Chapter-II

Section-2A

2A Haryana Vidyut Prasaran Nigam Limited

Power Sector Reforms and Restructuring in erstwhile Haryana State Electricity Board

Highlights

The Haryana State Electricity Board (HSEB) was reorganised in August 1998 by transferring functions of generation, transmission and distribution to separate companies with the main objective of restoring financial viability of power utilities so that the State Government is relieved of the burden of providing subsidies.

(Paragraphs 2A.1 and 2A.2)

Two distribution companies planned to be divested by December 1998 and March 2001 have not been divested so far.

(Paragraph 2A.6.2)

Fixed assets of transmission and distribution system of erstwhile HSEB were transferred to Haryana Vidyut Prasaran Nigam Limited (HVPNL) at Rs 2255.34 crore, as compared to its estimated value of Rs 3293.24 crore, which resulted in under valuation of fixed assets by Rs 1037.90 crore.

(Paragraph 2A.6.3.1)

The HVPNL suffered loss of Rs 329.10 crore due to short recovery of depreciation charges and return on capital base on account of under valuation of fixed assets during 2000-01 (Rs 242.97 crore) and transfer of shared generating assets to transmission company instead of to generating company during 1999-2000 and 2000-01 (Rs 86.13 crore).

(Paragraphs 2A.6.3.1 and 2A.6.3.2)

The Company lost revenue of Rs 614.95 crore due to delay/non-revision of tariff during 1998-99 to 2000-01 (Rs 397.17 crore), non-recovery of fuel surcharge adjustment during August 1998 to March 1999 (Rs 178.53 crore) and incorrect computation of return on capital base for 2000-01 (Rs 39.25 crore).

(Paragraphs 2A.8.1, 2A.8.1.1, 2A.8.2,2A. 8.3, 2A.8.4)

Against the investment plan of Rs 1783.50 crore, during 1997-98 to 1999-2000 for development of generation, transmission and distribution system, an amount of Rs 900.70 crore was spent. The shortfall of Rs 882.80 crore was attributed to shortage of funds.

(Paragraph 2A. 9)

The World Bank committed to provide a loan of US $ 410 million for reform and development programme during 1997-98 to 2000-01 and sanctioned loan of US $ 60 million during January 1998. The HVPNL could utilise only US $ 52.37 million (Rs 227.88 crore) up to April 2001. The World Bank did not sanction balance loan of US $ 350 million as the HVPNL did not increase the tariff as per its stipulation and privatise distribution companies. As such, the HVPNL had not been able to implement reform and development programme.

(Paragraph 2A.9.1)

Despite reforms, T&D losses during 1999-2000 worked out to 36.56 *per cent* as against the target of 31 *per cent*. The Haryana Electricity Regulatory Commission allowed the T&D losses of 29.75 *per cent* only leaving a gap of Rs 250.99 crore on account of excessive losses.

(Paragraph 2A.11.2)

HVPNL could not generate revenue to cover operating cost during 1998-99 and earn rate of return at 10 *per cent* on net worth during 1999-2000 and suffered commercial losses (excluding subsidy from State Government) of Rs 300.65 crore and Rs 858.06 crore during 14 August 1998 to March 1999 and 1999-2000 respectively.

(Paragraph 2A.11.6)

Due to non-classification of receivables into good, bad and doubtful debts by HVPNL, HERC disallowed claim for additional provision of Rs 19.36 crore for bad debts in ARR for 2000-01.

(Paragraph 2A.11.8)

2A.1 Introduction

The erstwhile Haryana State Electricity Board (Board) was constituted on 3 May 1967 under Section 5(1) of the Electricity (Supply) Act, 1948. The erstwhile Board was responsible for generation, transmission and distribution of power in the State. The erstwhile Board had been incurring losses since 1986-87 and the accumulated losses went up to Rs 1358.67 crore as on 31 March 1993. Section 59 of the Electricity Act 1948, stipulated a minimum rate of return (ROR) of 3 *per cent* on the capital base. Against this, the actual ROR (excluding subsidy from State Government) was negative. The main reasons for losses were unremunerative tariff, supply of power to agriculture at subsidised rates, low plant load factor in its thermal power stations, excessive transmission and distribution losses etc. Continued negative ROR besides adversely affecting the ways and means position of the erstwhile Board, also jeopardised the developmental activities of the Board. In spite of power shortage to the extent of 25 *per cent*, the State could not add much to its generating capacity which remained at 863 MW during 1990-91 to 1999-2000 and increased to 1073 MW in 2000-01 with the synchronization of Unit VI of Panipat Thermal Power Station in March 2001.

To overcome the bottlenecks, the State Government decided (1993) to restructure the Board and appointed consultants for Power Sector Restructuring Project Study. On the basis of consultants' Reports (July 1995), the erstwhile Board was finally restructured on 14 August 1998 by transferring generation function to Haryana Power Generation Corporation Limited (HPGCL) and transmission and distribution functions to Haryana Vidyut Prasaran Nigam Limited (HVPNL). The distribution function was later on transferred to Uttar Haryana Bijli Vitran Nigam Limited (UHBVNL) and Dakshin Haryana Bijli Vitran Nigam Limited (DHBVNL). The transmission function was retained by HVPNL. The accumulated losses of the erstwhile Board as on date of restructuring were Rs 1879.45 crore against an equity capital of Rs 1500 crore.

2A.2 Objectives of reforms and restructuring

Reform and restructuring programme aimed at restoring financial viability of power utilities and relieving the State Government of the burden of providing subsidies

The goal of power sector reforms in the State was to restore and ensure the sustainable creditworthiness of the power industry and to create an environment which would attract investments needed to meet the growing power demand, promote competition, efficiency and economy, and facilitate development of power sector. The restructuring programme aimed at restoring financial viability of power utilities so that the State Government is relieved of the burden of providing subsidies to cover their losses and to make the power sector a generator of net resources for the State and capable of arranging its investment requirements on its own strength.

