

DELHI VIDYUT BOARD

Annual Revenue Requirement For Financial Year 2001-02 and Tariff Determination Principles for the years 2002-03 till 2005-06

January 22, 2001

BEFORE THE HONOURABLE DELHI ELECTRICITY REGULATORY COMMISSION

Filing No.

Case No.

In the matter of : Filing of Annual Revenue Report (“ARR”) for the financial year 2001-02 and tariff determination principles for 2002-03, 2003-04, 2004-05 and 2005-06 by the Delhi Vidyut Board (“DVB”)

DVB respectfully submits as under:

- (a) On February 25, 1997, DVB was set up as the state electricity board for Delhi under Section 5 of the Electricity (Supply) Act, 1948. With the formation of DVB, the business of electricity generation, transmission and distribution hitherto being undertaken by Delhi Electric Supply Undertaking (“DESU”) was taken over by DVB.
- (b) DVB’s financial position has not been good and as per its available annual accounts, in 97-98, DVB made a loss of around Rs. 536 crs. on a turnover of Rs. 2699 crs. The poor financial position of DVB has had a negative impact on not only its creditors (like suppliers of power, providers of debt etc.), but it has had a negative impact on the consumers of Delhi as well.
- (c) The demand for electricity in Delhi has been growing at around 6-7% p.a. However, due to its poor financial position, DVB has been unable to set up additional generation capacity to meet this increased demand. Further, its poor financial position has also prevented it from procuring power from private sector power projects. As a result of the above, DVB has had to resort to load shedding to match the available supply with demand.
- (d) One of the reasons for the poor financial position is the fact that tariffs in Delhi have not been revised since 1997.

- (e) To improve the acute position of the power sector in Delhi, amongst the other significant actions, Government of National Capital Territory of Delhi ("GoNCT") took the following steps:
- On March 3, 1999, it constituted the Delhi Electricity Regulatory Commission ("Commission") under the Electricity Regulatory Commissions Act, 1998. The relevant notification is enclosed as attachment 1.
 - On October 28, 2000, Government of National Capital Territory of Delhi ("GoNCT") issued the Delhi Electricity Reform Ordinance, 2000. This Ordinance was passed by the Delhi Legislature in November 2000 (hereafter referred to as the "Reform Act"). The Reform Act is enclosed as attachment 2.
- (f) The Reform Act provides for the reform of the electricity sector in Delhi by providing GoNCT with the power to split DVB into generation, transmission and distribution companies and to convert such companies into joint venture companies in which private investors would hold majority equity.
- (g) Further, to ensure that the tariff determination process is objective and to increase avenues for private sector participation in the electricity sector, the Reform Act provides significant powers to the Commission for regulating the electric utilities in Delhi.
- (h) At the time of the issue of the Reform Act, GoNCT had issued advertisement in the newspaper stating its intention to privatise electricity distribution in Delhi.
- (i) As per the provisions of the applicable laws, DVB is required to obtain the approval of the Commission for tariffs it proposes to charge in the ensuing year (hereinafter referred to as "ARR")
- (j) To comply with its obligations as aforesaid and keeping in view the stated intention of GoNCT of privatizing the electricity distribution function of DVB, DVB is filing this ARR for the financial year 01-02 and tariff setting principles for determining tariff in 2002-03, 2003-04, 2004-05 and 2005-06.

It is further submitted that the information being filed has been compiled keeping in view the following factors:

Tariffs have not been increased since 1997

The last tariff revision of DVB took place in 1997. Since then although the costs of DVB have increased significantly (for instance, cost of power purchase which constitutes nearly 70% of the total cost of DVB has increased from Rs. 1.57/unit in 1996-97 to around a projected figure of Rs. 2.13/unit in 2001-02), tariffs have remained virtually the same.

Due to the significant increase in costs since the last tariff revision, it is imperative that tariffs are increased if DVB is to remain financially viable.

Tariffs in Delhi are lower than in other Neighbouring States

Domestic consumers account for more than 40% of the total energy billing of DVB. However, the tariffs for such a significant level of consumption have remained unchanged since 1997 and at their present level such tariffs are much lower than the tariffs in other neighbouring States despite the fact that the difference between energy input and energy billed in DVB is much higher as compared to such other neighbouring States. Further, the cost of electricity for DVB is much higher as compared to the cost of electricity for the neighbouring States.

A comparison of domestic tariffs in Delhi with the tariffs of Haryana, Rajasthan and Uttar Pradesh is presented below:

(Paise/Unit)

Units upto	Haryana	Uttar Pradesh	Rajasthan	Delhi
0-40	260	190	185	100
41-50	360		235	
51-100				
101-200		175		
201-300	425	290	260	250
301- 400				
Above 400				300
Applicable tariff assuming 200 units consumed/month	340	213	260	138

Notes : While the tariffs for Haryana, UP and Delhi are as are prevalent on date, the tariffs for Rajasthan are based on the proposal submitted for approval to Rajasthan Electricity Regulatory Commission.

Further, while the Haryana tariffs presented above are the ones which have been recently approved by the Haryana Electricity Regulatory Commission, the tariffs for both Delhi and UP are likely to be revised by April 1, 2001.

Rajasthan and UP have prescribed a fixed charge (in addition to an energy charge) for domestic consumers. Such fixed charges have been converted into an energy charge by assuming a rate of Rs. 0.10/unit. Such converted fixed charges have been added to the energy charges applicable to the relevant slab and the total energy charge so derived has been presented in the above table.

(Rs./unit)

Units	Haryana	Uttar Pradesh	Rajasthan	Delhi
Cost of Power in 00-01	1.78	1.31	1.67	2.04

The above figures indicate the cost of power purchase for 00-01.

The figures for Delhi are based on the projected figures for 00-01

Figures for UP are based on the projected figures for 00-01 contained in the tariff order of UPERC

Figures for Rajasthan are based on the Tariff Petition filed by Rajasthan Vidyut Prasaran Nigam Limited.

Figures for Haryana are based on the Tariff Order of HERC for Haryana Vidyut Prasaran Nigam Limited.

Audited Accounts are not available for DVB for the last few years

As mentioned earlier, DVB took over the business of DESU from February 25, 1997. DESU did not follow the practice of preparing accounts and getting them audited on a regular basis.

Though DVB inherited the business and business practices of DESU, it has made conscious efforts to prepare accounts on a regular basis. In the short time available to it since its creation, DVB has prepared audited accounts till 1992-93 and un-audited accounts till 1997-98 (Un-audited accounts of 97-98 are enclosed as attachment 3).

However, despite all its efforts, DVB has been unable to make any accounts (whether audited or un-audited) for the years 1998-99 and beyond.

In the absence of the availability of accounts for the years 1998-99 and beyond, the relevant information required by the Commission has been estimated on the basis of the internal records of DVB.

It may also be mentioned that DVB does not maintain any fixed assets register and hence details of individual assets are not available. Therefore, depreciation has been calculated by applying the applicable depreciation rates to the block of assets.

Keeping in view the above, we would request the Commission to kindly consider the internal DVB data for the years 1998-99 and beyond for processing the current ARR application of DVB.

Number of years for which data has been presented

Keeping in view the requirements of the Commission, data has been presented for five years i.e. 1997-98, 1998-99, 1999-00, 2000-01 and 2001-02. Throughout this ARR application, preceding years refer to the years 1997-98, 1998-99 and 1999-00, current year refers to 2000-01 and the ensuing year refers to 2001-02.

Format in which data is required for tariff filing

This is the first time that DVB would be filing a detailed tariff application with the Commission for obtaining its approval for the retail tariffs proposed to be charged for 2001-02.

In the past DVB has not been maintaining information in the formats required by the Commission. Therefore, in the present tariff filing, DVB requests the Commission to accept the information being presently provided by it.

DVB has noted the information requirements of the Commission and shall endeavor to comply with the information requirements in entirety at a later date.

Tariff Rationalisation Proposal of DVB for the year 2000-01

In September, 2000, DVB had submitted a tariff rationalisation proposal for the year 2000-01. Wherein it proposed a fuel adjustment charge ("FAC") of Rs. 0.6581/units for domestic and agricultural consumers. The Commission has already issued its tariff order on such proposal wherein has appreciated the requirement of charging FAC from all consumer categories as this would otherwise continue to widen the gap between actual cost of supply and the extent of its recovery. The Commission has further stated that considering the fact that DVB is going to file a tariff application for 2001-02 in the near future and considering that the FAC would apply only for two months, it would be prudent to wait for detailed tariff application for 2001-02 before finalising such issue.

However, it has appreciated the revenue gap arising out of the non-levy of FAC on all consumer categories and has directed that GoNCT shall provide subsidy to DVB in accordance with the provisions of the Reform Act.

Alongwith the acceptance of the reasonability of the proposal for charging FAC, the Commission has also accepted the DVB proposal for having a uniform tariff for the non-domestic consumer category.

The Commission has also clarified that it is against the proposal of applying an FAC with retrospective effect and has ordered that in future proposed tariff should incorporate the forecasting of revenue requirements on account of FAC.

In this regard, it is submitted that in the accordance with the order of the Commission while the present tariff proposal incorporates the revenue requirement on account of the forecasted increase in power and fuel purchase costs, despite the detailed methods and the sophisticated techniques which may be used for forecasting, variations (both increases and decreases) are inevitable in this cost element.

It may also be mentioned that changes in such costs arise due to reasons beyond the control of DVB and hence it is suggested that a Modified FAC may be allowed as a part of the tariff to account for deviations in the forecasted and the actual scenario's. Such Modified FAC would be calculated on the following basis:

Modified FAC (Rs. per unit) = (Actual per unit cost of power purchase and cost of own generation Less per unit cost of power purchase and cost of own generation considered in Tariff Order)/(1-Loss% approved by the Commission in the Tariff Order)

It may be also be clarified that the Commission has objected to the fact that FAC is made applicable with retrospective effect and has therefore termed it a questionable practice.

DVB acknowledges the fact that at times the levy of FAC with retrospective effect would have caused inconvenience to some of the consumers. However, it may be mentioned that this inconvenience arose from the quantum of FAC that was applied. As the following table shows, the quantum of FAC applied in the past has been significant:

FAC Applicable from	Applicable FAC
April, 1997	Rs.0.1009/unit
April 1, 1998	Rs.0.3023/unit
April 1, 1999	Rs.0.4489/unit
October 1, 1999	Rs.0.4788/unit
February 1, 2000	Rs.0.6581/unit

In the present proposal however, as the reasonable expected increases in power and fuel costs in 2001-02 are already incorporated into the tariff, the Modified FAC levied in future would be nowhere as significant as was the case in the past and hence it is likely that the corresponding inconvenience to the consumers would not arise.

In view of the above, it is suggested that the proposal for a Modified FAC on the above lines may be accepted.

Gap between revenue realised and revenue billed

In the past, there has been a significant gap between the revenue realised from consumers and the actual amount billed as can be seen from the following table:

	97-98	98-99	99-00
Amount Billed (Rs. cr.)	2139	2465	2799
Amount Realised (Rs. cr.)	1785	2147	2510
Collection Efficiency	83.45%	87.10%	89.67%

*The above statement shows the amount billed and realised to consumers other than NDMC and MES
Amount billed includes energy charges, fixed charges, meter rent, electricity duty etc.
Collection efficiency is equal to amount realised divided by amount billed*

It would be observed that the amounts not realised in the year of billing are not getting realised even in later years, as otherwise the collection efficiency in the subsequent years would be greater than 100%.

Due to this collection efficiency shortfall (as also due to tariffs not being sufficient to cover costs) DVB is unable to meet its own financial commitments to the suppliers of electricity and fuel which has resulted in large unpaid power and fuel liabilities of DVB. Further, seeing the defaults of DVB to its existing suppliers, private sector power projects are also shying away from supplying power to DVB. Therefore, collection efficiency shortfall is not only resulting in an unsustainable increase in the power and fuel purchase liabilities of DVB, it is also having a negative impact on the energy available for meeting the demand of consumers.

If the power sector in Delhi is to be revived, it is essential that this collection efficiency shortfall be suitably addressed.

The collection efficiency shortfall has two dimensions. Firstly, collection efficiency shortfalls have resulted in an accumulation of large amount of receivables (which is nothing but the sum total of the collection efficiency shortfalls which have resulted each year in the past). Corresponding to these receivables (which is an asset of a doubtful nature), DVB has a large amount of unpaid power and fuel purchase dues (which is a real liability required to be serviced by DVB).

Secondly, collection efficiency shortfall also impacts the expected revenue which DVB would be able to generate in the next year (i.e. 2001-02) for meeting its various liabilities which shall arise in the next year.

As far as the past cumulative shortfall in collection efficiency (i.e. receivables) is concerned, in accordance with prudent accounting policies, a part of the receivables which has been outstanding for a long period of time is proposed to be provided for as provision for bad and doubtful debts. The additional amounts realised from such provisioning would be used for liquidating the accumulated power and fuel purchase dues of DVB.

