.5** A summarized position of fleet holding, overage vehicles and repairs & maintenance (R&M) expenditure for the last five years up to 2008-09 is given in

the table below.

**Table – 1.3.9**

Sl.No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1.	Total vehicles at the end of the year (Nos.):					
	Buses	86	85	84	86	96
	Trucks/Tankers	80	90	90	85	85
	<b>Total</b>	<b>166</b>	<b>175</b>	<b>174</b>	<b>171</b>	<b>181</b>
2.	Over-age vehicles ( <i>more than 10 years old</i> ):					
	Buses	40(46.51)	50(58.82)	49(58.33)	40(46.51)	31(32.29)
	Trucks/Tankers	58(72.50)	60(66.67)	62(68.89)	52(61.18)	35(41.18)
	<b>Total</b>	<b>98</b>	<b>110</b>	<b>111</b>	<b>92</b>	<b>66</b>
3.	R&M Expenses (Rs. In crore)	1.00	0.90	0.81	0.71	NA
4.	R&M Expenses per vehicle (in Rs.) (3 ÷ 1)	60,241	51,429	46,552	41,520	-

(Figures in bracket indicate percentage).

**1.3.13.6** It can be seen from the above table that the SNT was able to reduce the R&M expenditure from Rs. 60,241 per vehicle in 2004-05 to Rs. 41,520 per vehicle in 2008-09. This was due to induction of new vehicles thereby reducing the percentage of overage vehicles. However, the SNT did not maintain bus-wise R&M expenditure data. So, Audit could not analysis the trend of expenditure on R&M of buses.

### Manpower Cost

**1.3.14.1** The cost structure of the SNT shows that manpower and fuel & lubricants constitute 84.70 *per cent* of total cost. Thus, the major cost saving can come only from manpower and fuel & lubricants.

**1.3.14.2** Manpower is an important element of cost which constituted 66.36 *per cent* of total expenditure of the SNT in 2008-09. Therefore, it is imperative that

Gujarat, Tamil Nadu (Villupuram) and Tamil Nadu (Salem) registered best performance at Rs. 6.10, Rs. 6.13 and Rs. 6.21 cost *per effective* KMs respectively during 2006-07. (Source: STUS profile and performance 2006-07 by CIRT, Pune)

this cost is kept under control and the manpower is utilised optimally to achieve high productivity. The SNT does not maintain separate records of manpower associated exclusively with

the bus fleet. The table below provides the details of manpower (associated with the bus, trucks and tanker fleet collectively), its cost and manpower per vehicle during the five year ended 2008-09:

**Table – 1.3.10**

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1.	Total Manpower (Nos.)	983	934	885	843	836
2.	Manpower Cost (Rs. In crore)	9.55	10.86	10.58	11.51	12.67
3.	Total vehicles at the end of the year (No.)	166	175	174	171	181
4.	Manpower per vehicle	5.92	5.34	5.09	4.93	4.62

It can be seen from the above table that:

- The manpower of the SNT showed a declining trend and reduced from 5.92 to 4.62 per vehicle (including buses, trucks and tankers) during the review period. It remained even below the AIA which stood at 6.50 in respect of buses.
- The Transport Department granted voluntary retirement during March 2003 to July 2006 to 16 employees under different categories like drivers, store-keepers, conductors, fitters, etc. Despite directions (February 2001) from the State Home Department banning fresh employment on Muster Roll (MR), the Transport Department appointed 38 persons on MR during February 2004 to May 2007. The SNT incurred an avoidable expenditure of Rs. 42.24 lakh towards pay and allowances on these fresh appointments. The induction of new MR employees had also defeated the very purpose of reduction of employee cost by introduction of VRS scheme by the State Government.

### Fuel Cost

**1.3.15.1** Fuel & lubricants are major cost elements which constituted 18.33 *per cent* of total expenditure in 2008-09. Control of fuel costs by a road transport undertaking has a direct bearing on its productivity. The SNT did not maintain separate records of fuel consumption in respect of bus operations. However, based on the available information, the analysis in Audit of Gangtok and Jorethang depots revealed the following:

**Table – 1.3.11**

Sl. No.	Particulars	2005-06	2006-07	2007-08	2008-09
1.	Effective KMs operated (in lakh)	13.68	12.55	11.30	7.36
2.	Actual Consumption (in lakh litres)	4.23	4.01	3.33	2.28
3.	Actual KMPL (1/2)	3.23	3.13	3.39	3.23
4.	Target of KMPL fixed by SNT	3.00	3.00	3.00	3.00
5.	All India Average KMPL	3.69	3.69	3.69	3.69
6.	Consumption as per All India Average (in lakh litres) (1/5)	3.71	3.40	3.06	1.99
7.	Excess Consumption (in lakh litres) (2-6)	0.52	0.61	0.27	0.29
8.	Average cost per litre (in Rs.)	29.93	33.94	33.70	33.94
9.	Extra expenditure (Rs. In lakh) (7x8)	15.56	20.70	9.10	9.84

The SNT incurred extra expenditure of Rs. 55.20 lakh during 2005-09 due to excess consumption of fuel as compared to the AIA.