2A.3 Organisational set-up

Reform and Restructuring Division of the erstwhile Board headed by a Chief Engineer was set up in April 1998 and was responsible for preparing and coordinating the implementation of reform measures and the investment programme. The division is now under HVPNL. Programme Implementation Committee headed by Secretary, Department of Power of the State Government and comprising Chairpersons of generation, transmission and distribution companies was responsible for monitoring the reforms and restructuring programme.

2A.4 Scope of Audit

The present review conducted during November 2000 to March 2001 covers matters relating to formulation of reform and restructuring programme and its implementation as a result of test check of records of erstwhile Board and new entities (HPGCL, HVPNL, UHBVNL and DHBVNL) up to the financial year 2000-01.

2A.5 Reform and restructuring programme

Consultants appointed (1993) by the State Government for Power Sector Restructuring Project Study and for Power Sector Development and Investment Planning Study submitted (July 1995) their reports on the basis of which the State Government declared (January 1996) its restructuring policy. The main components of the reform programme as outlined in the policy statement are:

(i) creation of an independent power regulatory body;

(ii) segregation of power generation, transmission and distribution functions to be discharged by different companies;

(iii) private sector participation in power generation, transmission and distribution;

(iv) financial restructuring and tariff rationalization; and

(v) reduction in transmission and distribution losses.

The erstwhile Board approved (November 1997) power sector reform investment programme for Rs 8023 crore over the next 10 years from 1997-98 onwards.

2A.6 Implementation of reforms programme

2A.6.1 Creation of Power Regulatory Commission

Haryana State Electricity Reform Act, 1997 notified by the State Government on 10 March 1998 and made effective from 14 August 1998, *inter alia*, provided for constitution of an Electricity Regulatory Commission. Accordingly, the Haryana Electricity Regulatory Commission (HERC) was constituted in August 1998. The main functions of the HERC are as under:

(i) To regulate purchase, distribution and supply of electricity, quality of service, the tariff charges.

(ii) To issue licences for power transmission, and distribution in the State.

(iii) To regulate the working of licences and to promote their working in an efficient, economical and equitable manner.

(iv) To act as an arbitrator or adjudicator to settle disputes arising between the licencees.

The HERC granted (February 1999) two licences to the HVPNL viz. Transmission and Bulk Supply Licence to carry on transmission and bulk supply business in the State and another licence for Distribution and Retail Supply of electricity in the State. The HERC permitted (April 1999) the HVPNL to carry on the Distribution and Retail Supply of electricity through its two subsidiary distribution companies.

2A.6.2 Reorganisation of the State Electricity Board

The erstwhile Haryana State Electricity Board was reorganised by framing two transfer schemes notified on 14 August 1998 and 1 July 1999. In the first transfer scheme, the generation function was transferred to HPGCL (incorporated in March 1997) and transmission and distribution functions were transferred to HVPNL (incorporated in August 1997). Both the companies, wholly owned by State Government, commenced their activities from 14 August 1998. In the second transfer scheme, the distribution function was transferred from HVPNL to UHBVNL and DHBVNL (both incorporated in March 1999) dividing distribution business in the State into two regions. The distribution companies (wholly owned subsidiaries of the HVPNL) commenced their business from 1 July 1999.

Two distribution companies were not divested as planned

As per reforms and restructuring plan, one distribution company was to be divested (51 *per cent*) to form a joint venture company by December 1998 and other distribution company was to be divested by March 2001. None of the companies were divested as of March 2001.

2A.6.3 Transfer of Assets and Liabilities

In the Haryana Electricity Reform (Transfer of Undertakings, Assets, Liabilities, Proceedings and Personnel) Scheme Rules, 1998 notified on 14 August 1998 (as amended by notification dated 13 August 1999), it was provided that on the effective date, all the assets and liabilities, which the erstwhile Board owned or possessed shall stand transferred to the State Government and in consideration thereof all loans, subventions and obligations of the Board to the State Government shall stand extinguished and cancelled. Further, the assets and liabilities vested in the State Government shall be transferred to HPGCL and HVPNL at a cost determined by the Government.

Accumulated loss of erstwhile Board (Rs 3597 crore) was adjusted by writing off Rs 2245.85 crore of State Government share capital, loans, interest, and by increasing the value of fixed assets by Rs 1124.25 crore

As per annual accounts of the Board, the accumulated loss of the Board as on 14 August 1998 was to the tune of Rs 1879.45 crore, which increased to Rs 3597 crore after carrying out restructuring adjustments. After writing off Rs 2245.85* crore on account of share capital (Rs 1500 crore), loans and interest (Rs 703.19 crore) and electricity duty (Rs 42.66 crore) of the State Government, the balance loss of Rs 1351.15 crore was adjusted by the State Government in the following manner:

(i) Upward valuation of assets of HPGCL and HVPNL by Rs 1124.25 crore.

(ii) Acquisition of equity of Rs 2.50 crore each from HPGCL and HVPNL.

(iii) Transfer of residual loss of Rs 231.90 crore to both the companies.

The State Government retained Board's contingent liability of surcharge on delayed payment of power bills of Power Grid Corporation of India, National Thermal Power Corporation and Nuclear Power Corporation aggregating Rs 730.48 crore. Reasons for retaining the contingent liability by the State Government were not on records.

In the second transfer scheme notified by the State Government on 1 July 1999 (as amended by notification dated 30 November 1999), assets (Rs 1756.60 crore) relating to distribution function were transferred from HVPNL to UHBVNL (Rs 851.70 crore) and DHBVNL (Rs 904.90 crore).