As far as the collection efficiency shortfall in the next year is concerned, DVB is in the process of appointing Indian Market Research Bureau (“IMRB”) for undertaking a study of a random sample of the bills raised but not paid in a selected month of 2000-01 so as to determine the reasons (such as wrong address, wrong billing, double/multiple billing, correct address but consumer does not exist etc.) for non-payment of bills by consumers.

The results of this study would be available by last week of March, 2001 and shall be submitted to the Commission at such time. The results of the survey would reveal the actual loss inherent in the collection efficiency shortfall.

Unbundling of DVB

As mentioned earlier, DVB’s financial position has not been satisfactory and it has been unable to fully meet the growing demand of electricity in Delhi. Therefore, with a view to reforming the electricity sector in Delhi, the Reform Act has been issued by GoNCT. The aim of the Reform Act is to restructure the electricity sector in Delhi with a view to increasing avenues for participation of private investors and for increasing the efficiency of the power sector in Delhi. For this purpose, the Reform Act provides GoNCT with the power to split DVB into various companies and to privatise them.

At the time of the issue of Ordinance for the Reform Act, GoNCT had issued advertisements in the newspapers wherein it had stated that DVB would be unbundled and privatised soon. However, the Transfer Scheme for unbundling of DVB is not yet issued.

At this juncture, while filing this tariff application, the future structure/form of entity of DVB is not definite. On one hand since the Reform Act has been issued it would be reasonable to assume that DVB would be unbundled and privatised within a short period of time and therefore, the tariff application should be filed keeping in view the likely scenario which shall prevail in the next year (i.e. 2001-02). On the other hand as the Transfer Scheme for the unbundling of DVB into its successor entities is yet to be issued, it would appear that the tariff application would need to be filed on behalf of the existing DVB.

However, despite the above uncertainty with regard to the restructuring of DVB, the present ARR application is being made under the assumption that DVB would be unbundled by March, 2001 and would be privatised by September, 2001. As a result of the above assumption, DVB is not claiming certain expenses (relating to its past accumulated liabilities) which it may otherwise be permitted (and required) to recover through tariff increases.

DVB is consciously filing this tariff application, with the assumption that DVB would be privatised within the early part of next year, as the tariff increases required under this assumption are far lower than what would otherwise be required in case DVB continues in its present form.

A tabular statement of the indicative difference in the increase in tariff rates under scenario 1 and 2 is provided below:

(Projected indicative percentage increase in 01-02 over 00-01)

Consumer Category	DVB is unbundled and privatised	DVB continues in its existing state
Domestic	Around 50%	More than 100% in each category
Non-Domestic	Around 30%	
Small Industrial Power	Around 25%	
Large Industrial Power	Around 15%	

Privatisation would not only give the benefit of a lower tariff increase in the year 2001-02, but at the same time, it could be possible to avoid further significant tariff increases in Delhi for the next three to four years. Such a scenario could be enforced by projecting future increase in costs being offset by the efficiency improvements to be effected by the privatised entity. In fact keeping in view the above concept, tariff setting principles have been proposed for the years 2002-03, 2003-04, 2004-05 and 2005-06 through which it shall be ensured that future efficient gains are passed through to the consumers in the form of lower tariffs.

In case however, DVB is not unbundled before the issue of the Tariff Order, the tariff increases required would be much higher as in such an event DVB would be constrained to seek to recover even those items of expenditure which it is not seeking to recover at present (such items are explained in the explanatory notes to this ARR). These expenses would relate to the past accumulated liabilities/losses of DVB. As a result of these past accumulated liabilities, the tariff increases required would be much higher. Further, even after the increase in tariffs in 2001-02, further tariff increases would be required in future years as well.

Proposed Privatisation of DVB

DVB is filing this tariff application under the assumption that the electricity distribution business of DVB would be privatised within the early part of next financial year (i.e. latest by around September, 2000). For privatisation to occur, the necessary enabling environment is required.

Privatisation would have a clear cut benefit for the consumers, as the tariff increases projected under the privatisation option are much lower than would otherwise be required in case privatisation is not undertaken. Further, with a stricter monitoring / supervision of the restructured distribution companies, the consumers would benefit on the qualitative aspects of the electricity supply services.

Normally qualitative performance of a distribution undertaking can be ensured through finalisation of various codes e.g. the codes on Distribution, Billing, Metering, Consumer Complaint Redressal etc. However, to enable the consumers to reap the benefits of privatisation, it is essential that necessary conditions are created which would attract and foster private sector participation in the electricity sector in Delhi. For all practical purposes, the interest of private sector in the restructured entities for distribution would be adequate only if the new companies seem to break even within a short time frame of a year. A private sector participant looks for certainty of the treatment of all major elements of revenues and expenditure (including losses), which assures him of being able to project profitability reasonably before bidding.

In the absence of the above certainty, private sector is unlikely to be attracted to the electricity distribution privatisation venture proposed in Delhi and therefore, the corresponding benefits arising out of privatisation such as reasonable tariffs, reduction in electricity demand and supply gap, improvement in quality of supply etc. would not be available to the consumers.

With a view to ensuring the successful privatisation of electricity distribution functions of DVB and to ensure that the above cited benefits flow to the consumers, DVB has proposed tariff setting principles on the basis of which the tariffs proposed in 2001-02 would be adjusted in the years 2002-03, 2003-04, 2004-05 and 2005-06.

In addition to the revision in tariffs as applied for the year 2001-02, it is requested that the Commission may approve these tariff setting principles as well.

From 1.1 : Value of Fixed Assets (for Board)

(Rs. in crores)

Ref. Section	Details	Beginning of 1998-99	Beginning of 1999-00	Beginning of 2000-01	Beginning of 2001-02
*59	Original cost of fixed assets (excluding consumers contribution)	743	2645	3009	3492
	- Cost of Fixed Assets	954	3306	3677	4180
	- Consumers Contribution	211	662	668	689
NA	Capitalised loss allowed by the Commission	0	0	0	0
	Sub-total of positive elements of value of fixed assets (Sum of above) (A)	743	2645	3009	3492
Less 59, 68	Balance of accumulated depreciation at the end of the year	352	549	769	1018
	Part of accumulated subventions from State Government used for capital expenditure	1	1	1	1
	Sub-total of negative elements of value of fixed assets (Sum of above) (B)	354	551	770	1020
	Net Capital Base: net figure (first sub-total above minus the second) i.e. A-B	390	2094	2239	2472

Note : Totals may not tally due to rounding off

Explanatory Notes to Form 1.1: Value of Fixed Assets (for Board)

The form indicates the amount on which the Board is entitled to earn a return of 3% as per the guidelines of the Commission and the provisions of Section 59 of the Electricity (Supply) Act 1948.

This value is equal to the following:

- i) the original cost of fixed assets deployed in the generation, transmission and distribution system of DVB at the beginning of any particular year (details in form 1.1 (a))
- ii) capitalised loss allowed by the Commission

Less:

- i) the amount of consumers contribution (used in funding these assets) (details in explanatory notes to form 1.1 (a))
- ii) accumulated depreciation at the beginning of the year (details in form 1.1 (b))
- iii) the amount of subvention at the beginning of the year (details in form 1.1 (c))

Form - 1.1 (a): Original Cost of Fixed Assets

(Rs. in Crores)

Particulars of assets	Balance at the beginning of the year 1997-98	Additions during the year 1997-98	Retirement of assets during the year 1997-98	Balance at the end of the year 1997-98 5=2+3-4
1	2	3	4	5
Land and rights		29	3	0
Building and structures		82	12	0
- Buildings		77	12	0
- Other Civil Works		5	0	0
Substation transformers, transformer kiosks, other fixed apparatus of rating 100 kVA and above		369	48	0
Substation transformers, transformer kiosks, other fixed apparatus of rating below 100 kVA				0
Switchgear				0
Towers, poles, fixtures, overhead, conductors and devices.				0
Underground cables and devices. Service lines		327	38	0
Metering equipment				0
Miscellaneous equipment (office equipment & vehicles)		14	1	0
- Vehicles		8	0	0
- Furniture and Fixtures		4	0	0
- Office Equipment		1	0	0
Other items (Hydraulic Works)		32	0	0
Total		853	101	0

Explanatory Notes to Form 1.1(a): Original Cost of Fixed Assets

This Form requires information on the original cost of Fixed Assets for the preceding three years, current year and the ensuing year on which the Board is entitled to earn a return as per the guidelines of the Commission. This value is equal to the total original cost of fixed assets as reduced by the amount of consumer's contribution that has been used in funding these assets.

While the separate value of fixed assets and the amount of consumer's contribution are available with DVB, the figures for the amount of consumers contribution used specifically for funding the value of the fixed assets is not available. It may be mentioned that consumers contribution can not only be used for funding the cost of fixed assets (on which DVB is entitled to a 3% return) but such amounts can also be used for funding the cost of work in progress (on which DVB is not entitled for the 3% return). For estimating the amounts of consumers contribution that have been used for funding the cost of fixed assets, the following steps have been undertaken:

- 1 The value of gross block of fixed assets as on March 31, 1998 are available in the 1997-98 annual report of DVB. In order to estimate the gross block of fixed assets in the beginning of the years 1999-00, 2000-01 and 2001-02, the additional investment made in each of the three years of 1998-99, 1999-00 and 2000-01 has been estimated based on the data available with DVB. It has been assumed that 50% of the additional investment made in a particular year would be capitalised in the same year, with the balance 30% and 20% being capitalised in the immediately succeeding two years. Further, as far as the amount of capital work in progress as on March 31, 1998 is concerned, it is being assumed that 80% of such work in progress amount would be capitalised in the year 1998-99. Based on the above, the details of the gross block, capital works in progress and the new investment in the preceding years, current year and ensuing year is given in the table below:

(Rs. in Crores)

	97-98	98-99	99-00	00-01	01-02
<u>Gross Block of Fixed Assets as at the beginning of the year</u>	853	954	3306	3677	4180
<u>Work in Progress</u>					
Opening balance	2477	2666	752	861	901
Add: New Investment	291	438	479	543	597
Less: Investment Capitalised to Gross Block of Fixed Assets	101	2352	371	503	557
Closing Balance of work in progress	2666	752	861	901	940

- 2 The figures of consumers contribution indicated in the balance sheets of DVB are available till the year 1997-98. Based on available records of DVB, an estimate of the amounts of consumers contribution in the preceding years and the current year was made. The expected figures for the ensuing year have been worked out by increasing the consumers contribution figure for 2000-01 by 10%. The results are shown in the following table:

(Rs in crores)

	97-98	98-99	99-00	00-01	01-02
Balance at beginning of the year	789	800	812	825	837
Additions during the year	11	12	13	12	13
Balance at the end of the year	800	812	825	837	850

- 3 In order to estimate the amount of consumers contribution used in funding the fixed assets, the total consumers contribution has been divided amongst the gross block of fixed assets and the work in progress in the ratio of their respective values at the beginning of the year. The calculation for the same is given in the table below:

(Rs in crores)

	97-98	98-99	99-00	00-01	01-02
Consumers Contribution at the beginning of the year	789	800	812	825	837
Gross Block of fixed assets at the beginning of year	853	954	3306	3677	4180
Capital Works in Progress at the beginning of year	2477	2666	752	861	901
Consumers Contribution used for funding the gross block of fixed assets at the beginning of year	202	211	662	668	689

- 4 For the procedure used for estimation of depreciation please refer to explanatory notes to Form 1.1(b).

Note- See File Table 17 for form 1.1(b): Depreciation (on total original cost of fixed assets including consumer contribution).

Note- See File Table 18 for Depreciation rate with Rates Notified by Ministry of Power.

Note- See File Table 19 for Depreciation for the year 1998-99, 1999-20, 2001-02.

Explanatory Notes to Form 1.1 (b) : Depreciation

Different rates of depreciation are applicable for different items of gross block of fixed assets. Accordingly, for working out the depreciation provision for any year, the Commission has requested for the separate value of individual fixed assets.

However, as mentioned earlier, DVB does not maintain a fixed assets register. Further, the annual accounts of DVB for 97-98 provide a broad break-up of gross block of fixed assets which is different from the break-up required by the Commission. For instance, instead of indicating separately the value of assets on substation transformers, switchgears, towers, poles, fixtures, overhead conductors and devices, the annual accounts of 1997-98 provide a consolidated figure for the same. Similarly instead of indicating separately the value of underground cables and service lines, the annual accounts provide a consolidated figure.

In view of the above, for estimation of the depreciation in each of the years of 1998-99, 1999-00, 2000-01 and 2001-02, instead of applying the different depreciation rates to different items of gross block of fixed assets, a consolidated average rate of depreciation has been applied to the gross block of fixed assets worked out in Form 1.1 (a).

