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Performance Appraisal of Selected State Level Power Distribution Public Enterprises in Uttar Pradesh

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Abstract

The paper provides an analytical study on the "Performance Appraisal of the Selected State Level Power Distribution Public Enterprises in Uttar Pradesh". A critical study has been done on the three power sector Public Enterprises as first Madhyanchal Vidyut Vitran Nigam Limited (MVVNL), second Dakshinanchal Vidyut Vitran Nigam Limited DVVNL and third Purvanchal Vidyut Vitran Nigam Ltd. (PuVVNL). We have used Secondary data available from 2009 to 2016, taken from the Bureau of Public Enterprises & CAG report on Power Distribution SLPEs. This paper is used to show the Consumer Satisfaction, Production and Distribution Capacity and Required Capacity of power in detail. On the basis of the present study it is fond out that performance of power distribution companies in Uttar Pradesh is not satisfactory and there is much difference between planned and required capacity. For the improvement of performance strict rule and regulation should be passed and cheap and flexible programs should be followed.

***Key Words**: CAG report, DVVNL, MVVNL, Operational efficiency, Production in MVA, Power Distribution Companies, PUVVNL, SLPSEs and UPPCL.*

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1. INTRODUCTION

It is known that, after independence, India has made a focus on the development of state led growth, this resulted mushrooming growth of public sector undertaking at both state and national level. India too chose state ownership both as the remedies of market failures and the mean to achieve social objective. As the Public sector enterprises would also be able to contribute in the tempo of economic development of the economy. Not only National but also State government too created many SLPEs with the intention to set up infrastructure for the development, generate employment opportunity, promote growth and reduce inter-regional disparities in Uttar Pradesh. In Uttar Pradesh the business of Distribution of power is carried out by five power distribution companies as MVVNL, DVVNL, PUVVNL, PVVNL and Kanpur Electricity Supply Company ltd. All power distribution companies work under the control of UPPCL as administrative control of energy department Government of UP. The UPPCL procure the power on behalf of Distribution Companies for distribution of consumer. UPPCL could meet 75% power demand in 2009-10, 71% in 2013-14 and 74% in 2015-16.

The present paper concentrates on the Performance Appraisal of State Level Power Distribution Public Enterprises in UP by which we wish to try to find out the actual performance of the selected state level public enterprises on the basis of production capacity of electricity and service.

3. OBJECTIVES OF THE STUDY

The present paper has focused on the following objective-

1. To examine the performance appraisal of selected power distribution companies of Uttar Pradesh.
2. To identify the production capacity in Mega Watt and compare with past performance.
3. To compare between Planned Capacity, Actual Capacity & Required Capacity of Power Distribution Companies in UP.
4. To measure the consumers service provided by Distribution Companies in UP.
5. To suggest measures for consumer satisfaction, if any.

4. HYPOTHESES

Hypotheses are the general concept which are used as the principle instrument in the present research as:

H0 (a): The performance of state level power distribution companies in Uttar Pradesh has not been satisfactory.

Ha (a): The performance of state level power distribution companies in Uttar Pradesh has been satisfactory.

H0 (b): The planned capacity and required capacity of state level power distribution companies in Uttar Pradesh has not been matched.

Ha(b): The planned capacity and required capacity of state level power distribution companies in Uttar Pradesh has been matched.

5. RESEARCH METHODOLOGY

The Research Methodology for the present paper focused on the following points:

5.1 Research Design & Research Type : Here we have used Observational Research Design with Descriptive Research type to analyse data about the selected Power Distribution Companies in UP.

5.2 Source of Data: The main source of data in the present research is Secondary which has been collected from the yearly publication, Report of CAG, and Report of Department of Public Enterprise of UP.

5.3 Sample Units: There are selected three power distribution companies as sample (1) MVVNL, (2)DVVNL & (3) PUVVNL for the study in the present research.

5.4 Sample Area and Research Area: The geographical area covered by the survey shall be related with UP as all three Distribution Companies are related with all area of Uttar Pradesh.

5.5 Statistical Techniques: Selected data on Distribution Companies followed by analysis through Statistical Tools like Tables, Graph, Diagram and percentage calculation to see the trends.

6. DATA COLLECTION AND INTERPRETATION

As we know that the power distribution in Uttar Pradesh is carried out by five Power Distribution Companies as on Madhyanchal Vidyut Vitran Nigam Limited (MVVNL), Dakshinanchal Vidyut Vitran Nigam Limited (DVVNL), Purvanchal Vidyut Vitran Nigam Limted (PuVVNL), Paschimanchal Vidyut Vitran Nigam Limited (PaschiVVNL), Kanpur Electricity Supply Company Ltd. (KESKO) respectively. All these Power Distribution Companies work under the control of UPPCL and administrative control is in hand of Department of Energy Government of Uttar Pradesh. UPPCL procures & makes available power/electricity on behalf of Power Distribution Companies for the distribution to consumer. UPPCL could meet 75% in 2009 & 71% in 2014 and in 2016 74% power demand of Uttar Pradesh. To get the correct figure we have to analyse all Power Distribution Companies separately.