2A.6.3.1 Non-revaluation of assets

Under valuation of fixed assets resulted in non-recovery of Rs 242.97 crore on account of depreciation and return on capital base

The State Government while transferring (14 August 1998) assets to HPGCL/HVPNL did not get the fair value of fixed assets determined. However, the State Government increased the value of assets to adjust the loss and transferred these to HPGCL at Rs 496.99 crore (book value Rs 408.36 crore) which worked out to 122 *per cent* of book value and to HVPNL at Rs 2255.34 crore (book value Rs 1219.72 crore) which worked out to 185 *per cent* of book value. In order to arrive at fair value of assets so as to work out cost of supply and to transfer assets at real value on privatisation, the assets of HVPNL as on 31 March 1998 were subsequently (March 2000) got revalued by a Chartered Valuer (Price Water House, Calcutta). The valuer's report revealed that real value of assets transferred to HVPNL was 270 *per cent* of estimated net book value which worked out to Rs 3293.24 crore. Action was not taken for revaluation of the assets as per

* The adjustment of share capital and outstanding loans have not been made in finance accounts of the State Government up to 2000-01.

reports of the valuers. Based on valuer's report, under valuation of assets worked out to Rs 1037.90 crore (HVPNL: Rs 577.10 crore; UHBVNL: Rs 232.26 crore and DHBVNL: Rs 228.54 crore). Under valuation of assets would result in:

- unintended benefit to the private parties at the time of privatisation of distribution function as they would be procuring the assets at a cheaper price; and

- under calculation of cost of supply due to non-recovery of Rs 242.97 crore on account of depreciation (Rs 76.91 crore worked out on an average rate of depreciation of 7.41 *per cent*) and return on capital base (Rs 166.06 crore at 16 *per cent*) during 2000-01 alone.

The generating assets have not been revalued by HPGCL.

Transfer of shared generating assets to transmission company instead of generating company resulted in loss of Rs 86.13 crore on account of non-recovery of depreciation and return on capital base

2A.6.3.2 Shared generating assets

The State Government had a share in fixed assets of Indraparastha Thermal Power Station (33 *per cent*) of Delhi Vidyut Board, Hydro Power Stations of Bhakra Project (34 *per cent*), Dehar Project (32 *per cent*) and Pong project (16.66 *per cent*). The erstwhile Board was charging depreciation for these assets in its accounts. As on 31 March 1999, the value of assets in these shared projects was Rs 286.54 crore. Since the shared projects discharged function of generation, assets of these shared projects were required to be transferred to generating company i.e. HPGCL. Contrary to this, the State Government transferred the assets of these generation projects to HVPNL reasons for which were not available on record. The HERC in their orders of November 1999 (as amended on 29 May 2000) on Annual Revenue Requirements (ARRs) for transmission and bulk supply business for 1999-2000 and orders of 14 December 2000 on ARR for 2000-01 observed that assets of shared generation projects were neither relevant nor necessary for the purpose of transmission and bulk supply business of the HVPNL and disallowed claim of the HVPNL for recovery of depreciation charges of Rs 11.63 crore claimed in ARRs for 1999-2000 (Rs 5.56 crore) and 2000-01 (Rs 6.07 crore). The HERC further disallowed return on capital base to the extent of Rs 74.50 crore during 1999-2000 and 2000-01 on the assets of shared projects. Had the assets been transferred to HPGCL, depreciation as well as return on capital base to the extent of Rs 86.13 crore could have been recovered through cost of power supplied to the HVPNL.

2A.7 Procedure for purchase and sale of power

The HVPNL purchases power from Central Power Sector Projects, HPGCL, Shared Utilities and Independent Power Producers. After adjusting transmission losses, the net energy is supplied and billed by HVPNL to UHBVNL/DHBVNL on month-to-month basis at Bulk Supply tariff approved by the HERC.

2A.8 Tariff revision

In terms of Section 26(5) of the Haryana Electricity Reform Act, 1997, a licensee shall provide to the HERC at least three months before the ensuing financial year, Annual Revenue Requirement (ARR) giving full details of its calculations for revision of tariff for that financial year along with a proposal to deal with any significant gap between revenue and cost figures. After restructuring, the revision in tariff was to be made with the approval of the HERC.

An audit analysis revealed the following points in tariff revision.

2A.8.1 Tariff fixation for 1998-99

Tariff for 1998-99 was revised by the erstwhile Board from 15 June 1998 instead of from 1 April 1998. Delay in revision of tariff resulted in loss of Rs 41.49 crore on sale of 881.99 MUs of power during 1 April 1998 to 14 June 1998 as pointed out in para 2A.5.1 of the Report of the Comptroller and Auditor General of India for the year 1999-2000 (Commercial)-Government of Haryana.

2A.8.1.1 Fuel surcharge adjustment

The HVPNL did not file application for recovery of increased cost of purchase of power for the period from 14 August 1998 to March 1999, which resulted in loss of Rs 178.53 crore

Section 26 (7) of the Haryana Electricity Reform Act, 1997 provided for recovery of actual increase in fuel cost over and above the basic fuel cost taken in tariff fixation. Haryana Electricity Regulatory Commission (Tariff) Regulations, 1999 provided for recovery of this increase through quarterly fuel surcharge adjustment.

It was noticed that the HVPNL did not file application with HERC for recovery of increased cost of purchase of power of Rs 178.53 crore for the period from 14 August 1998 to 31 March 1999. Failure of the HVPNL to recover increased cost of purchase of power resulted in loss of Rs 178.53 crore to the HVPNL.