The average rate of depreciation for applying to the gross block of fixed assets in future years has been considered at 5.97% on account of the following factors:

- In the figures of annual accounts of 1997-98, the average depreciation rate works out to around 3.56%.
- In case the depreciation rates notified by Ministry of Power through its notification no. S.O. 266 (E) dated March 29, 1994 are applied to the break-up of gross block of fixed assets indicated in the balance sheet of 1997-98, the average depreciation rate would have worked out to 5.97% as can be seen from the following table:

Asset	Gross Value	Dep. Rate	Dep. Amt.
Land and rights	29	0.0%	0
Building and structures	82	3.0%	2
- Buildings	77	3.0%	2
- Other Civil Works	5	3.0%	0
Substation transformers, transformer kiosks, other fixed apparatus of rating 100 kVA and above	369	7.8%	29
Substation transformers, transformer kiosks, other fixed apparatus of rating below 100 kVA			
Switchgear			
Towers, poles, fixtures, overhead, conductors and devices.			
Underground cables and devices.	327	5.3%	17
Service lines			
Miscellaneous equipment (office equipment & vehicles)	14	8.8%	1
- Vehicles	8	6.1%	0
- Furniture and Fixtures	4	12.8%	1
- Office Equipment	1	12.8%	0
Other items (Hydraulic Works)	32	3.4%	1
Total	853	5.97%	51

- However, as mentioned above, the annual accounts report an average depreciation rate of 3.56% despite the fact that the average depreciation rate on the basis of the above referred Ministry of Power notification should have been 5.97%.
- The difference in the two depreciation rates can be due to the non-revision of the depreciation rates being used for the preparation of annual accounts despite the revision in the rates undertaken by Ministry of Power. It is also due to fact that majority of the assets of DVB shown in the annual accounts of 1997-98 were old and therefore, some of the assets would have become fully depreciated by this year (this is supported by the fact that in 1997-98 while the gross block was Rs. 954 crs., the accumulated depreciation was Rs. 294 crs. i.e. accumulated depreciation was equal to around 31% of the gross block of fixed assets). Due to the fully depreciated nature of some of these assets, no depreciation would have been charged on these assets which would have pulled down the average depreciation rate derived by dividing the total depreciation charged with the total gross block of fixed assets (i.e. sum total of assets which have been fully depreciated and assets on which depreciation is still being charged).

- However, after 1997-98, DVB has undertaken significant capital expenditure. For instance from 1998-99 till 2001-02, DVB would have undertaken capital expenditure of around Rs. 2000 crs. which is around two times the gross block of fixed assets of 1997-98. Due to the significant addition to the gross block of fixed assets after 1997-98, the depreciation rate would get increased. Further, since the depreciation rates have been revised by the Ministry of Power, it would be only prudent to calculate depreciation on the basis of these rates.
- In view of the above, depreciation has been charged at an average rate of 5.97% for the years after 1997-98.

Note- See File Table **23** for Form 1.1 C : Subvention from State/Central Government.

Explanatory Notes to Form 1.1 (c) : Subvention from the State/Central Government

The figures for the amount of subvention received by DVB till 1997-98 are available in the annual report. It may be observed the amount of subvention received till 1997-98 was only Rs. 1 crore. As per available records, no subvention has been received by DVB in the years 1998-99, 1999-00 and 2000-01 (upto December, 2000). Further, no subvention is proposed for the remaining period of 2000-01 and for 2001-02. Keeping in view the above, the amount of subvention has been kept constant at the level shown in the year 1997-98.

Note- See File Table 25 for Form – 1.1d : Written Down Cost of Fixed Assets*

Explanatory Notes to Form 1.1 d: Written down cost of assets

This relates to the cost of the assets which have been retired by DVB during the year. As per the annual accounts of DVB for the year 1997-98, the balance of written down cost of assets was nil. Further, no assets have been retired in the years after 1997-98 and accordingly, nil amount has been shown under this asset.

Note- See File Table **27** for Form – 1.1e:Works in Progress.

Explanatory Notes to Form 1.1 (e): Works in progress:

The amount of capital works in progress have been estimated as detailed in form 1.1

Note- See file no 29 for Form – 1.1f : Works in Progress (Capital Expenditure) Details.

Explanatory Notes to Form 1.1 (f): Works in progress (Capital Expenditure)

This form requires detailed break up of the work in progress.

Note—See File Table **31** for Form – 1.1g : Sales and Lease Back of Assets

Note – See File Table 32 for Form – 1.1h :Domestic Loans and Debentures.

Explanatory Notes to Form 1.1 h: Domestic Loans and Debentures

DVB has not issued any debentures.

DVB has only taken loans from three agencies namely Government of India (“GoI”), Central Electricity Authority (“CEA”) and Delhi Government/Delhi Administration.

As far as the loans from Delhi Government/Delhi Administration are concerned, such loans carry an interest rate ranging from 10.25% (for the earlier loans) to 13.50% (for the more recent loans) with the further stipulation that such interest is payable on only 50% of the outstanding loan amount (with the balance 50% loan carrying nil interest). The loans advanced by CEA carry interest rates ranging from 8.75% to 12.50% and loans advanced by Government of India carry interest rates ranging from 3.5% to 8.5%.

While the loans for 1997-98, 1998-99 and 1999-00 are based on the actual loans received from the Delhi Government/Delhi Administration. The loan figures for 2000-01 and 2001-02 have been projected based on the past trend in the release of loans by the Delhi Government.

Note – See File Table 34 to see Form 1.2 Surplus (for board)

Form1.2: Reasonable Return (for licencees)

This form is applicable for the licencees and hence has not been filled

Note - See Table file no. 36 for Form 1.3: Expenditure

Explanatory Notes to Form 1.3: Expenditure

In this form, the Commission has requested for each item of expenditure which is incurred by DVB. While the details of the major items of expenditure can be seen from Forms 1.3a (cost of generation), 1.3b (cost of purchased energy), 1.3c (employee costs), 1.3d (administration and general charges) and 1.3e repairs and maintenance), the following items are explained below:

Provisioning on account of Bad and Doubtful Debts

As mentioned earlier, collection efficiency shortfalls in the previous years have resulted in an accumulation of large amount of receivables (which is nothing but the sum total of the collection efficiency shortfalls which have resulted each year in the past). Corresponding to these receivables (which is an asset of a doubtful nature), DVB has a large amount of unpaid power and fuel purchase dues (which is a real liability required to be serviced by DVB).

In accordance with prudent accounting policies, a part of the receivables which are considered unrealisable are proposed to be provided for as provision for bad and doubtful debts. The additional amounts realised from such provisioning would be used for liquidating the accumulated power and fuel purchase dues of DVB.

In order to estimate the portion of the receivables against sale of power that are bad or can be assumed as non realisable with a fair degree of certainty the total receivables were classified into those that are less than 6 months old, between 6 months and one year old, between 12 and 24 months old, between 24 and 36 months old and more than 36 months old. The details of the receivables on the above basis is given in the table below. (It may be mentioned that these receivables do not include the receivables due to bulk consumers which are separately billed by the bulk supply department of DVB).

It can be observed from the table below that around 54% of the receivables i.e receivables of around Rs. 1141 crores are more than 36 months old and can hence been assumed as being bad and doubtful. Ideally, the entire amount of Rs. 1141 crores should be provisioned and written off as bad debt in the year 2001-02. However, to prevent an upfront tariff shock to the consumers, provisioning of the entire amount as bad debt in the year 2001-02 has not been undertaken. Instead only an amount of Rs.114 crs. (which is equal to 5% of the total receivables of Rs.2123 crs. presented below and just 2.4% of the projected revenue for 2001-02) has been provisioned for.

(Rs. lacs)

Months	Domestic	Non-domestic	Industrial	Agricultural	Total
1-6	15106	9270	9775	840	34991
6-12	7755	3985	3566	754	16060
12-24	11110	13011	5126	808	30056
24-36	7661	4584	4364	485	17095
>36	51390	34782	23064	4843	114079
Total	93023	65631	45895	7731	212280

Note: Since the consumers from the Bulk Supply Department of EDP are being billed manually, it was not possible to compile the age profile of their receivables from sale of power within the available time frame. The above table hence does not include the receivables on sale of power of the consumers being billed from the Bulk Supply Department of DVB. DVB is however, in the process of compiling this information. DVB hence requests the commission to take the same into cognizance in the next tariff application.

Months	Domestic	Non-domestic	Industrial	Agricultural	Total
1-6	16%	14%	21%	11%	16%
6-12	8%	6%	8%	10%	8%
12-24	12%	20%	11%	10%	14%
24-36	8%	7%	10%	6%	8%
>36	55%	53%	50%	63%	54%
Total	100%	100%	100%	100%	100%

Shortfall in Collection Efficiency

As mentioned earlier, DVB is in the process of appointing IMRB to undertake a survey so as to determine the hidden loss in the collection efficiency shortfall. The results of this analysis are likely to be available by the last week of March, 2001 and shall be submitted to the Commission for tariff determination purposes. Till such time, for the current tariff application, Rs. 70 crs. collection efficiency shortfall has been taken into account as an additional cost.

Past Losses

As mentioned earlier, DVB has been making losses due to which it has been unable to service the various loans taken by it from Delhi Government/Delhi Administration and GoI/CEA as well its other liabilities.

Under the assumption that DVB would be privatised (and therefore, its accumulated losses and the corresponding liabilities) would be restructured, no amount has been claimed on account of past losses.

However, in case DVB is not unbundled and privatised, in order to service the past liabilities of DVB, the estimated accumulated losses upto 2000-01 would be recovered in 10 annual instalments of around Rs.700 crs. each.

Note – See File Table 40 for Form 1.3a: Cost of Generation of Energy

Explanatory Notes to Form 1.3 a : Cost of Generation of Energy

The Commission has requested for monthly station wise output and cost of each generating station of DVB for the last two years, current year and the ensuing year. As has been mentioned earlier DVB's accounts have been finalised only upto the year 1997-98.

It may also be mentioned that other state electricity boards in the country have been applying fuel adjustment charge on a quarterly basis and hence calculate the cost of own generation at quarterly rests. However, DVB normally applies fuel adjustment charge on an annual basis.

As a result of the above, DVB does not calculate the cost of own generation on a monthly basis but instead does all its calculations on a yearly basis. In view of the above, the cost of own generation is not available for each month and therefore, the figures shown in form 1.3 relate to the entire year.

It may be noted that the cost of generation presented in Form 1.3a has been calculated by adding the allocated fixed cost to the actual fuel cost incurred for own generation. However, for the purpose of calculating the total expenditure (as shown in Form 1.3), only the actual fuel cost incurred has been shown as a part of the total expenditure on which basis the tariffs have been determined. Therefore, the notional allocation of fixed cost used for calculation of cost of own generation in this Form 1.3a does not have any impact on the tariff.

The annual figures shown in Form 1.3a are based on actual generation figures for 1998-99 and 1999-00 and on estimated generation figures for 2000-01 and 2001-02. Further, for estimating the net generation in 2000-01 and 2001-02, the average auxiliary consumption for each generating station in the period April, 2000 to October, 2000 has been used.

In the figures shown in form 1.3 a, the fixed cost for 1998-99 and 1999-00 has been allocated to the each generating station, on the basis of the following principles:

- The salary and wages applicable to the personnel working in each generating station is determined and this salary expense is allocated to that generating station.

- The ratio of the salary allocated to each generating station to the total salary of DVB is determined and this ratio is applied to the total administrative and general charges expenditure of DVB so as to determine the amount of administrative and general charges that are to be allocated to each generating station.
- In case of Indraprastha Power Station ("IP Station"), depreciation is taken at 5% of the total capital expenditure of plants and interest is charged @ 12% on the written down value on estimated basis
- In case of Rajghat Power House Station (" RPH"), depreciation is taken at 3.6% and interest is charged @ 12% on the total capital expenditure of plants on estimated basis.
- In case of Gas Turbine Station ("GT Station"), depreciation is taken at 6% and interest is charged @ 12% on the total capital expenditure of plants on estimated basis.

The fixed cost allocated to each generating station in 2000-01 and 2001-02 has been calculated by increasing the salary & wages, O&M cost and administration and general expenses part of the fixed cost of 1999-00 by 8% p.a.