(1) Madhyanchal Vidyut Vitran Nigam Limited

MVVNL is the main power distributor company & covers 19 district of UP with 33.36 lakh consumer in 2014 & about to 36.80 lakh as estimated in 2016. The detailed information are as given in the following table:

Table 1: Existing, Required & Shortage of Transformation capacity (in MVA)

Year	Existing Transformation Capacity	Required Transformation Capacity	Shortage in Transformation Capacity
April-2009	4460	7081	2621
April-2014	5598	9338	3740
April-2016	6053	10241	4188

Sources: Information furnished by the MVVNL & Report of CAG on SLPSEs.

Interpretation: It is observed from the above table (1) there is a shortage of transformation capacity. As on April 2009, 2014, 2016 there are shortage of 2621 MVA, 3740 MVA, and 4188 MVA respectively.

Table 2: Capacity planned & Actual added (in MVA)

Capacity Planned during year-2009	Capacity Added during year-2014	Short fall in planned & actual added-2014	Capacity required to planned during year - 2014
1500	1138	362 or(24% of total)	4848

Sources: Information furnished by the MVVNL & Report of CAG on SLPSEs.

Interpretation: It is observed from the above table (2) there is a much difference in capacity planned in 2009 (1500 MVA) and capacity added in 2014 (1138 MVA). So there is a shortfall of 362 MVA.

Table 3: Operational Efficiency in form of Sub-transmission and Distribution loss (in MVA)

Year	Energy Available for Sale	Energy Billed	Energy Loss	% of Energy Loss
2009-10	9755	7546	2209	22.64%
2011-12	12537	9233	3304	26.35%
2013-14	14175	10710	3465	24.44%
2015-16	15760	11680	3590	22.77%

Sources: Information furnished by the MVVNL & Report of CAG on SLPSEs.

Interpretation: It is observed from the above table (3) there is a much difference in Energy Available for Sale and Energy Billed. Hence the company suffered loss of 2209 MVA (2009-10), 3304 MVA (2011-12), 3465 MVA (2013-14) and 3590 MVA (2015-16) respectively.

Table 4: Consumer Satisfaction & Redressal of Grievance

Years	No. of Consumer	Metered Consumer	Unmetered Consumer	% of Unmetered Consumer
2009-10	26,91,568	16,72,426	10,19,142	37.86
2011-12	30,29,242	20,13,671	10,15,571	33.53
2013-14	33,36,182	22,54,260	10,81,922	32.43
2015-16	36,82,280	24,40,280	11,10,950	32.34

Sources: Information furnished by the MVVNL & Report of CAG on SLPSEs.

Interpretation: It is observed from the above table (4) there is a much difference between the Metered Consumers and Unmetered Consumers. In 2009-10 16,72,426 are Metered consumer and 10.19,142 are Unmetered consumers same way in 2015-16 24,40,280 are Metered consumer and 11,10,950 are Unmetered consumers.

(2) Dakshinanchal Vidyut Vitran Nigam Limited (DVVNL): DVVNL is the main Power Distribution Companies & cover 21 district of Uttar Pradesh with 25.66 lakh consumers in march 2014 & 28.38 lakh in 2016. The detailed information are given in the following table.

Table 5: Existing, Required & Shortage of Transformation capacity (in MVA)

Year	Existing transformation capacity	Required transformation capacity	Shortage in transformation capacity
April-2009	4969	7862	2893
April-2014	7121	11231	4110
April-2016	9260	15680	6420

Sources: Information furnished by the DVVNL & Report of CAG on SLPSEs.

Interpretation: It is observed from the above table (5) there is a shortage of transformation capacity. As on April 2009, 2014, 2016 there are shortage of 2893 MVA, 4110 MVA, and 6420 MVA respectively.

Table 6: Capacity planned & Actual added (in MVA)

Capacity Planned during year-2009	Capacity Added during year-2014	Short fall in planned & actual added-2014	Capacity required to planned during year - 2014
6262	3640	2622 or (42% of total)	2152

Sources: Information furnished by the DVVNL & Report of CAG on SLPSEs.

Interpretation: It is observed from the above table (6) there is a much difference in capacity planned in 2009 (6262 MVA) and capacity added in 2014 (3640 MVA). So there is a shortfall of 2152 MVA.

Table 7: Operational efficiency in form of sub-transformations & distribution's loss (in MVA)

Year	Energy available for sale	Energy Billed	Energy loss	% of energy loss
2009-10	12959	8840	4119	31.78%
2011-12	16052	11335	4717	29.39%
2013-14	20108	13151	6957	34.60%
2015-16	24360	15640	8720	3579

Sources: Information furnished by the DVVNL & Report of CAG on SLPSEs.