2A.8.2 Tariff fixation for 1999-2000

Due to non-filing of any tariff proposal for 1999-2000 with HERC and lesser receipt of subsidy from the Government, the HVPNL failed to bridge the revenue gap of Rs 182.88 crore

The HVPNL submitted in December 1998 its ARR for distribution and retail supply business for 1999-2000 at Rs 2392.41 crore (after adjusting subsidy of Rs 531.15 crore committed by the State Government) to HERC. After adjusting revenue from existing tariff (Rs 2030.48 crore), revenue gap worked out to Rs 361.93 crore. However, the HERC in their orders of 29 November 1999 (as amended on 29 May 2000) assessed the gap at Rs 63.73 crore for which the HVPNL did not file any proposal to deal with the gap. Further, receipt of subsidy amounting to Rs 412 crore from the State Government against commitment of Rs 531.15 crore increased the gap by Rs 119.15 crore. Thus, the HVPNL failed to bridge revenue gap of Rs 182.88 crore.

2A.8.3 Tariff fixation for 2000-01

Due to furnishing incomplete information in ARR for 2000-01 to HERC, the HVPNL suffered a loss of Rs 172.80 crore

For the year 2000-01, the HVPNL submitted (December 1999) its ARR for distribution and retail supply business at Rs 3610.23 crore without furnishing necessary data to HERC to enable it to properly analyse and give its orders on the ARR. The HVPNL revised its ARR at Rs 3406.23 crore in July 2000 and at Rs 3851.77 crore in October 2000. The HVPNL failed to file an embedded cost study detailing functionalisation, classification and allocation of the revenue requirements. Despite incomplete information provided by HVPNL, the HERC assessed (December 2000) the ARR at Rs 3730.45 crore with revenue recovery of Rs 2738.11 crore through tariff revision leaving a revenue gap of Rs 992.34 crore. After considering the subsidy of Rs 769.30 crore to be received from State Government, the HVPNL was left with a gap of Rs 223.04 crore. The tariff scheduled to be revised from 1 April 2000 was finally revised from 1 January 2001. Due to delay in revision of tariff, the revenue gap of Rs 223.04 crore increased to Rs 432 crore. Of this, the HERC allowed HVPNL to carry forward the gap to the extent of Rs 259.20 crore as a deferred cost to be recovered along with interest from the consumers during succeeding years leaving an uncovered gap of Rs 172.80 crore to be made up by efficiency gain. Thus, supply of incomplete information and delay in furnishing necessary details to the HERC resulted in delay in revision of tariff and consequential loss of Rs 172.80 crore to HVPNL.

2A.8.4 Return on capital base

HVPNL claimed 10 *per cent* return on capital base instead of the permissible 16 *per cent* for 2000-01, resulting in loss of Rs 39.25 crore

According to the provisions of the Sixth Schedule of Electricity (Supply) Act 1948, the HVPNL was required to claim 16 *per cent* return on its capital base[*] for 2000-01. Contrary to this, the HVPNL in its ARR filed (December 1999) for Distribution and Retail Supply Business for 2000-01, claimed return of Rs 40.72 crore calculated at 10 *per cent* on its net worth[**] of Rs 407.20 crore instead of claiming Rs 79.97 crore calculated at 16 *per cent* on its capital base (Rs 499.80 crore). The HERC approved the return of Rs 40.72 crore claimed by HVPNL. Thus, incorrect claim of return on net worth instead of on capital base at a lower rate resulted in loss of revenue to the extent of Rs 39.25 crore.

2A.9 Investment plan for development activities

Against planned investment of Rs 1783.50 crore during 1997-98 to 1999-2000 an investment of Rs 900.70 crore was made in development activities

In order to expand generation, transmission and distribution system to meet the growing demand for power, improve operational efficiency of the existing assets and reduce system losses, the erstwhile Board approved (November 1997) power sector reform investment programme for Rs 8023 crore over the next 10 years from 1997-98 onwards. As per financial restructuring plan, the resources planned to be mobilised were from World Bank (33 *per cent*); joint venture distribution companies (14 *per cent*), private sector equity (3 *per cent*); State Government (15.4 *per cent*); Indian financial institutions (14.6 *per cent*); Kreditanstalt Fur Wiederaufbau (KFW) Germany (4 *per cent*)

[*] Capital base includes net fixed assets, work-in-progress, investments, working capital less loans and consumers' security deposits.

[**] Net worth represents paid-up capital plus reserves less intangible assets.

Overseas Economic Cooperation Fund (OECF) Japan (8.2 *per cent*) and internal resources (7.8 *per cent*). During the period from 1997-98 to 1999-2000, against the funds mobilisation programme of Rs 2479.50 crore, the HVPNL could receive Rs 1211.15 crore only from State Government (Rs 997.41 crore), World Bank (Rs 126.76 crore), KFW (Rs 65.73 crore); and financial institutions (Rs 21.25 crore). Against investment plan of Rs 1783.50 crore, the HVPNL made budget provision for Rs 1202.48 crore and incurred an expenditure of Rs 900.70 crore thereagainst. The shortfall of Rs 882.80 crore to the planned investment was attributed to shortage of funds, as discussed in para 2A.9.1 (*infra*).

2A.9.1 World Bank Loan

For implementation of reform and development programme, the World Bank committed to provide loan of US $ 600 million through a series of 5 Adaptable Programme Loans (APLs) comprising APL-1 (US $ 60 million); APL-2 (US $ 150 million); APL-3 (US $ 200 million); APL-4 (US $ 100 million); and APL-5 (US $ 90 million) to be sanctioned during 1997-98; 1998-99; 2000-01; 2002-03 and 2004-05 respectively.