It may be mentioned that although DVB does not maintain cost of generation on a monthly basis, it does maintain the output record of each generating station on a monthly basis and this data is presented below:

IP Station – 1998-99

Month	Gross Generation (mu)	Auxiliary Consumption (mu)	Energy Sent Out (mu)
April	74.23	8.22	66.01
May	54.12	6.94	47.18
June	64.75	7.92	56.83
July	68.73	8.87	59.85
August	83.84	10.51	73.34
September	74.56	8.86	65.70
October	50.30	7.05	43.25
November	41.57	6.32	35.24
December	73.29	8.41	64.88
January	62.47	7.11	55.36
February	44.46	5.57	38.89
March	72.15	7.67	64.48
Total	764.47	93.45	671.01

IP Station – 1999-00

Month	Gross Generation (mu)	Auxiliary Consumption (mu)	Energy Sent Out (mu)
April	85.75	8.04	77.71
May	74.28	8.02	66.26
June	72.02	8.46	63.56
July	83.06	9.46	73.60
August	88.72	10.71	78.01
September	61.99	8.10	53.89
October	55.03	6.57	48.46
November	56.57	6.70	49.87
December	55.82	6.81	49.01
January	74.53	8.89	65.64
February	75.40	8.54	66.86
March	63.98	7.51	56.47
Total	847.15	97.81	749.34

IP Station – 2000-01

Month	Gross Generation (mu)	Auxiliary Consumption (mu)	Energy Sent Out (mu)
April	61.81	6.87	54.94
May	99.99	10.81	89.19
June	78.26	9.45	68.80
July	79.44	9.73	69.71
August	70.85	8.70	62.15
September	66.33	7.60	58.73
October	66.96	8.07	58.89
November	76.65	8.55	68.10
Total	600.29	69.78	530.51

RPH – 1998-99

Month	Gross Generation (mu)	Auxiliary Consumption (mu)	Energy Sent Out (mu)
April	51.78	5.58	46.20
May	67.46	6.78	60.68
June	48.79	6.31	42.48
July	55.17	7.22	47.95
August	41.84	5.89	35.95
September	31.86	4.46	27.40
October	37.80	5.40	32.40
November	39.55	6.44	33.11
December	51.49	6.74	44.75
January	72.90	8.43	64.47
February	71.03	7.80	63.23
March	47.41	5.53	41.88
Total	617.08	76.58	540.5

RPH – 1999-00

Month	Gross Generation (mu)	Auxiliary Consumption (mu)	Energy Sent Out (mu)
April	41.20	5.24	35.96
May	68.43	7.60	60.83
June	81.24	9.27	71.97
July	71.44	8.52	62.92
August	89.21	9.54	79.67
September	76.32	8.46	67.86
October	87.44	8.71	78.73
November	76.88	7.87	69.02
December	89.22	8.96	80.26
January	90.49	9.29	81.20
February	82.84	8.55	74.29
March	87.38	9.72	77.66
Total	942.09	101.73	840.37

RPH – 2000-01

Month	Gross Generation (mu)	Auxiliary Consumption (mu)	Energy Sent Out (mu)
April	67.96	7.67	60.29
May	78.98	8.45	70.53
June	69.57	6.20	63.37
July	82.83	8.88	73.95
August	77.24	8.77	68.47
September	42.54	5.08	37.46
October	71.03	8.17	62.86
November	62.13	7.48	54.65
Total	552.28	60.7	491.58

GT – 1998-99

Month	Gross Generation (mu)	Auxiliary Consumption (mu)	Energy Sent Out (mu)
April	39.35	1.56	37.79
May	53.26	2.15	51.12
June	70.99	2.12	68.87
July	80.69	2.59	78.10
August	90.67	2.40	88.27
September	66.69	2.30	64.39
October	66.65	0.66	65.99
November	58.05	0.64	57.40
December	53.02	0.44	52.58
January	47.81	0.45	47.36
February	47.71	0.41	47.30
March	48.09	0.54	47.55
Total	722.98	16.26	706.72

GT – 1999-00

Month	Gross Generation (mu)	Auxiliary Consumption (mu)	Energy Sent Out (mu)
April	36.96	0.48	36.48
May	37.14	1.23	35.91
June	59.02	1.21	57.81
July	48.53	1.50	47.03
August	47.71	1.21	46.50
September	61.87	1.25	60.62
October	84.97	1.62	83.35
November	69.72	1.68	68.04
December	59.42	1.51	57.92
January	80.05	1.56	78.49
February	77.28	1.64	75.64
March	80.99	1.88	79.12
Total	743.66	16.77	726.91

GT – 2000-01

Month	Gross Generation (mu)	Auxiliary Consumption (mu)	Energy Sent Out (mu)
April	56.95	1.73	55.23
May	88.79	2.45	86.34
June	76.90	2.41	74.49
July	85.10	2.09	83.01
August	78.66	2.36	76.29
September	95.00	2.38	92.63
October	101.92	2.21	99.71
November	103.92	2.40	101.51
Total	687.24	18.03	669.21

Note : As far as the data for the remaining period of the current year 2000-01 and the figures for the ensuing year of 2001-02 are concerned, DVB at present has not done planning for the monthly generation and outage of each station and therefore, only the annual figures have been presented above.

Note – See File Table 47 for Form 1.3b : Cost of Purchased Energy.

Explanatory Notes to Form 1.3 b : Cost of Purchased Energy

In this form, the Commission has requested for detailed information relating to the cost of purchased energy. However, as mentioned earlier, DVB has not been keeping information in the detailed formats required by the Commission and hence would request the Commission to kindly accept the present tariff filing with the information currently provided by DVB. DVB shall endeavor to provide the detailed information as per the formats of the Commission in the next tariff filing for the year 2002-03.

The Commission has desired information on the monthly allocation of the total capacity of the various suppliers to DVB. This information is presented in the following table:

Source	Installed Capacity (MW)	Basic Allocation		Additional Allocation w.e.f. (MW)							
		MW	%	1/5/97	1/1/98	1/4/98	12/11/98	14/10/99 to 31/10/99	1/11/99 to 1/4/00	1/5/00 to 31/8/00	1/10/00
Dadri (Th)	840	756	90%	0	0	0	0	0	0	0	0
Dadri (G)	830	91	11%	25	13	32	35	12	24	33	25
Singrauli	2000	150	8%	56	28	70	42	27	54	75	60
Rihand	1000	100	10%	28	14	35	21	13	26	36	30
Anta	419	44	11%	8	4	11	6	6	12	16	13
Auriya	663	72	11%	30	10	25	15	9	18	25	20
Unchahar	630	47	7%	12	2	5	3	5	10	14	10
BTPS	710	710	100%	0	0	0	0	0	0	0	0
Tanakpur	94	10	11%	4	1	3	2	1	2	3	3
Baira Suil	180	20	11%	0	0	0	0	0	0	0	0
Salal	690	78	11%	0	0	0	0	0	0	0	0
Chamera	540	54	10%	0	0	0	0	0	0	0	0
Uri	480	53	11%	7	0	0	0	0	0	0	0
NAPP	440	47	11%	17	42	50	45	6	12	16	13
RAPP	210	70	33%	0	0	0	0	0	0	0	0
Total	9726	2302	24%	187	114	231	169	79	158	218	174

The Commission has also desired information on the number of units billed, number of units received by DVB at the periphery of Delhi and the losses external to the utility's system for each month for the last few years. DVB is presently providing information on the energy units booked at the periphery of Delhi for the years 1997-98, 1998-99, 1999-00 and 2000-01 (upto October 31, 2000):

Sources	Energy Booked at the Periphery of DVB (MU)			
	97-98	98-99	99-00	00-01 (upto October 31, 00
Dadri Thermal	3296	4408	4077	2659
Dadri Gas	646	745	781	474
Singrauli	1295	1378	1366	844
Rihand	862	778	834	494
Anta	225	239	310	229
Auriya	471	517	627	389
Unchahar	180	191	324	244
Western Grid	49	50	75	23
BTPS	4073	4427	4578	2884
Tanakpur	59	65	52	41
Baira Suil	78	78	43	56
Salal	339	363	368	289
Chamera	198	288	203	179
Uri	31	72	211	157
NAPP	820	393	313	225
RAPP	0	0	0	22
HPSEB	0	0	544	415
PSEB	48	0	0	0
Total	12670	13991	14706	9664
Less:				
Sold to RSEB	139	0	0	0
Overlay			0	0
Punjab	0	0	0	0
Haryana	0	0	0	0
UP	0	0	0	0
RSEB	0	0	0	0
HPSEB	0	0	0	0
Chandigarh	0	0	0	0
J&K	0	0	0	0
Total	12631	13991	14706	9664

The Commission has also desired information on the number of units purchased, per unit fixed charges, per unit variable charges and per unit incentives and per unit variable charges paid for each generating station. While the per unit fixed, variable and incentives have been shown for each generating station, due to absence of detailed information only the total amount of wheeling charges have been in the enclosed Form 1.3b.

In the information provided in the enclosed Form 1.3b while the information for the years 1998-99 and 1999-00 is based on actuals, the information for 2000-01 and 2001-02 has been estimated on the basis of the trend observed in 1998-99 and 1999-00, the seven month power purchase data available with DVB and the following assumptions:

Station-wise number of units purchased in 2000-01

For all generating stations owned by NTPC (including Dadri Thermal, Dadri Gas, Singrauli, Rihand, Anta, Auriya and Unchchahar), for energy purchased from Western Grid, for energy purchased from Himachal Pradesh State Electricity Board (HPSEB) and for the energy purchased from NAPP and RAPP, the total energy purchased in 00-01 has been projected by annualising the seven month power purchase data available with DVB for the year 2000-01.

For the Badarpur Thermal Power Station (BTPS), the energy purchased for the year has been projected at the same level as in the previous year.

For the generating stations owned by NHPC (namely Tanakpur, Salal, Chamera and Uri), the total energy purchased in 00-01 has been projected by applying the seasonality factor to the seven month power purchase data available with DVB for the year 2000-01. The seasonality factor applied to such generating stations was based on the seasonality (which is basically the ratio of energy purchased in the first seven months of 1999-00 to the energy purchased in the next five months of 1999-00) observed in 1999-00.

Fixed Cost of Generation for 2000-01

The fixed cost of generation for all generating stations other than Unchchahar, BTPS and RAPP have been projected by increasing the fixed charges (total amount and not per unit), paid to such stations in 1999-00, by the increase in the energy projected to be purchased from such generating stations in 2000-01 (over 1999-00). This has been done under the assumption that in case a buyer is buying a higher amount of energy generated by a generating station, he would also be required to pay a higher proportion of the fixed charges of such station.

The fixed cost of Unchchahar for 1999-00 has been increased by 50% so as to account for the expected increase in its fixed cost due to the commissioning of an additional unit of 210 MW in the year 2000.

The fixed cost for RAPP has been projected by annualising the seven month power purchase data available with DVB.

The fixed charges for BTPS have been projected by increasing the total fixed cost of such generating station in 1999-00 by 2%. It may be mentioned that the entire capacity of BTPS is dedicated to Delhi and hence an increase in the purchase of power from this generating station will not result in a proportionate increase in the fixed cost payable by DVB.

Variable Cost of Generation for 2000-01

The variable cost of generation is being assumed to be limited to the cost of fuel only and hence for hydel generating stations, no variable cost has been shown. However, it may be mentioned that for the power purchased from HPSEB, DVB is required to pay charges only for the energy actually purchased and hence the entire charges for such energy are being shown as variable cost.

The variable cost of each of the thermal generating stations has been projected by applying an increase of 8% p.a. (for five months) to the per unit variable charge for the seven month power purchase data available with DVB.

Station-wise number of units purchased, fixed cost of generation and variable cost of generation in 2001-02

DVB meets more than 85% of its total energy requirements from outside purchases (basically from central sector generating stations). No additional generation capacity has been set up in DVB since 1996 and therefore, the quantum of energy available from DVB owned generating stations is quite limited.

As far as the central generating stations are concerned, DVB has a basic allocation from these stations. However, this basic allocation is inadequate to meet the growing demand of electricity in Delhi. Owing to its status of the capital of the country, each year, DVB has been getting allotment of additional share (i.e. over and above its basic allocation) of electricity from the existing central generating stations. This additional share is used by DVB to meet its incremental demand and therefore, the energy purchased figures of DVB have been showing an increasing trend.

It may however be mentioned that the allocation of additional energy to DVB is a policy decision of the central government which is mostly not pre-planned. Hence, it is not possible to pinpoint, in advance, the source from which additional energy would be made available to DVB to meet a part of its incremental demand in 2001-02. However, keeping in view the past trend in the growth rate of energy purchased (and the special status of Delhi as the capital of the country), an increase of 5% has been projected in the energy purchased in 2001-02 (over the projected figures for 2000-01). This increased amount of energy is assumed to be purchased at the average projected power purchase cost for 2001-02.

For projecting the average cost of power purchased in 2001-02, the units purchased from the various generating stations in 2000-01 have been assumed to remain constant in 2001-02, the total amount of fixed cost of generation has been increased by 2% p.a and the per unit variable cost of generation has been increased by 8% p.a. Incentives have been assumed at the same level as were prevalent in 2000-01.

Note – See File Table **53** for Form –1.3 C: Employees Costs

Explanatory Notes to Form 1.3 c : Employee Costs

The employee cost for DVB has been shown on the basis of the figures available with DVB for the years 1998-99 and 1999-00. The figures for 2000-01 and 2001-02 have been estimated by increasing the net figures (i.e. excluding a reasonable estimate of arrears) for 1999-00 by 11.21% pa.