### 1.3.15.2

It can be seen from the above table that the SNT was able to achieve the internal targets of 3.00 KM per litre.

North-East Karnataka State Road Transport, Uttar Pradesh and Andhra Pradesh registered mileage of 5.45, 5.33 and 5.26 KMPL.

(Source: STUs profile and performance 2006-07 by CIRT, Pune)

However, the target fixed by the SNT was lower than the AIA of 3.69 KM per litre for hilly areas. The SNT consumed 1.69 lakh litres of fuel in excess as compared to AIA during 2005-09

resulting in extra expenditure of Rs. 55.20 lakh. Despite huge fuel cost, the SNT neither weighed the options of procuring fuel efficient engines while purchasing new buses nor considered getting the fabrication of light weight bodies. An analysis in Audit of the fleet position revealed that due to holding of excessive overage vehicles ranging from 32.29 *per cent* to 58.82 *per cent*, increase in traffic congestion and non-adherence of preventive maintenance schedule, the fuel consumption was on the higher side.

### 1.3.15.3

The SNT stated (September 2009) that due to typical topography and road gradients of the Sikkim State, the comparison with the AIA is not justified. However, it may be mentioned here that AIA referred here is for hilly areas only.

## Body Building

### 1.3.16.1

The SNT got 21 buses fabricated during 2005-09 through outsourcing. The SNT had set a norm of 60 days for bus body fabrication. The table below shows the delay in receipt of buses from fabricators beyond 60 days and potential loss of traffic revenue on that account.

**Table – 1.3.12**

Sl. No.	Particulars	2005-06	2006-07	2007-08	2008-09
1.	No. of Buses fabricated	01	02	06	12
2.	No. of buses received late from fabricators	Nil	02	02	09
3.	Total delay in days	Nil	120	190	111
4.	Average delay per bus (in days) (3/2)	Nil	60	95	12
5.	Average KM covered per bus per day	66	57	59	58
6.	Average KM lost due to delay (3 X 5)	Nil	6,840	11,210	6,438
7.	Traffic revenue per KM (in Rs.)	9.51	12.08	13.06	15.54
8.	Revenue lost due to delay in fabrication (Rs. in lakh) (6 X 7)	Nil	0.83	1.46	1.00

### 1.3.16.2

The above table shows that there had been delay of 12 to 95 days in fabrication of buses. However, the SNT awarded fabrication work to the same fabricators in subsequent years ignoring their dismal past performance. Due to delay in fabrication, the SNT lost 24,488 KMs of operation during 2006-09, which consequently resulted in loss of traffic revenue of Rs. 3.29 lakh.

### Realignment of business model

**1.3.17.1** The SNT is mandated to provide an efficient, adequate and economical road transport to public. Therefore, the SNT cannot take an absolutely commercial view in running its operations. It has to cater to uneconomical routes to fulfill its mandate. It also has to keep the fares affordable. In such a situation, it is imperative for the SNT to tap non-traffic revenue sources to cross-subsidize its operations. Although the share of non-traffic revenues was at 58 *per cent* of total revenue during 2004-09, the major share of this consists of supervision charges levied by the SNT on private truck operators. Audit observed that the SNT has other non-traffic revenue sources also which it has not tapped substantially.

**1.3.17.2** Over a period of time, the SNT has come to acquire sites at prime locations in cities and district headquarters. The SNT generally uses the land area for its operations, leaving an ample scope to construct and utilise the vacant spaces. Audit observed that the SNT has land at important locations admeasuring 13,194 square meters as shown below.

**Table – 1.3.13**

Particulars	Cities (Municipal areas)	District HQrs.	Total
Number of sites	09	04	13
Occupied Land (Sq. metres)	12,790	404	13,194

**1.3.17.3** It is, thus, possible for the SNT to undertake projects on public private partnership (PPP) basis for construction of shopping complexes, malls, hotels, office spaces, etc., in the existing vacant sites so as to bring in a steady stream of revenue without any investment by it. Such projects can be executed without curtailing the existing area of operations of the SNT. Such projects can yield substantial revenue for the SNT.

**1.3.17.4** The SNT had not explored the possibility of utilising the exteriors and interiors of the buses and exteriors of its' premises for advertisements and hoardings to earn revenue.

**1.3.17.5** Audit observed that the SNT has not framed any policy as regards re-alignment of its' business model. Since non-traffic revenue will help the SNT cross-subsidize its operations and fulfill its mandate effectively, it may like to study realigning its business model and frame a policy in this regard.