The World Bank did not provide loan of US $ 350 million as the HVPNL failed to increase the tariff as per its stipulations and privatise distribution companies

The World Bank sanctioned APL-1 of US $ 60 million (Rs 240 crore) in January 1998 and the loan was scheduled to be closed in December 2000. At the end of April 2001, the World Bank released US $ 52.37 million (Rs 227.88 crore). As per conditions of World Bank Loan, the HVPNL was required to increase tariff for agriculture to cover at least half of the average cost of supply and increase tariff for non-agriculture by 10 *per cent* each during 1999-2000 and 2000-01; and that distribution companies were to be privatised. The World Bank did not sanction APL-2 (US $ 150 million) and APL-3 (US $ 200 million) as the HVPNL could not increase the tariff as per its stipulations and privatise distribution companies. Therefore, the HVPNL had not been able to avail APL-2 and APL-3 and implement reform and development programme in an effective manner.

Some of the points noticed in purchase of material from APL-1 are discussed as under:

(a) Long term investment programme for rehabilitation and extension of the transmission and distribution system, *inter alia,* included replacement of defective meters on priority. There were 2.32 lakh defective meters as on 31 March 1998. With a view to replace the defective meters, HVPNL purchased 2.07 lakh new meters (single phase and three phase) at a cost of Rs 28.02 crore during 1998-99 with the assistance of World Bank Loan. Of these 0.27 lakh three phase meters valued at Rs 6.24 crore were not installed up to March 2001 due to magnetic effect. Thus, only 1.80 lakh defective meters could be replaced up to 31 March 2001. In the meanwhile, additional 2.27 lakh meters became defective during 1998-99 to 2000-01 which were not replaced as HVPNL abandoned repair of defective meters due to high repair cost and poor quality of repairs. As a result, the number of defective meters awaiting replacement increased to 2.79 lakh as on 31 March 2001. Hence the objective of replacing defective meters on priority could not be achieved.

(b) Similarly 7194 KMs low tension (LT) cable was procured at a cost of Rs 20.78 crore with the assistance of World Bank loan during May 1998 to February 1999 for replacement of undersized and worn out cable. Of this, 5,740 KMs LT cable valued at Rs 16.58 crore had been installed up to March 2001. Reasons for delay/non-installation of cable were attributed to delay in appointment of contractors for construction work.

2A.10 Power generation

State Government decided (November 1997) to encourage private sector participation in setting up new generation capacities and also to invest in new power generation facilities. Additional power requirements were to be sourced from:

- increased improvement in the erstwhile Board's existing generating capacity;
- independent power producers (IPPs); and
- central or regional utilities.

Accordingly, it was envisaged in Reform Programme that generating capacity by the end of 2001-02 would increase to 3755 MW comprising own capacity (910 MW), shared generating projects (932 MW), central generating projects (1208 MW) and independent power producers (705 MW).

In this connection it was noticed in audit that at the end of March 1998, installed generating capacity of the erstwhile Board was 2392 MW comprising own generation (863 MW), shared generating projects (917 MW) and central generating projects (612 MW). Against this, the generating capacity at the end of March 2001 increased to only 2926 MW which comprised own generation (863[*]MW), shared generating projects (917 MW) and share from central generating projects (1091 MW) and IPPs (55 MW). The shortfall in generation capacity forced HVPNL to overdraw 57.67 MUs during August 1999 to May 2000 from central power projects at higher cost besides paying penalty of Rs 2.88 crore to meet its demand for power. Similar details for subsequent period up to March 2001 were awaited.

2A.11 Operational and financial performance after restructuring of the erstwhile Board

The operational and financial performance of the erstwhile Board and companies after restructuring of the Board in respect of major components of reforms is indicated in the Annexure-10.

[*] Excluding generating capacity of 210 MW of Unit VI of Panipat Thermal Power Station synchronised in March 2001 which was not covered in the reforms programme.

It would be seen from the Annexure 10 that after restructuring, targets for operational and financial parameters viz., plant load factor, transmission and distribution losses, revenue subsidy, net receivables, etc. (except plant load factor of Faridabad Thermal Power Station which also decreased in 2000-01) could not been achieved in any of the years up to 2000-01 and the impact of the reforms implemented so far (March 2001) was not forthcoming.

Reasons for poor impact of the reforms programme are attributable as under:

(i) Delay/non-revision of tariff as per the reforms programme.

(ii) Lack of effective measures to reduce the T & D losses.

(iii) Refusal of World Bank to grant further assistance due to non-compliance of terms and conditions attached to assistance.

(iv) Non-improvement in revenue collection system.

The above components are discussed in succeeding paragraphs:

2A.11.1 Plant load factor

Plant load factor of Panipat Thermal Power Station was lower at 50.43, 50.02 and 47.91 *per cent* against 57, 61 and 66 *per cent* during 1998-99, 1999-2000 and 2000-01 respectively projected in reform programme. This was mainly due to the reason that rehabilitation of 4 units of 110 MW to raise plant load factor to 76 *per cent* envisaged to be completed up to March 1999 (Unit-I); September 1999 (Unit-II), January 2000 (Unit-III) and May 2000 (Unit-IV) had not been completed (March 2001) by the contractor due to contentious issues in the contract agreement.

2A.11.2 Excessive transmission and distribution losses

The Central Electricity Authority (CEA) while issuing (May 1992) guidelines for energy audit fixed the accepted level of transmission and distribution losses, according to which these losses should not exceed 15.5 *per cent* (8.5 *per cent* transmission & sub-transmission and 7 *per cent* distribution). Reform programme envisaged reduction in transmission and distribution losses to 32, 31 and 29 *per cent* during 1998-99, 1999-2000 and 2000-01. Despite reforms, transmission and distribution losses had increased from 33.37 *per cent* in 1997-98 to 38.80 *per cent* in 2000-01. It was further noticed in audit that distribution losses in all the 13 operation circles of UHBVNL/DHBVNL ranged between 20 and 48 *per cent* during 2000-01 as against norms of 7 *per cent* fixed by CEA. This indicates that effective steps for reduction in distribution losses through elimination of thefts, replacement of defective meters of consumers and strengthening of sub-transmission and distribution system had not been taken.