The percentage of 11.21% is based on the increase exhibited in the ten year period commencing from 1988-89 to 1997-98 for which annual accounts are available. The derivation of this increase is shown below:

	1988-89	1997-98	CAGR
Wage Amount	Rs.98 crs.	Rs.255 crs.	11.21%

CAGR denotes compound growth rate

The figure so arrived at for the year 2001-02 has been increased by Rs.14.70 crs. (Rs. 500 per month x 24500 employees x 12 months) to account for the increase in salaries and wages of the employees on account of the proposed unbundling of DVB (as per the terms and conditions agreed to by GoNCT/DVB with the employees, before the issue of the Reform Act, each employee would be eligible for an additional salary of Rs. 500/- per month on unbundling of DVB).

It may also be mentioned that in the past, a substantial portion of the salary and wages has been capitalised.

Capitalisation of expenses results in the over-estimation of profitability and thus hides the actual financial position of a utility. Such an over-estimation of profitability has a particularly adverse impact in case of electric utilities which are making cash losses. Please note that the consumer tariffs for electric utilities are determined on the basis of the expenses incurred by the utility. In case such expenses are artificially deflated (due to capitalisation), the resultant retail tariffs and revenues would be insufficient to meet the expenditure actually incurred by the utility. This would further increase the cash losses and the unviability of the utility. The unviability of the utility has an adverse impact on the consumers as well as due to cash losses, the utility is unable to invest in system upgradation (which results in poor quality of supply) and is also unable to source additional power supplies to meet the growing demand (which results in long power cuts and hardships for the consumers).

It may also be mentioned that the above policy of capitalisation has not been linked to the amount of capital investment made but rather to the amount of total salary paid to the employees in a particular year. Therefore, theoretically it is possible that in a year even if there was no capital expenditure incurred, the above policy would still result in the capitalisation of a major part of the salary and wages amount for that year.

It may also be noted that the Sixth Schedule (which though applicable to licensees can still provide guidance for the capitalisation of expenses for a state electricity board) of the Electricity (Supply) Act, 1948 provides that a licensee can capitalise upto 15% of the cost of commissioning an asset as supervision charges.

In view of the above, in the ensuing year 2001-02, capitalisation of salary and wages to the extent of 15% of the cost of the asset has been proposed.

Note – See File Table **56** for Form 1.3d : Administrative and General Charges

Explanatory Notes to Form 1.3 d: Administrative and General Charges

The administrative and general charges for DVB for 1998-99 and 1999-00 have been shown on the basis of the figures available with DVB. The figures for 2000-01 and 2001-02 have been estimated by increasing the 1999-00 figures by 7% p.a. However, the figures of departmental consumption of electricity for 2001-02 have been estimated by increasing the projected figures of 2000-01 by the projected increase in the billing rate applicable for the non-domestic consumers in 2001-02 as the departmental consumption is billed at the non-domestic rate.

It may be mentioned that the single largest component of administrative and general charges is amount payable by DVB for the electricity consumed by its own departments and offices. This item accounts for more than 40% of the total administrative and general charges expenditure.

This item of expenditure however, does not have any adverse impact on the financials of DVB as such amount of expenditure is offset by showing an equal amount as an income for DVB.

Note – See File Table **58** for Form –1.3e : Repairs and Maintenance Costs

Explanatory Notes to Form 1.3 e : Repairs and Maintenance

The Commission has desired figures for repairs and maintenance for individual assets. However, such figures are not available with DVB at present. Instead of the above, function wise repairs and maintenance figures have been provided.

It may also be mentioned that the amount being incurred on public lighting is offset by income from charges collected from MCD/PWD for maintenance of street lights.

The figures for 1999-00, 2000-01 and 2001-02 have been estimated by increasing the estimates of 1999-00 by 10% p.a.

Note – See File Table **60** for Form 1.4 : Non-Tariff Income

Explanatory Notes to Form 1.4 : Non-Tariff Income

This head includes the income derived by DVB from sources other than the sale of power.

It may be mentioned that at present DVB undertakes maintenance of street lights on behalf of MCD/PWD for which it charges maintenance charges from MCD/PWD (maintenance charges are around Rs. 50 per street lighting point per month). This amount has been included as income under this head. It may also be mentioned that the maintenance charges of Rs.50 per point per month have remained unchanged since 1997 although there has been a substantial increase in the costs of DVB since then. For instance, the total wage bill of DVB has increased from Rs.255 crs. in 1997-98 to more than Rs.400 crs. in 2000-01 i.e. an increase of more than 50%.

With a view to covering its costs, in the present tariff application, DVB requests the Commission to increase such maintenance charges from Rs. 50 to Rs. 75 per point. In the projection of the maintenance charges for 2001-02 such increase in maintenance charges has been factored in by increasing the projected maintenance charges for 2000-01 by 50%.

DVB also receives commission at the rate of 3% for the collection of electricity duty on behalf of MCD. This item has also been shown as an income under this head.

Further, under existing arrangements, one third share of the generation of Units 2, 3 and 4 of the IP Station is sold to Haryana Vidyut Prasaran Nigam Limited ("HVPNL") for which HVPN is required to pay the total variable charges (applicable to one third generation) and a part of the fixed cost comprising of administration and general charges, salary and wages etc. Such charges recoverable HVPN are shown as other income. The figures for 2001-02 have been estimated by first determining the ratio of amount projected to be billed in 2000-01 to HVPN to the estimated total cost of generation of IP Station in 2000-01. This ratio has then been applied to the projected total cost of generation of IP station in 2001-02 so as to arrive at the likely amount to be billed to HVPN in 2001-02.

DVB has also made certain investment of funds in fixed deposits etc. Interest on such investments has been shown as other income.

Explanatory Notes to Form 1.5

This form is not applicable to DVB as DVB is not licensee and hence Sixth Schedule is not applicable to it.

Note – See File Table **63** for Form 1.6: Aggregate Revenue Requirement

Proposed Means of Meeting ARR	
	2001-02
<u>Aggregate Revenue Requirement</u>	5514
<u>Proposed means of meeting ARR</u>	
Revenue at Current Tariffs	3484
Revenue from Reduction in T&D losses of 2%	98
- Additional Units Billed	383
- Billing Rate	256
Revenue from Increase in Tariffs	
- From units billed at same level of losses	1209
- From additional units billed	52
<i>Less: Electricity Duty</i>	145
Net Revenue Available to meet ARR from Proposed Tariffs	4697

Units Billed (MU's)

	1997-98	1998-99	1999-00	2000-01 (E)	2001-02 (P)
Domestic	2984	3246	3676	4004	4159
Non-Domestic	633	683	770	834	861
Small Industrial Power (SIP)	1010	1158	1326	1490	1598
Large Industrial Power (LIP)	931	969	960	957	957
Agricultural	55	63	68	74	78
Railway	70	101	128	170	218
Water	272	287	295	302	302
Public Lighting	136	138	138	137	137
NDMC	837	970	960	1009	1020
MES	119	138	146	159	167
Total	7047	7751	8468	9136	9494

Average Billing Rate (paise/kWh)

	1997-98	1998-99	1999-00	2000-01 (E)	2001-02 (P)
Domestic	225	249	256	256	256
Non-Domestic	478	504	520	536	536
Small Industrial Power (SIP)	464	466	471	489	489
Large Industrial Power (LIP)	516	539	571	566	571
Agricultural	256	251	270	270	270
Railway	450	450	484	444	450
Water	507	528	562	568	579
Public Lighting	243	282	292	311	311
NDMC	200	224	232	247	247
MES	207	235	244	253	253
Total	331	350	361	366	367

Note: The average billing rate excludes delayed payment surcharge but includes electricity duty

Amount Billed (Rs. lacs)

	1997-98	1998-99	1999-00	2000-01 (E)	2001-02 (P)
Domestic	67110	80863	94006	102516	106489
Non-Domestic	30244	34412	40045	44728	46187
Small Industrial Power (SIP)	46824	53925	62378	72826	78079
Large Industrial Power (LIP)	48064	52174	54829	54195	54604
Agricultural	1403	1591	1826	1992	2091
Railway	3151	4546	6206	7572	9787
Water	13821	15133	16578	17130	17475
Public Lighting	3295	3880	4028	4245	4245
NDMC	16788	21688	22276	24928	25183
MES	2460	3231	3563	4032	4219
Total	233160	271445	305734	334165	348359

Forms in Appendix 3 of the Tariff Filing Formats circulated by the Commission

The information desired by the Commission is being presently compiled by DVB. Such information would be made available to the Commission shortly.

However, the data for the energy flow in the DVB system is provided below:

(mu's)

	1998-99	1999-00	2000-01	2001-02
Energy purchased from non-DVB owned generating stations	14554	15028	16141	16948
Less : Energy lost in non-DVB transmission system	562	322	346	363
Energy received at periphery of Delhi from non-DVB owned stations	13992	14706	25795	16585
Add : Energy delivered by DVB owned generating stations (at bus bar)	1918	2317	2546	2454
Less : Energy from IP Station sold to HVPN	187	217	208	198
Gross Energy available at periphery of Delhi	15723	16806	18133	18841
Less : Energy supplied to NDMC	970	960	1009	1020
Less : Energy supplied to MES	138	146	159	167
Energy available for DVB area of supply	14615	15700	16965	17654
Energy available at 11 KV as per energy Audit Report	13460	14186	15329	15952
Energy billed to retail consumers in DVB area of supply	6644	7362	7968	8691

Energy available at 11 kV is based on the energy audit reports prepared by DVB for 1998-99 and 1999-00.

Figures for 2000-01 and 2001-02 are not yet available and hence have estimated on the following basis :

- *Energy lost in non DVB owned transmission network for 2000-01 and 2001-02 is estimated by applying the percentage energy lost figures for 1999-00*
- *Energy available at 11 KV has been estimated by applying the ratio of energy available at 11 kV to energy available for DVB area of supply in 1999-00.*

The energy losses in DVB as derived from the energy flow table presented above is presented below:

(all figures in mu's unless mentioned otherwise)

	1998-99	1999-00	2000-01	2001-02
Net Energy available to DVB (i.e. Energy purchased from non-DVB owned stations and DVB owned stations less energy supplied to HVPN)	16285	17128	18479	19204
Energy Billed (i.e. sum total of energy billed to NDMC, MES and retail consumers in DVB area of supply)	7752	8468	9136	9878
Difference between net energy available to DVB and energy billed.	52.40%	50.56%	50.56%	48.56%

Form 4.1 : Expected Revenue at Proposed Tariff Charges

<u>Units Billed (MU's)</u>					
	1997-98	1998-99	1999-00	2000-01 (E)	2001-02 (P)
Domestic	2984	3246	3676	4004	4159
Non Domestic	633	683	770	834	861
Small Industrial Power (SIP)	1010	1158	1326	1490	1598
Large Industrial Power (LIP)	931	969	960	957	957
Agricultural	55	63	68	74	78
Railway	70	101	128	170	218
Water	272	287	295	302	302
Public Lighting	136	138	138	137	137
NDMC	837	970	960	1009	1020
MES	119	138	146	159	167
Others	0	0	0	0	0
Total	7047	7751	8468	9136	9494

<u>Average Billing Rate (paise/kWh)</u>					
	1997-98	1998-99	1999-00	2000-01 (E)	2001-02 (P)
Domestic	225	249	256	256	392
Non-Domestic	478	504	520	536	697
Small Industrial Power (SIP)	464	466	471	489	627
Large Industrial Power (LIP)	516	539	571	566	653
Agricultural	256	251	270	270	404
Railway	450	450	484	444	510
Water	507	528	562	568	672
Public Lighting	243	282	292	311	541
NDMC	200	224	232	247	351
MES	207	235	244	253	350
Others	0	0	0	0	0
Total	331	350	361	366	494
Increase in Maintenance charges rate					

<u>Amount Billed (Rs. lacs)</u>					
	1997-98	1998-99	1999-00	2000-01 (E)	2001-02 (P)
Domestic	67110	80863	94006	102516	163010
Non Domestic	30244	34412	40045	44728	60011
Small Industrial Power (SIP)	46824	53925	62378	72826	100240
Large Industrial Power (LIP)	48064	52174	54829	54195	62510
Agricultural	1403	1591	1826	1992	3136
Railway	3151	4546	6206	7572	11098
Water	13821	15133	16578	17130	20261
Public Lighting	3295	3880	4028	4245	7384
NDMC	16788	21688	22276	24928	35760
MES	2460	3231	3563	4032	5823
Others	0	0	0	0	0
Total	233160	271445	305734	334165	469232

Explanatory Notes to Form 4.1: Expected Revenue at Proposed Tariff Charges

In this form the total Revenue from Sale of Power including subsidy receipts from other sources but excluding electricity duty is to be indicated for the ensuing year 2001-02. The Commission has desired information on all consumer categories/sub-categories and slabs.