### Fare policy and fulfillment of social obligation

#### Existence and fairness of fare policy

**1.3.18.1** Section 67 of the Motor Vehicle Act, 1988, empowers the State Government to fix the fares. The SNT fix the fares and get it approved by the State Government. The SNT revises the fare to compensate the increase in the cost of inputs. Thus, it was imperative on its part to increase its fare as and when there is an increase in the cost of fuel. The fare structure of the SNT effective during the review period is as under:

**Table – 1.3.14**  
**Fare table for ordinary buses**

(in paise)

Stages	2004-05 (Since February 2000)	2005-06	2006-07	2007-08	2008-09 (w.e.f 01 April 08)
First 25 KMs	67	67	67	67	120
26 KMs to 50 KMs	67	67	67	67	100
51 KMs to 75 KMs	67	67	67	67	90
76 KMs to 100 KMs	67	67	67	67	85
101 KMs and above	62	62	62	62	75

**1.3.18.2** It was noticed in Audit that the SNT revised the freight on goods with every increase in cost of fuel but the fare for passenger which was effective since 2000 was revised only once, i.e., effective from April 2008 during the period under review when the cost of fuel per litre increased from Rs. 15 (February 2000) to Rs. 34.25 (April 2008) (128 *per cent*). However, the increase in other allied expenditure such as maintenance cost, cost of lubricants, operations, salaries, spare parts, etc., was not considered while revising the fare. Thus, the fare policy of the SNT was not based on scientific basis as it does not take into account the normative cost.

**1.3.18.3** The SNT accepted (September 2009) the facts and stated that though the proposal for enhancement of fare was initiated as and when there was increase in the fuel cost but this could not be implemented due to stiff competition from the private taxi operators.

#### Adequacy of services on uneconomical routes

**1.3.19.1** The SNT had no profit making routes as of March 2009 among the routes test checked in Audit as mentioned in paragraph 12.3. The position may, however, change if the SNT improves its efficiency. Nonetheless, there may still be some routes which would be uneconomical. Though the SNT is required to cater to these routes, the SNT has not formulated norms for providing services on them. In the absence of norms, the adequacy of services on uneconomical routes could not be

ascertained in Audit.

### Monitoring by top management

**1.3.20.1** For an organisation like a Road Transport to succeed in operating economically, efficiently and effectively, there has to be written norms of operations, service standards and targets. Further, there has to be a Management Information System (MIS) to report on achievement of targets and norms. The achievements need to be reviewed to address deficiencies and also to set targets for subsequent years. The targets should generally be such that their achievement would make an organisation self-reliant. In the light of this, Audit reviewed the system existing in the SNT.

The SNT did not set any targets for important operational parameters.

**1.3.20.2** The SNT had not set targets in general as well as at depot level for important operational parameters like fleet utilisation, vehicle productivity, capacity utilisation, revenue realisation (route-wise). As a result, depot managers could not be made accountable for their performance.

**1.3.20.3** The SNT has an MIS in place, whereby information on various operational activities is communicated to the SNT's headquarters on daily / monthly basis. Audit observed that the information received at the headquarters was not consolidated, so as to identify areas for taking corrective measures. As a result, the SNT could not exercise control over these aspects.

**1.3.20.4** The top management of the SNT is expected to demonstrate managerial capability to set realistic and progressive targets, address areas of weakness and take remedial action wherever the things are not moving on expected lines. However, such ability was not seen either from records or performance of the SNT during period under review.

### Conclusion

#### *Operational performance*

- The SNT could not keep pace with the growing demand for public transport as the per Capita KM per year operated by the SNT declined from 3.39 in 2004-05 to 2.39 in 2008-09.
- In absence of separate records for the various components of costs relating to bus operations, Audit could not analyse the recovery of the same with reference to traffic revenue from the bus operations.
- The SNT was not running its operations efficiently as its performance on important operational parameters like vehicle productivity and fuel consumption was below AIA.

- The SNT did not carry out the preventive maintenance as required in 66 per cent cases among the test checked records, affecting the roadworthiness of its vehicles.
- The SNT did not ensure economy in operations as its fuel cost was higher than the AIA.

#### *Financial management*

- The SNT has potential to tap non-conventional sources of revenue but it did not have a policy in place to undertake large scale tapping of such funds.

#### *Fare policy and fulfillment of social obligations*

- Though the SNT has a fare policy, it is not on scientific basis. Further, it is not implemented consistently.
- In absence of any policy yardstick for operation on uneconomical routes, the adequacy of its operations could not be ascertained in Audit.

#### *Monitoring by top management*

- The MIS system of SNT was not adequate and the monitoring by its top management of key operational parameters and service standards was largely ineffective.

### **Recommendations**

#### *Operational performance*

- The SNT may take effective steps to improve fleet utilisation, vehicle productivity and load factor to earn more revenue.
- The SNT may ensure adherence to the preventive maintenance schedule so as to increase the efficiency on that account.
- The SNT may maintain separate records for various components of costs relating to bus operations for control purposes.

#### *Financial management*

- The SNT may consider to devise a policy for large scale tapping of non-conventional sources of revenue.

#### *Fare policy and fulfillment of social obligations*

- The State Government may consider creating an independent regulator to regulate fares, services on uneconomical routes and address

**grievances of commuters.**

***Monitoring by top management***

- **The SNT may create separate cost centres for buses, trucks and tankers for effectively monitoring their performance.**

**The SNT may make an effective use of the MIS system in existence to exercise adequate management control over various operational areas.**