Due to excessive transmission and distribution losses, the HVPNL suffered loss of Rs 250.99 crore during 1999-2000

The HERC while passing orders on 29 November 1999 on ARR for 1999-2000 and fixing (27 July 2000) rates for recovery of fuel surcharge adjustment (FSA) allowed norm for transmission and distribution losses at 29.75 *per cent* (9.89 *per cent* transmission and 19.86 *per cent* distribution) against actual loss of 36.56 *per cent* of the Company. As a result transmission and distribution losses over 29.75 *per cent*, amounting to Rs 250.99 crore remained unabsorbed in the tariff and had to be borne by HVPNL.

2A.11.3 Excessive damage to distribution transformers

Reforms and development programme envisaged that rate of damage to transformers should be reduced from 30 *per cent* in 1996-97 to 20 *per cent* in 2001-02. To achieve this target, damage should have been reduced at least by 2 *per cent* every year. As such, rate of damage to transformers should not have exceeded 26 and 24 *per cent* during 1998-99 and 1999-2000 respectively. Though the erstwhile Board/HVPNL purchased and installed 4419 transformers at a cost of Rs 13.76 crore during 1998-99 and 1999-2000 for augmentation of the overloaded transformers under the loan assistance from the World Bank, damage rate of distribution transformers was 28.84 and 25.83 *per cent* during 1998-99 and 1999-2000 respectively. Based on average expenditure incurred on repair of damaged transformers, extra expenditure due to excessive damage of 4743 transformers worked out to Rs 3.73 crore during 1998-99 and 1999-2000. Reasons for high damage to transformers were mainly attributed to poor quality of maintenance of distribution system and unbalancing/overloading of transformers.

2A.11.4 Agriculture tariff

Reforms programme envisaged (November 1997) fixation of agriculture tariff at 75 paise and 100 paise per unit for 1999-2000 and 2000-01 respectively. It was noticed in audit that per unit tariff for agriculture during 1999-2000 ranged between 23 and 50 paise. Further, the HVPNL did not propose revision of tariff of 75 paise and 100 paise for 1999-2000 and 2000-01 respectively. On the recommendation of HVPNL/State Government, tariff fixed by the HERC from January 2001 ranged between 35 to 62 paise per unit for metered supply and Rs 45 to Rs 100 per BHP* per month for un-metered supply consumers. Average tariff for agriculture supply during 2000-01 worked out to 73 paise per unit on the projected revenue of Rs 204.33 crore from sale of 2804 MUs.

Compared with rates of 75 paise per unit for 1999-2000 and 100 paise for 2000-01 envisaged in financial restructuring plan, loss of revenue worked out to Rs 256.55 crore on sale of 4410.63 MUs during 1999-2000 (Rs 180.84 crore) and projected sale of 2804 MUs during 2000-01 (Rs 75.71 crore).

* Brake Horse Power equivalent to 746 watts.

2A.11.5 Non-agriculture tariff

Against actual cost of supply to non-agriculture category at 428 paise per unit during 2000-01, the HVPNL proposed lower tariff of 419 paise per unit, which resulted in loss of revenue of Rs 4.58 crore

Reforms programme provided for an increase in tariff by 10 *per cent* each during 1999-2000 and 2000-01 for all consumer categories. It was noticed that in the absence of any revision of tariff for 1999-2000, tariff for non-domestic supply (Commercial) fixed in June 1998 at 392 paise per unit prevailed during 1999-2000.

As the tariff for this category was 392 paise during 1998-99, the tariff was to be increased by 39 paise (10 *per cent*) each during 1999-2000 and 2000-01. However, the HVPNL in its tariff application for 2000-01 proposed increase of 27 paise per unit which worked to 6.89 *per cent*. Accordingly, the HERC approved, on 22 December 2000, the tariff at 419 paise per unit for this category. Compared with actual cost of supply to this category at 428 paise per unit, estimated loss of revenue worked out to Rs 4.58 crore on the projected sale of 509 MUs in 2000-01.

2A.11.6 Non-achieving return on net worth

(i) Reforms programme envisaged that percentage of subsidy from State Government to total revenue should be brought down to 18.6, 16.4 and 10.8 *per cent* in 1998-99, 1999-2000 and 2000-01 respectively. The reforms programme further envisaged generation of revenue to cover operating cost during 1998-99 and earn rate of return at 10 *per cent* and 16 *per cent* on net worth during 1999-2000 and 2000-01. It was observed in audit that the HVPNL/UHBVNL/DHBVNL received subsidy of Rs 267.47 crore and Rs 412 crore against total revenue of Rs 1412.76 crore and Rs 2209.36[*] crore during 14 August 1998 to March 1999 and 1999-2000 respectively which worked out to 18.93 and 18.64 *per cent*.

It was further observed in audit that profitability of HVPNL and its subsidiary companies UHBVNL/DHBVNL has been negative with commercial loss (excluding subsidy) of Rs 300.65 crore during 14 August 1998 to March 1999 and Rs 858.06 crore during 1999-2000. Thus, objectives of the reforms programme to restore the financial viability of the companies and that power sector ceased to be a burden on the budget of the State Government had not been achieved.

(ii) Reforms programme envisaged that the HPGCL will operate on commercial principle and would sell power to the HVPNL for further sale to the distribution companies. It was seen in audit that the HPGCL did not finalise any power sale agreement with the HVPNL with the approval of HERC and sold the electricity on actual cost basis without recovering any return on its capital base.