In the past DVB has not been compiling data in the format desired by the Commission. Only the total amount billed in various categories of consumers viz. Domestic, Non-domestic, Small Industrial Power (SIP), Large Industrial Power (LIP), Agriculture, Street Lighting, Water Works, Railway, NDMC, MES is available for the years 1997-98, 1998-99 and 1999-00. Hence, the break-up of the total amount into the amount billed in various sub-categories e.g. Domestic Light & Fan and Domestic Power in the Domestic category and the amount billed in various components of tariff viz. amount billed on account of energy charges, fixed charges, minimum charges, fuel adjustment charges, electricity duty, shunt charges, excess charges, meter rent etc. as desired by the Commission is not available for the past years. The details of the units, total amount billed and the average billing rate in various categories of consumers is presented in the table below:

Units Billed (MU's)

	1997-98	1998-99	1999-00
Domestic	2984	3246	3676
Non-Domestic	633	683	770
Small Industrial Power (SIP)	1010	1158	1326
Large Industrial Power (LIP)	931	969	960
Agricultural	55	63	68
Railway	70	101	128
Water	272	287	295
Public Lighting	136	138	138
NDMC	837	970	960
MES	119	138	146
Total	7047	7751	8468

Average Billing Rate (paise/kWh)

	1997-98	1998-99	1999-00
Domestic	225	249	256
Non-Domestic	478	504	520
Small Industrial Power (SIP)	464	466	471
Large Industrial Power (LIP)	516	539	571
Agricultural	256	251	270
Railway	450	450	484
Water	507	528	562
Public Lighting	243	282	292
NDMC	200	224	232
MES	207	235	244
Total	331	350	361

Amount Billed (Rs. lacs)

	1997-98	1998-99	1999-00
Domestic	67110	80863	94006
Non-Domestic	30244	34412	40045
Small Industrial Power (SIP)	46824	53925	62378
Large Industrial Power (LIP)	48064	52174	54829
Agricultural	1403	1591	1826
Railway	3151	4546	6206
Water	13821	15133	16578
Public Lighting	3295	3880	4028
NDMC	16788	21688	22276
MES	2460	3231	3563
Total	233160	271445	305734

In order to estimate the amount of revenue billed in various sub-categories of consumers and that billed in various components of tariff in the Domestic, Non-domestic, Small Industrial Power (SIP), Agricultural categories a sample run was conducted on the consumers on the billing data for the period October to November 2000. The results of this sample survey were then applied on the billing details of the year 1999-00 to estimate the amount billed in various categories/sub-categories and from various components of tariff. The indicative results are given in the table below:

	<u>Energy Charges</u>	<u>FPCA</u>	<u>Min Charges</u>	<u>Shunt Charges</u>	<u>Excess Charges.</u>	<u>Meter Rent</u>	<u>Other Charges.</u>	<u>CUR.</u>
Domestic	79270	1453	6274	124	2464	1971	-1884	94006
DL,DX,FH,ML,MP,M X	59936	0	3644	1	0	1757	73	68308
DP	3354	0	975	0	0	57	85	4633
DM,DY,DZ	14067	1274	1358	113	2310	140	-2128	17885
DS,DQ	1549	178	296	9	154	15	100	2391
S1,S2,S3,S4	365	0	1	0	0	2	-15	371
PD	0	0	0	0	0	0	0	418
Non-Domestic	27348	3410	4346	207	3292	351	-475	40045
NL,NP,NX AND LOAD <= 10.00 KW	11254	1625	2425	9	1812	272	114	18232
NL,NP,NX AND LOAD > 10.00 KW	13539	1515	1279	156	1205	43	-583	17866
NM, NQ	1825	169	214	43	165	15	-4	2516
PN	730	101	429	0	110	21	-2	1432
Agriculture	0	0	0	0	0	0	0	1826
AP AND LOAD < 10.00 KW	370	20	33	-14	-43	65	140	592
AS, AQ, AE, AM, AD,AP AND LOAD > 10.00 KW	0	0	0	0	0	0	0	1233
Industrial	44818	6481	7391	1054	949	316	-1254	62378
IP, IX, IL, IC, IY, ID	31846	4934	3988	209	720	203	-1029	42760
IM, IQ, IS, MF, IN	11896	1383	2699	845	224	96	-246	17566
PI	1076	163	704	0	6	17	21	2052
Total for the DVB	151436	11344	18010	1385	6705	2639	-3614	198254

Percentage Consumption in Various Slabs in the Domestic Light & Fan Category

0-50 units	51-100 units	101-200 units	201-400 units	>400 units
23%	19%	21%	17%	20%

On the amount billed so estimated the proposed percentage increase in tariff was applied to estimate the amount billed at revised tariffs.

However, for the Bulk Consumers which include the Large Industrial Power, MLHT, Railway Traction and Water the details for full year 1999-00 and for the period April to September, 2000 were compiled. The proposed percentage increase in tariff was applied to estimate the amount billed at the revised tariffs

Statement of Difference

In the past there has been a significant divergence in the revenue available and the costs incurred by DVB. This divergence as mentioned earlier, has primarily occurred on account of tariff being insufficient to cover costs (it may be noted that DVB tariffs have not been revised since April, 1997).

Even in the ensuing year of 2001-02, an uncovered revenue gap has been projected as can be seen from the following table:

	1997-98	1998-99	1999-00	2000-01	2001-02
Total Expenses	2699	4214	4713	5298	5802
Total Revenues	3235	2820	3183	3473	4985
Uncovered Revenue Gap	536	1394	1530	1825	817

While the revenues and expenses of 1997-98 are based on the un-audited annual accounts of DVB, the figures for the other years have been estimated.

Expenses include electricity duty. Expenses for 1998-99 till 2001-02 also includes surplus for DVB as an expense.

Total revenues include revenue from sale of power and other income.

While revenue gap of the prior years is not to be covered at present because of the proposed privatisation of electricity distribution functions of DVB, the following submissions are made with regard to the uncovered revenue gap in 2001-02.

- DVB has undertaken a backward calculation for this tariff filing exercise, whereby DVB has first projected the tariffs which it believes it can charge from the consumers in 2001-02.
- On the basis of the projected tariffs, DVB has worked out its revenues and has then determined the uncovered revenue gap by subtracting the total expenses of 2001-02 from the projected revenues in 2001-02.
- DVB suggested the following two avenues for recovering this uncovered revenue gap:
 - In case the Commission disallows any expenditure projected by DVB for 2001-02 and which DVB has projected for being recovered through tariffs in 2001-02, DVB requests the Commission to allow an adjustment in the uncovered revenue gap leaving undisturbed the tariffs proposed.
 - Upon finalisation of revenues and expenditures by the Commission, DVB requests the Commission to allow it to cover this uncovered revenue gap in the next year along with a 20% p.a. carrying cost.

Separate Filing for Transmission and Bulk Supply and Distribution and Retail Supply

The Commission has requested for separate filing for transmission and bulk supply and distribution and retail supply.

As mentioned earlier, DVB has not been keeping information in the formats now being desired by the Commission. Further, DVB is a vertically integrated utility which undertakes generation, transmission and distribution activities within the same entity.

In view of the above, it is not possible to immediately completely separate the expenditure requirements in transmission and distribution functions of DVB and hence separate filing of transmission and bulk supply and distribution and retail supply has not been undertaken at present.

However, keeping in view the fact that DVB is likely to be unbundled into various distribution companies (which would then be privatisation), it is essential that bulk supply prices be fixed for each of these individual companies so as to ensure that privatisation can take place successfully.

Keeping in view the above, DVB has already commenced separation of expenses and revenues for various circles keeping in view the distribution configuration proposed for Delhi. It shall shortly provide this data to the Commission so that the bulk supply prices can be determined.

It may be mentioned that the process of determination of separate bulk supply price for each of the proposed distribution companies in Delhi will not have any impact on the retail tariffs being determined at present.

The retail tariffs are being determined on the basis of the total costs of DVB as a whole. Even after unbundling these total costs will remain the same. However, these costs will now be spread over the distribution, generation and transmission companies proposed to be formed out of DVB unbundling. Since the total costs of DVB remain the same even after unbundling, the retail tariffs are not required to be changed and therefore, it is clarified that even after DVB is unbundled and privatised, the tariffs for 2001-02 will remain at the same level as proposed in this tariff application.

However, due to differences in the consumer mix of the distribution companies proposed to be formed in Delhi, the total costs of DVB may be unevenly distributed over these companies which may result in some distribution companies (at the given retail tariffs) making large profits while others may start making losses.

To prevent this disparity, it is essential that the bulk supply price of such companies be determined in a manner such that any advantage or disadvantage resulting from factors not linked to the efficiency of the distribution companies is offset through appropriate differentiation in the bulk supply price.

In view of the above, fixation of a bulk supply price is critical to the proposed privatisation of electricity distribution in Delhi.

Plans for Reducing Technical and Non-Technical Losses with Investment Requirements

DVB has been making continuous efforts for reducing technical losses. For this it has been investing money for construction of new lines and substations, augmentation of existing ones and installation of capacitors. Capital investment programme for the next five years is currently under preparation and shall be made available to the Commission by March, 2001.

DVB has also been making efforts to reduce non-technical losses. For this purpose, it has been undertaking surprise checks of consumer premises and has also been undertaking greater vigilance.

To reduce non-technical losses in un-authorised colonies, DVB has been undertaking a programme of electrification of these colonies and has been making efforts to persuade such consumers to go in for regular connections.

DVB has also been strengthening its energy audit practices so as to ensure that it is able to correctly identify the flow of energy which would result in better accountability.

Further, to improve the non-technical losses arising out of billing related problems, it has already appointed CMC Limited for installation of new computer software programme for billing.

The above steps would be strengthened in 2001-02 so as to ensure that technical and non-technical losses are reduced further.

Plans for Undertaking Load Research

For undertaking load research, one of the critical inputs required is the change in load of consumers in each time period.

However, the present metering system installed at DVB does not allow the measurement of the load profile of the consumers under various tariff categories as majority (except a few large industrial consumers who are equipped with electronic meters) of the consumers are equipped with mechanical meters which do not record the load of the consumer in each time period.

Due to the nature of the existing metering system, it is not possible to undertake any significant load research for each tariff category.

In view of the above, DVB requests the Commission for a waiver from this requirement in the current tariff filing.

Plans for Improving System Power Factor

For improving system power factor, DVB undertakes the following measures:

It installs additional capacitor banks in its system. From 97-98 to July, 2000, DVB has incurred an amount of Rs. 10 crs. for installation of shunt capacitors. Further, an additional investment of Rs. 22 crs. is proposed for capacitor installation in the period 2002-07.

Additionally, to ensure that consumers maintain a reasonable power factor, DVB at present levies power factor surcharge/rebate.

Further, as per the latest Tariff Order of the Commission, DVB would start applying KVAH billing to the large industrial consumers which is also expected to improve the system power factor.

Plans for Determining the Relationship between kWh consumed and Connected Loads

At present, public lighting is provided with unmetered supply.

This actual consumption of public lighting is assessed on the basis of the following norms:

Energy Consumed = Wattage of the lamp/bulb x 12 hours x 30 days

In order to verify the accuracy of the consumption norms applied to public lighting, DVB proposes to compare the actual metered consumption of such public lighting points with the norms it uses. The results of this study would be made available to the Commission in the next year i.e. 2002-03.

DVB also provides un-metered supply to around 75000 consumers situated in un-authorized colonies. These consumers who are residents of un-authorized colonies were initially allowed unmetered supply in a bid to bring such consumers into the billing net of DVB. To persuade such consumers to take connection from DVB, such consumers were prescribed the following tariff rates:

Plot size	Fixed Charges Payable per month
Upto 50 square yard	Rs. 100/-
Above 50 and upto 100 square yard	Rs. 200/-
Above 100 and upto 150 square yard	Rs. 300/-
Above 150 and upto 200 square yard	Rs. 400/-
Above 200 square yard	Only metered supply to be provided and charges levied as per normal tariff schedule

For assessing the energy units consumed by such consumers, DVB divides the total amount billed to such consumers with the average billing rate of the domestic consumers. The resultant figure is assumed to be the energy consumed by such consumers.

To verify the energy consumption of such consumers, DVB proposes to install meters at the premises of such consumers and adjust its consumption norms accordingly. The result of such a study would be provided to the Commission in the next year of 2002-03.

Programme for converting Unmetered Connection to Metered Supply

At present DVB supplies unmetered supply to public lighting.

In addition, to public lighting there are a large number of consumers staying in un-authorized colonies and Jhuggi Jhopdi clusters.

Due to shortage of funds, DVB proposes to electrify such consumers in phases. In 2001-02, DVB proposes to spend an amount of around Rs. 23 crs. for electrifying and metering such consumers.

- | | | |
|----|---|--------|
| a) | For single shift industry/day/night only | 10 hrs |
| b) | For non-continuous process industries
Working during day & night | 20 hrs |
| c) | For continuous process industry | 24 hrs |
| d) | For Non-Domestic | 11 hrs |
| e) | For Domestic | 8 hrs |

(iv) *F is load factor, which shall be taken for different categories of use as below*

- | | | |
|----|--------------|-----|
| a) | Industrial | 60% |
| b) | Non-domestic | 60% |
| c) | Domestic | 40% |

11.4.2 PILFERAGE OF ENERGY IN AGRICULTURAL LOAD:

The following formula shall be applicable provided there is non misuse/consumption for purposes other than agriculture.