2A.11.7 Non-recovery of cost of supply

Average revenue per unit was at 242.94 and 224.98 paise against the envisaged revenue of 269 and 299 paise during the period from 14 August

[*] This represents the revenue realised from sale of power to consumers by HVPNL (April to June 1999) and by UHBVNL/DHBVNL (July 1999 to March 2000).

1998 to March 1999 and 1999-2000 respectively. The average cost of supply was higher at 292.64 and 330.28 paise against envisaged cost of 284 and 292 paise during the same period. As a result, HVPNL, UHBVNL and DHBVNL had incurred continuous financial losses. Reasons for gap in revenue were excessive cost of supply due to low plant load factor, excessive transmission and distribution losses and delay/non-revision of tariff and excessive deployment of staff. It was seen in audit that the number of employees per million units of electricity sold and the number of employees per thousand consumers as on 31 March 2000 was 4.86 and 12.77 respectively as against the all India average of 2.93 and 9.81 respectively.

2A.11.8 Collection of revenue

Receivables against sale of power increased from Rs 737.50 crore as on 14 August 1998 to Rs 1048.39 crore as on 31 March 2000 and worked out to 5.10 months' and 6.33 months' sales respectively

Reforms programme provided that the receivables for sale of power should not be more than three months' sales. Accordingly, the erstwhile Board while transferring assets in August 1998 decided that receivables should be kept for two months' sales so that by the year end, transmission and distribution companies should not have receivable for more than three months.

Against total receivables of Rs 737.50 crore as on 14 August 1998, a provision of Rs 429.80 crore for bad and doubtful debts was made so that the receivables come down to two months' sales. However, the HVPNL did not classify the receivables into good, bad and doubtful debts. Demand raised, collection of revenue and balance outstanding at the end of March 1999 and March 2000 are given below:

Year	Amount due for collection in the beginning of the year	Amount becoming due for collection	Amount collected	Amount due for collection at the end of the year	Receivable in terms of months' sale (5/3xMonths in the year)
	(Rupees in crore)				
1	2	3	4	5	6
14 August 1998 to 31 March 1999	737.50	1289.29	1148.50	878.29	5.10
1999-2000	878.29	1986.66	1816.56	1048.39	6.33

The receivables in terms of months' sale worked out to 5.10 months' and 6.33 months' sale as on 31 March 1999 and 31 March 2000 respectively against 3 months' sale as envisaged in the Reforms Programme.

In order to keep the receivables for a period of 3 months' sales as on 31 March 2000, a provision of Rs 551.72 crore for bad and doubtful debts was required. In the ARR filed for 2000-01, the HVPNL claimed additional provision for Rs 19.36 crore on account of increase in debtors (in addition to existing provision of Rs 429.80 crore). The HERC did not allow additional provision and observed on 22 December 2000 that there was alarming rise in receivables for sale of power and claim for additional provision could be allowed if debts were classified into good, bad and doubtful and steps are taken for disconnection and recovery from defaulters. Thus, due to poor management of receivables, the HVPNL could not recover additional claim for bad debts. Besides this, the HVPNL had been incurring interest cost on additional borrowings for working capital.

2A.11.9 Physical targets and achievements

The targets set for construction of new sub-stations, augmentation of existing sub-stations and construction of transmission lines and achievements thereagainst for the three years up to 1999-2000 are given below:

Particulars	Year	Targets	Achievements	Percentage of achievement
		(Figures in numbers)		
Construction of new Sub- stations	1997-98	26	8	31
	1998-99	26	11	42
	1999-2000	25	13	52
Total		**77**	**32**	**42**
Augmentation of Sub-stations	1997-98	101	49	49
	1998-99	58	33	57
	1999-2000	62	92	148
Total		**221**	**174**	**79**
Transmission lines (Kms)	1997-98	743	254	34
	1998-99	428	168	39
	1999-2000	777	216	28
Total		**1948**	**638**	**33**

From the above, it would be seen that there was a shortfall ranging between 48 and 69 *per cent* in construction of new sub-stations, 43 to 51 *per cent* (except during 1999-2000) in augmentation of existing substations and between 61 and 72 *per cent* in construction of transmission lines during the three years up to 1999-2000. Reasons for shortfall were attributed by HVPNL to paucity of funds.

2A.12 Power purchase agreements

Compared with the average cost of power purchased, purchase of power from Magnum Power Generation Limited at exorbitant rates resulted in loss of Rs 39.02 crore on purchase of 199.34 MUs during 1999-2000 and 2000-01

(i) The erstwhile Board entered into (12 August 1998) a power purchase agreement with Magnum Power Generation Limited, New Delhi for purchase of power at a rate of 240 paise per unit consisting of 129 paise as fixed cost and 111 paise as variable cost at 75 *per cent* of plant load factor of their liquid fuel power plant of 25.2 MW constituting 4 units, each of 6.3 MW capacity. Actual cost of power purchased from the firm was costlier at 342.51 paise and 373.93 paise as compared with average cost of power purchased from other sources at 153.57 paise and 173.27 paise per unit during 1999-2000 and 2000-01. Compared with average cost of power purchased, purchase of power at such exorbitant rates resulted in loss of Rs 39.02 crore on the purchase of 199.34 MUs during 1999-2000 (83.42 MUs); and 2000-01 (115.92 MUs).

The agreement also did not contain scheduled date of financial closing of the project and required date of synchronisation/commercial operation of generating units. However, the agreement stipulated that if a unit of the project fails to pass acceptance test by the required synchronisation date (18 months after financial closing i.e. signing of loan agreements, equity participation agreements and other agreements relating to construction and permanent financing of the project) the firm shall pay to the erstwhile Board (now HVPNL) liquidated damages of Rs 5000 per MW per day for the first 180 days and thereafter Rs 7000 per MW per day for each day from the required date of synchronisation subject to a maximum of Rs 3.50 crore.

The units were synchronised on 26 August 1998 (Unit-IV); 22 September 1998 (Unit-I); 30 September 1998 (Unit-III) and 27 October 1998 (Unit-II). The firm intimated date of financial closure as 30 October 1998. Acceptance test on all the four units had not been conducted so far (March 2001). It was further seen in audit that the firm achieved only 41.5 *per cent* plant load factor against contracted plant load factor of 75 *per cent*. In view of the failure of the firm to demonstrate full capacity, the HVPNL decided (October 1999) that the firm be given a legal notice of default under clause 5.4 of the agreement which requires termination of agreement. However, no legal notice had been served so far (August 2001). Thus, HVPNL did not insist for acceptance test of all 4 units and continued to purchase power at exorbitant rates. Action was also not taken to impose liquidated damages which had accrued to the extent of Rs 3.50 crore and abrogate the contract.

(ii) Maruti Udyog Limited (MUL), Gurgaon installed gas based captive power plant of 20 MW in 1992 and a second unit of 20 MW in 1995. With the installation of the second unit, MUL's captive generation became surplus than its power needs. For this project, a special gas pipe line was laid up to MUL factory and MUL was under an obligation to pay commitment charges to Gas Authority of India Limited, irrespective of the use of gas for power generation. Therefore, MUL proposed (August 1995) to sell surplus power to the Company (erstwhile Haryana State Electricity Board) without indicating any sale rate. At that time, the average rate paid to other gas based plants of NTPC i.e. Anta, Auriya and Dadri for committed power supply was 116.75 paise per unit. The Company, however, proposed a higher rate of 150 paise per unit without any basis. The offer was accepted (October 1995) by MUL and a Power Purchase Agreement (PPA) initially for a period of six months at a lump sum rate of 150 paise per unit (all inclusive) was signed (November 1995). The Company started demanding power from MUL.

While enhancing the rate to 157.50 paise per unit, attention was not paid to average rate of 119.53 paise per unit during 1996-97

The Company allowed an increase of 7.5 paise per unit with effect from 1 January 1997 on account of increase in cost of gas, transportation of gas, operation and maintenance and impact of sales tax. While enhancing the rate to 157.50 paise per unit, attention was not paid towards rate per unit being paid to the other gas based plants; the average rate per unit of which was 119.53 paise during 1996-97. On being asked by MUL, the Company again approved (27 February 1998) the rate of 244 paise per unit for three years with effect from 1 February 1998.

The Company once again reviewed (September 1999) the tariff being paid to MUL and worked out the rate of 151.63 paise per unit by taking into account variable cost, O&M charges and depreciation. The average rate of other gas based plants during 1998-99 was 147.54 paise per unit. The Company, however, reduced (October 1999) the rate from 244 to 200 paise per unit retrospectively from February 1998. The matter was discussed again in April 2000 in a meeting held between Government Representatives, Company's Management and MUL Management, wherein the Company did not insist on the rate of Rs 151.63 paise per unit and intimated the Government that MUL has indicated a rate of 205 paise per unit. Even then, it was decided to pay 220 paise per unit retrospectively from February 1998.

Extra expenditure of Rs 23.78 crore was incurred on purchase of power from MUL

Since MUL's captive power plant was primarily to meet its own demand and only surplus power was offered to the Company, initial offer of the Company to pay a higher rate and subsequent enhancements ignoring cost per unit and lower rates paid to other gas based plants, coupled with shifting stand of Company for tariff evaluation, lacked justification. This resulted in an extra expenditure of Rs 23.78 crore on purchase of 499.927 MUs of power from MUL during November 1995 to November 2000 compared with the average supply rate of other gas based plants. However, as no formal agreement was entered into with MUL, the Haryana Electricity Regulatory Commission, while fixing the tariff for 2000-01 did not consider the cost of power purchased from MUL for review.

In reply to an audit enquiry, the Management stated (March 2000) that the rate per unit paid to MUL could not be compared with the rates of big gas based plants. The reply is, however, not tenable as MUL has been selling only surplus power and was not a committed source of supply, as such payment of higher rate than committed supply was not justified.

It could be seen from the above paragraphs (2A.12 (i) & (ii)), the Company is in the habit of purchasing power at exorbitant rates without safeguarding its financial interest.

Conclusion

Erstwhile Haryana State Electricity Board was plagued with persistent problems like insufficient availability of generation capacity, inadequate transmission and distribution net work, low revenue realisations and unsatisfactory performance parameters resulting in continuous losses. Due to persistent shortage of funds, there was no addition in generation capacity and power transmission and distribution system was also getting overloaded day by day. Large scale investments and comprehensive structural changes were needed to improve the financial health of the power sector. World Bank agreed to support the reforms programme provided power utilities achieve certain milestones such as rationalisation of tariff and privatisation of distribution function. The State Government restructured the erstwhile Board and established autonomous regulatory agency to restore financial viability of power utilities. The World Bank stopped funding the reforms programmes as its stipulations for rationalisation of tariff and privatisation of distribution companies were not fulfilled. The State Government did not evaluate the assets of the erstwhile Board at the time of restructuring and absorbed major losses and liabilities itself. This would give undue benefit to private parties on privatisation of distribution companies. Besides, power utilities could not work out cost of supply on the basis of real value of their assets. Further, the power utilities instead of generating required return on net worth in the initial period of three years, had incurred losses and continue to be a burden on the State Government. Thus, the reforms process in the State has not yielded the desired result as envisaged in the reforms programme so far (September 2001).

The power utilities/State Government should continue the reforms programme by arranging funds from other institutions besides making the power utilities commercially viable and improve the performance parameters. The Power Utilities/State Government should also consider private participation in power generation, transmission and distribution.

The matter was referred to the Company and the Government in May 2001; their replies had not been received (September 2001).