Loss of energy = Load in KW X No. of days for which theft is suspected x 24 x 0.3. units.

11.4.3 PILFERAGE OF ENERGY IN TEMPORARY CONNECTIONS:

Pilferage of energy detected during marriages and other occasions for temporary connections shall be assessed as under:

Units assessed = L x D x H where
L = Load in KW
H = Hrs 8
D = No.of days for which supply is used.

NOTES:

- (I) *In case the Investigating Officer has reasons to substantiate higher consumption pattern, other than proposed above in a particular case, it could be worked out giving reasons in his report. The competent authority will pass speaking orders.*
- (ii) *In case the assessment bill worked out on above basis falls short of minimum charges/ minimum consumption guarantee charges as the case may be, the later will be applicable.*
- (iii) *The above energy consumption assessment formula shall be applicable in case of clause 11.1. & 11.2 or where past average consumption is not available for any reason as stipulated in clause 22 & D of Conditions of Supply.”*

When Meter is Faulty (other than cases where the pilferage or fraudulent extraction of energy is taking place).

As per the latest Tariff Order of the Commission, in case of faulty meters, the estimation of energy consumption shall be based on the pattern of consumption available for a period of past six months when the meter was functional and the pattern of consumption recorded in the six months succeeding the replacement of the defective meter. The final adjustment of the said period shall be made based on the pattern of consumption recorded during this total period of twelve months.

Short and Long Term Plans for Rationalising Existing Manpower

Under the Reform Act, it has been envisaged that the creation of successor entities of DVB would not result in any loss of employment to the existing employees of DVB. Accordingly, DVB does not at present have any plans for rationalising the manpower.

However, to upgrade the skills of its employees, DVB does undertake training sessions for its employees.

Expansion Plans for All Capital Investment

The capital budget of DVB is enclosed with this tariff filing application as attachment 4.

Reports on Energy Audit Already Undertaken by DVB

The monthly energy audit reports of DVB are enclosed with this tariff filing application as attachment 5.

Proposed Steps for Strengthening Energy Audit

At present, energy audit is undertaken by taking readings from around 1800 input points at 11 kV. At around 600 of these points, electronic meters have been installed, with the balance points having electro-mechanical meters. To strengthen energy audit, various measures including greater vigilance etc. are being proposed.

Data on Meter Reading Cycle and Meter Readings not carried out, number of consumer bills not served within 15 days of meter reading

DVB undertakes computerised billing of all its consumers.

While the consumers (which primarily includes domestic consumers apart from some non-domestic and agricultural consumers) with a load of less than 11 kW are billed at bi-monthly rests (i.e. once in two months), all other consumers (including domestic consumers with a load of 11 kW and above) are billed at monthly rests.

There are no meter readings which are not regularly carried out.

As far as the issue of bills to consumers is concerned, bills are issued normally within a period of 15 to 20 days from meter reading.

With a view to improving its billing system, DVB has already initiated efforts to further modernise its billing system. Under the proposed system:

- work of billing, allotment of connections etc. would be decentralised to districts
- each district would be interconnected with other districts and with the circles
- on line information would be available on all important parameters of billing
- the entire programme can be made web enabled
- there would be online handling of requests/grievances of consumers
- payments would be made online
- duplicate bills would be issued immediately on request
- there would be a provision for online bill correction
- there would be facility for payment at any counter at any district
- there would be system generation of receipts
- there would be easier disconnection process, and
- there would be stringent security mechanism

The technical features of the system are:

- Sun Solaris 2.6 being used as networking server in each district with compatible PC's
- Application would be browser based with a three tier architecture
- Vision Jade being used for front end applications/tools
- Oracle 8i software platform being used for backend storage of data

For this purpose, DVB had appointed M/s CMC Limited, a computer software agency. An amount of Rs. 30 million has already been spent and trial runs of the new billing system have also commenced. It is expected that within a period of around one year the entire system would become fully functional. It is envisaged that the three distribution companies created out of unbundling of DVB would inherit the contractual rights to use the consultancy agreement already entered into with M/s CMC Limited.

Number of un-authorized connections as per tariff category

At present, the major part of un-authorized connection of DVB fall in the un-authorized colonies and in jhuggi jhopdi clusters.

The number of un-authorized connections in un-authorized colonies/jhuggi jhopdi clusters as per DVB estimates is presented below:

	Estimated Number of Unauthorised Consumers
1017 un-authorized colonies which can be electrified	4,00,000*
238 un-authorized colonies which cannot be electrified	1,00,000
Jhuggi Jhopdi Clusters in Delhi	5,00,000
Total	10,00,000

(Out of this around 75000 consumers are being billed on fixed plot basis)

In addition to the above consumers, there may be other consumers as well which are drawing power without a legal connection. However, DVB does not at present have any estimate of such consumers.

Number of Consumers in various categories

The number of consumers in various categories as on October, 1999 is presented below:

	Number of Consumers
Domestic	1780645
Non-Domestic	336688
Small Industrial Power	75920
LIP	1645
Agricultural	23502
Railways	1
Public Lighting	1
Water Works	1
NDMC	1
MES	1
Total	2218405

Explanatory Notes to Form 4.5 : Class Embedded Cost

In this Form, the Commission has desired information on the embedded cost of various consumer classes. It has also desired information on the amount of external subsidy received.

As far as external subsidy is concerned, it may be clarified that DVB does not receive any external subsidy from any agency (including GoNCT).

As far as the calculation of embedded costs is concerned, one of the critical inputs for determination of the embedded costs is the distribution across consumer categories of the difference between energy billed and energy input. In 2000-01, the difference between energy input and energy billed is projected at around 50.6%.

In the absence of any concrete data on the allocation across consumer categories of this difference between energy input and billed, the embedded cost cannot be calculated.

DVB accordingly, requests a waiver from this requirement for the current year.

Explanatory Notes to Form 4.6 : Class Marginal Costs

As was the case with the calculation of the embedded costs, in the absence of any concrete data on the allocation across consumer categories of this difference between energy input and billed, the marginal cost cannot be calculated.

DVB accordingly, requests a waiver from this requirement for the current year.

Proposed Measures for Publicising the Current ARR and the Tariffs which may be approved by the Commission

On acceptance of this ARR by the Commission, DVB shall release an advertisement of the salient features of the present tariff proposal in two national dailies (one English and one Hindi) so as to inform the consumers about the tariff proposal of DVB. Further, a copy of the ARR application accepted by the Commission would also be made available to consumers on payment of Rs. 500/- in the form a demand draft drawn in favour of Delhi Vidyut Board and payable at Delhi. A copy of the ARR would be kept in all DVB Circle headquarters.

On approval of tariff by the Commission, advertisements shall be released in two national dailies (one Hindi and one English) so as to inform the consumers about the new tariff structure in Delhi. Copies of the new tariff schedule would also be made available to the consumers (on payment of Rs. 50/-) at all DVB Circle headquarters.

Justification for Proposed Tariff

The present tariff increase is being proposed by DVB keeping in view the following parameters:

- The domestic and agricultural tariffs in Delhi have not been increased since 1997 although the per unit cost of power purchase (which accounts for nearly 70% of the total cost of DVB) has increased from Rs. 1.57/unit in 96-97 to a projected figure of Rs. 2.13/unit in 01-02.
- The domestic tariffs in Delhi are much lower than in other neighbouring states despite the fact that Delhi has a much higher cost of power. This can be seen from the following tables:

Units upto	Haryana	Uttar Pradesh	Rajasthan	Delhi
0-40	260	190	185	100
41-50	360		285	
51-100				
101-200		235		175
201-300				250
301-400	425	290		
Above 400				300
Applicable tariff assuming 200 units consumed/month	340	213	260	138

Notes: While the tariffs for Haryana, UP and Delhi are as are prevalent on date, the tariffs for Rajasthan are based on the proposal submitted for approval to Rajasthan Electricity Regulatory Commission.

Further, while the Haryana tariffs presented above are the ones which have been recently approved by the Haryana Electricity Regulatory Commission, the tariffs for both Delhi and UP are likely to be revised by April 1, 2001.

Rajasthan and UP have prescribed a fixed charge (in addition to an energy charge) for domestic consumers. Such fixed charges have been converted into an energy charge by assuming a rate of Rs.0.10/unit. Such converted fixed charges have been added to the energy charges applicable to the relevant slab and the total energy charge so derived has been presented in the above table.

(Rs./unit)

	Haryana	UP	Rajasthan	Delhi
Cost of Power in 00-01	1.78	1.31	1.67	2.04

The above figures indicate the cost of power purchase for each State in 00-01

The figures for Delhi are based on the projected figures for 00-01

Figures for UP are based on the projected figures for 00-01 contained in the tariff order of UPERC

Figures for Rajasthan are based on the Tariff Petition filed by Rajasthan Vidyut Prasaran Nigam Limited

Figures for Haryana are based on the Tariff Order for Haryana Vidyut Prasaran Nigam Limited

- The rates for industrial consumers are also low. For instance, the tariffs for small industrial consumers is around Rs. 3.66/unit.
- Due to an increase in costs since 1997, the difference in the cost incurred and revenue has been increasing.
- To bridge this gap, DVB is proposing an increase in tariffs.
- It may also be noted that tariff increases being proposed by DVB are much lower than what would otherwise be required as DVB is assuming that its distribution activities would be privatised within the early part of next year.

In the event the plans for privatisation of electricity distribution activities of DVB do not fructify, there would be a case for an upward revision of tariffs to meet the revenue gap.

Tariffs for NDMC and MES

DVB has taken over the responsibility from erstwhile DESU for supplying electricity to NDMC and MES. These consumers are supplied at the following voltage levels.

NDMC - At 33 and 11 kV

MES - Only at 11 kV

However, both these consumers are not treated at par with the category 'bulk consumers' as regards the tariff that is charged to them. Due to an interim order by GoI and later for historical reasons, these consumers are charged at the rate, which is equal to the cost of supply at the respective voltage levels at which the electricity is delivered to them. Over the years DESU and later DVB has also found it difficult to recover, though claimed, the increase in the cost of power purchase whenever the Central utilities have billed for such increases after a large time lag.

NDMC and MES have a very good clientele comprising of well to do domestic consumers, large commercial consumers, hotels and institutional consumers. But they are not similarly placed, as is DVB, in regard to unauthorised colonies and JJ Clusters. Thus, they have been privileged in not having to bear the same type of (adverse) consumer mix as is obtained in DVB but being able to charge their consumers the same tariffs as are applicable to the consumers of DVB. Further, as per practice, the load shedding pattern for these two consumers has also not been the same as for the rest of Delhi. In effect, the NDMC and MES have become pockets in the same city which do not have an adverse consumer mix as of DVB and unintentionally get subsidised through other consumers of Delhi.

It is therefore proposed that a separate tariff category be introduced for NDMC and MES which incorporate a certain mark up for reducing the element of cross-subsidy. For the first year we propose a tariff rate at Rs.3.50 per unit.

In case it is decided not to allow the above increase in tariffs for NDMC and MES, it is requested that the resultant revenue gap may be made good by increasing the tariffs for the domestic consumer category.

CURRENT AND PROPOSED TARIFFS

(Above Tariff Schedule is indicative. Full Details can be seen from the detailed tariff schedule in attachments)

Note – See the File Table 97 for Current and Proposed Tariff

Note – See the File Table 98 for Current and Proposed Tariff

Note – See the File Table 99 for Current and Proposed Tariff

Note – See the File Table 100 for Current and Proposed Tariff

Note – See the File Table 101 for Current and Proposed Tariff

Principles To Be Applied For Fixing In Advance Tariffs For The Years 2002-03, 2003-04, 2004-05 And 2005-06

As a part of the exercise for reforming the electricity sector in Delhi, GoNCT proposes to unbundle DVB and privatise the distribution companies formed as a consequence of such unbundling.

Privatisation is expected to result in significant benefits to the consumers such as reasonable tariffs due to efficiency improvements, reduction in the demand supply gap of electricity, better quality of supply etc.

However, the above benefits would accrue to the consumers only if the distribution companies are successfully privatised.

With a view ensuring that the privatisation exercise is successful, DVB is proposing five year tariffs. Such a proposal would ensure that the private investors have a clear-cut business plan to which they can tailor make their future business strategy. Further, the proposal of five year tariffs would also put into place a formal mechanism through which efficiency improvements occurring after privatisation will get channelised to the consumers in the form of reasonable tariffs (it may be noted that in the five year tariff proposal, DVB has suggested a mechanism through which future increases in power purchase cost would be offset by the increased revenues due to future expected efficiency improvements).

In the preceding pages of this tariff application, DVB has already provided the consumer category-wise tariffs which it proposes to charge in 2001-02. DVB now provides the tariff setting principles through which this tariff for 2001-02 will be adjusted each year so as to account for the increases in costs which shall occur each year due to factors such as increase in power purchase cost, increase in salaries, increases in O&M expenses etc.

The principle on the basis of which the tariffs of 2001-02 would be adjusted is presented below:

Tariff in Year 'Y' = Tariff in year '2001-02' + Required Revision in Tariffs in year 'y'

Where,

Required Revision in Tariffs in year `y' =(Sum Total of Change in Power Purchase Cost, change in billing revenue due to reduction in T&D losses, Change in Salary & O&M, Change in Administration and General Expenses, Change in interest on debt, Change in depreciation, Change in Return on Equity, Change in Collection Efficiency Shortfall, Change in Bad Debts Allowed and Change in Revenue Gap left Uncovered in the Previous Year)/(Estimated units sold in year `y')

y = any year from 2002-03, 2003-04, 2004-05 and 2005-06

It may be mentioned that the above changes in costs shall be calculated with reference to the year 2001-02.

The manner in which the above changes in costs shall be determined is elaborated in the following pages:

Change in Power Purchase Cost

Power purchase cost is the most significant cost component of any utility. For instance, in 2000-01, power purchase cost would constitute around 72% of the total costs of DVB.

To accurately factor in the change in power purchase cost which shall occur each year in the next five years, it is being proposed that the Transmission Company/Generation Company (formed out of the unbundling of DVB and which shall act as an intermediary between the supplying generating stations and the distribution company) would be required to file a tariff application with DERC each year whereby it would seek the approval of DERC for the quantum of energy which it would supply to the distribution companies during the next year as well the price at which such energy would be supplied.

The change in power cost for the distribution companies would then get determined on the basis of the Tariff Order of the DERC for the Transmission Company/Generation Company (i.e. the increase in power cost would be equal to cost of power in the base year of 2001-02 and the cost of power as per the Tariff Order of DERC).

However, the change in power purchase cost would be reduced by the increase in revenues which shall be assumed to occur in such year and only the net increase in power purchase cost would be allowed as a pass through for tariff revision.

For determining the increase in revenues due to T&D loss reduction the following two things need to be calculated namely (a) additional units to be billed due to T&D loss reduction and (b) the billing rate which shall be applied to such additional units billed.

The increase in additional units billed can be determined by setting, in advance T&D loss reduction targets for the next five years (DERC can set such T&D loss reduction targets). The additional units billed could then be calculated by applying the T&D loss reduction target for the year to the energy proposed to be supplied by the transmission company to the distribution companies in such year (which shall be based on the Tariff Order of the DERC for the transmission Company/Generation Company).

The average billing rate at which such additional units would be billed would be equal to the sum total of average billing rate for the year 2001-02 and the increase in the average billing rate proposed for the year for which tariff revision is being undertaken.

Fixation of T&D Loss reduction Targets

We would suggest that the Commission may fix the following targets for T&D Loss reduction during the year:

	2001-02	2002-03	2003-04	2004-05	2005-06
T&D Loss Reduction Target	2%	2%	2%	3%	3%

T&D loss for the purposes of the above table refers to the difference between energy input and energy billed

It needs to be noted that the T&D loss reduction targets fixed have to be reasonable as otherwise the entire privatisation exercise would be jeopardised.

Further, the T&D loss reduction targets set have to be reasonable so that there is sufficient incentive for the private investor to take majority control of the proposed distribution companies in Delhi.

Salary

The Reform Act already stipulates that the terms and conditions of service of the employees cannot be made adverse after unbundling and hence it would be prudent to determine this expenditure on the basis of the past increase that has taken place in this expenditure. Such past increase has been determined at 11.21% as per the calculations shown in the Explanatory Notes to Form 1.3c.

In view the above, the change in salary and wages may be determined by increasing the figure of salary for 2001-02 by 11.21% p.a.

O&M Expenses and Administrative and General Expenses

Such expenses are proposed to be determined by increasing the amount of such expenses in 2001-02 by the following weighted inflation index:

$$\text{Inflation Index} = 0.50 * (\text{Change in the Whole Sale Price Index for Manufactured Goods published by Centre for Monitoring of Indian Economy for the immediately preceding year}) + 0.50 * (\text{Change in the Consumer Price Index for Industrial Workers published by Centre for Monitoring for Indian Economy for the immediately preceding year})$$

Interest on Debt and Return of Equity

Change in interest of debt and return of equity has two dimensions

- Changes in the servicing cost of debt and equity notified in the Opening Balance Sheets of the Distribution Companies
- Changes in the servicing cost of the additional debt and equity raised by the distribution companies to fund the future capital expenditure

Determination of the changes in the servicing liability of debt and equity notified in the Opening Balance Sheet is not difficult. As a part of the unbundling exercise, along with the notification of the debt and equity amounts, interest and principal repayment amounts of such debt are also specified through separate loan agreements. The terms contained in such loan agreements shall be used for determining the changes in the servicing costs associated with the debt amount notified in the Opening Balance Sheets.

As far as the servicing cost of the additional debt and equity is concerned, the following methodology is proposed for determining such liability:

- The annual capital expenditure for each year for the next five years shall be fixed in advance by DERC. For this the historical trend in the capital expenditure is already indicated in the Explanatory Notes to Form 1.1 (a). It shall also be specified that a distribution company can spend more than the amounts projected by DERC provided it obtains the prior approval of DERC for such additional capital expenditure.
- It shall be assumed that the capital expenditure permitted to be incurred each year would be funded in the debt equity ratio of 70:30.
- It would be assumed that the debt contracted for funding the above capital expenditure would carry the following interest rates:
 - Debt contracted in the first three years after privatisation – Industrial Development Bank of India (IDBI) Prime Lending Rate (“PLR”) + Maximum IDBI Margin over PLR charged for long term debt in such year.
 - Debt contracted in the fourth and fifth year after privatisation – IDBI PLR plus Maximum IDBI Margin charged for long term debt in such year Less 1.00%
- The debt contracted in each year would be assumed to have a repayment period of eight years (i.e. repayment in thirty two equal quarterly installments), with repayment assumed to commence in the immediately succeeding year to the year in which such debt is assumed to be contracted.
- The additional equity raised in each year would be assumed to carry a post-tax rate of return of 20%.

On the basis of the above assumptions, the increase in servicing cost of additional debt and equity raised for funding capital expenditure shall be determined.

Depreciation

For calculating the depreciation in any year, the gross block of fixed asset needs to be known and a reasonable rate of depreciation needs to be applied to such gross block.

For estimating the gross block of fixed assets, the initial estimate of gross fixed assets and the amount of additions to the gross fixed assets need to be known.

As far the initial value of gross fixed assets is concerned, such value is notified in the Opening Balance Sheets of the successor entities and shall be taken at the levels indicated in the Transfer Scheme.

Further, the additions to such gross block shall be determined on the basis of the estimate of capital expenditure made for determining the incremental debt and equity servicing liability arising out of funding future capital expenditure.

For the purposes of estimating the gross block additions, it shall be assumed that the capital expenditure incurred (which shall be assumed at the same level as was used for calculating the incremental interest and ROE liability) in any year would be converted into fixed assets in the immediately succeeding year.

The rate at which depreciation shall be allowed would be fixed on the basis of the following methodology:

- Till such time as a Fixed Asset Register is prepared by the distribution companies, depreciation, shall be allowed to be charged at the rate of 7% p.a on the gross block of fixed assets at the beginning of the year.
- In case however, the Fixed Asset Register is not prepared by April 1, 2003 the rate at which depreciation shall be allowed to be charged would be reduced to 5% p.a.
- Once the Fixed Asset Register (duly certified by the auditor)is prepared, depreciation shall be allowed to be charged at the rate certified by the auditor of the distribution company.
- Any over or under recovery of depreciation which may have taken place in the earlier years due to a divergence between the actual depreciation rate and the rate of depreciation to which the distribution company would have been eligible on the basis of the Fixed Asset Register shall be allowed to be recovered in the immediately succeeding year.

Change in Bad Debts and Collection Efficiency Shortfall Allowed

Based on the survey report of IMRB, the Commission may fix targets for reduction of collection efficiency shortfall.

Change in Revenue gap left uncovered in the previous year

In case any revenue gap is left uncovered in any year (i.e. where tariffs have been set at a level which is not sufficient to cover costs), such revenue gap shall be recovered in the immediately succeeding year along with a carrying cost of 20% per annum.

Units Estimated to be Sold in Each Year

Once the change in expenses (less the increase in revenue due to T&D loss reductions) has been determined, the amount by which tariffs need to be revised during the current year needs to be determined.

The amount by which the per unit tariffs need to be revised would depend on the number of units sold during the year. These units sold would be determined on the basis of the number of units proposed to be sold by the Transmission Company (or any generating stations) to the distribution company (these shall be fixed as per the Annual Tariff Order of the DERC for the Transmission Company and such generating stations) and the T&D loss level projected for the year.

Tariff Revision Required the current year 'y'

Tariff revision during the current year y (whether y is equal to 2002-03, 2003-04, 2004-05 and 2005-06) would be determined by dividing the change in expenses (net of increase in revenues due to T&D loss reductions) by the units estimated to be sold in the next year.

Tariff Principles for the years 2006-07 to 2010-2011

While the tariff principles presented above for the years 2001-02 till 2005-06 would considerably reduce the uncertainty faced by the investors in the initial few years after privatisation, uncertainty would remain with the years after 2005-06. To remove this uncertainty, we would propose that at least one year before the commencement of the financial year 2006-07, the Commission lays down the principles through which tariffs would be determined in the next five years. We would suggest that in its present tariff order, the Commission may also agree to such proposal.

Subject	Page No.
Introduction	1
Form 1.1 - Value of Fixed Assets for Board	12
Explanatory Notes to Form 1.1	13
Form 1.1a - Original Cost of Fixed Assets	14
Explanatory Notes to Form 1.1a	15
Form 1.1b - Depreciation	17
Depreciation rate with rates notified by Ministry of Power	18
Depreciation for 1998-99, 1999-00, 2000-01 and 2001-02	19
Explanatory Notes to Form 1.1b	20
Form 1.1c - Subvention from State/Central Government	23
Explanatory Notes To Form 1.1c	24
Form 1.1d - Written Down Cost of Fixed Assets	25
Explanatory Notes to Form 1.1d	26
Form 1.1e - Works in Progress	27
Explanatory Notes to Form 1.1e	28
Form 1.1f - Work in Progress (Capital Expenditure)Details	29
Explanatory Notes to Form 1.1e	30
Form 1.1g -Sale and Lease Back Of Assets	31
Form 1.1h - Domestic Loans and Debentures	32
Explanatory Notes to Form 1.1h	33
Form 1.2 - Surplus (for Board)	34
Form 1.2 - Reasonable Return (For Licensees)	35
Form 1.3 - Expenditure	36
Explanatory Notes to Form 1.3	37
Form 1.3a - Cost of generation of energy	40
Explanatory Notes to Form 1.3a	41
Form 1.3b - Cost of Purchased Energy	47
Explanatory Notes to Form 1.3b	48
Form 1.3c - Employee Cost	53
Explanatory Notes to Form 1.3c	54
Form 1.3d -Administrative and General Charges	56
Explanatory Notes to Form 1.3d	57
Form 1.3e - Repairs and Maintenance Cost	58
Explanatory Notes to Form 1.3e	59
Form 1.4 - Non - Tariff Income	60
Explanatory Notes to Form 1.4	61
Explanatory Notes to Form 1.5	62
Form 1.6 - Aggregate Revenue Requirements	63
Proposed Means of Meeting ARR	64
Form 2.1 - Expected Revenue at Tariff Charges Prevailing in a Particular Year	65

Form in Appendix 3 of the Tariff Filing Formats provided by Commission	66
Form 4.1 - Expected Revenue Proposed Tariff Charges	68
Explanatory Notes to Form 4.1	69
Statement of Difference	72
Separate Filing for Transmission and Bulk Supply and Distribution and Retail Supply	73
Plans for Reducing Technical and Non - Technical Losses with Investment Requirements	75
Plans for Undertaking Load Research	76
Plans for Improving System Power Factor	77
Plans for Determining the Relationship Between kWh consumed and connected loads	78
Program for converting unmetered connections to metered supply	79
Method of Assessing when meters are not installed/defective	80
Short and Long Term Plans for Rationalising Existing Manpower	83
Expansion Plans for All Capital Investment	84
Reports on Energy Audit Already Undertaken by DVB	85
Proposed Steps for Strengthening Energy Audit	85
Data on Meter Reading Cycle and Meter Reading not carried out, number of consumer bills not served within 15 days of meter reading	86
Number of Un-authorized Connections as per Tariff Category	88
Number of Consumers in various Categories	89
Explanatory Notes to Form 4.5 - Class Embedded Costs	90
Explanatory Notes to Form 4.6 - Class Marginal Costs	91
Proposed Measures for Publicising the Current ARR and the Tariffs which may be approved by the Commission	92
Justification for Proposed Tariff	93
Tariffs for NDMC and MES	94
Current and Proposed Tariffs	96
Principles to be Applied for Fixing in Advance Tariff for the years 2002-03, 2003-04, 2004-05 and 2005-06	102