Interpretation: It is observed from the above table (7) there is a much difference in Energy Available for Sale and Energy Billed. Hence the company suffered loss 4119 MVA (2009-10), 4717 MVA (2011-12), 6957 MVA (2013-14) and 8720 MVA (2015-16) respectively.

Table 8: Consumer Satisfaction & Redressal of Grievance

Years	No. of consumer	Metered consumer	Unmetered consumer	% of unmetered consumer
2009-10	21,37,858	13,26,025	8,11,833	37.97%
2011-12	22,80,313	15,24,021	7,56,292	33.17%
2013-14	25,66,021	17,99,401	7,66,620	29.88%
2015-16	28,54,025	19,45,420	9,08,605	31.83%

Sources*-: Information furnished by the DVVNL & Report of CAG on SLPSEs.*

Interpretation: It is observed from the above table (8) there is a much difference between the Metered Consumers and Unmetered Consumers. In 2009-10 13,26,025 are Metered consumer and 8,11,833 are Unmetered consumers same way in 2015-16 19,45,420 are Metered consumer and 9,08,605 are Unmetered consumers.

(3) Purvanchal Vidyut Vitran Nigam Ltd. (PUVVNL): Purvanchal Viyut Vitran Nigam Ltd. is the larger electricity distributer company covered 21 districts of U.P. with 38.10 lakh consumers as on 2014 & about 40 lakh as on 31 march 2016.The detailed information are given in the following tables-

Table 9: Existing, Required & Shortage of Transformation capacity (in MVA)

Year	Existing transformation capacity	Required transformation capacity	Shortage in transformation capacity
April-2009	5176	9110	3934
April-2014	6531	13891	7360
April-2016	7560	15860	8300

Sources: Information furnished by the PUVVNL & Report of CAG on SLPSEs.

Interpretation: It is observed from the above table (9) there is a shortage of transformation capacity. As on April 2009, 2014, 2016 there are shortage of 3934 MVA, 7360 MVA, and 8300 MVA respectively.

Table 10: Capacity planned & Actual added (in MVA)

Capacity Planned during year-2009	Capacity Added during year-2014	Short fell in planned & actual added-2014	Capacity required to planned during year - 2014
1678	1355	323or(19% of total)	8715

Sources: Information furnished by the PUVVNL & Report of CAG on SLPSEs.

Interpretation: It is observed from the above table (10) there is a much difference in capacity planned in 2009 (1678 MVA) and capacity added in 2014 (1355 MVA). So there is a shortfall of 323 MVA.

Table 11: Operational Efficiency in form of Sub-transformations & Distribution's Loss (in MVA)

Year	Energy available for sale	Energy Billed	Energy loss	% of energy loss
2009-10	12,701	9597	3104	24.44%
2011-12	15,704	11590	4114	26.20%
2013-14	13,830	10448	3382	24.45%
2015-16	14,910	10,415	4495	30.14%

Sources: Information furnished by the PUVVNL & Report of CAG on SLPSEs.

Interpretation: It is observed from the above table (11) there is a much difference in Energy Available for Sale and Energy Billed. Hence, the company suffered loss 3104 MVA (2009-10), 4114 MVA (2011-12), 3382 MVA (2013-14) and 4495 MVA (2015-16) respectively.

Table 12: Consumer Satisfaction & Redressal of Grievance

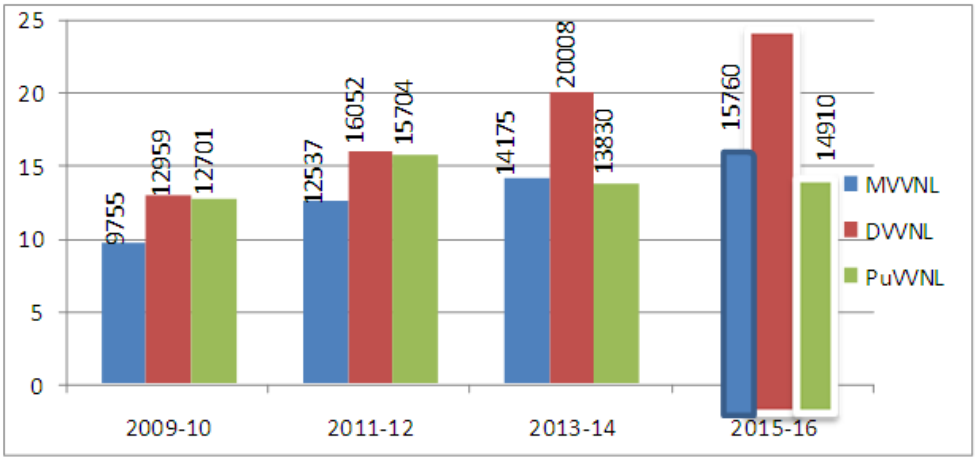
Years	No. of consumer	Metered consumer	Unmetered consumer	% of unmetered consumer
2009-10	29,12000	12,53,387	16,58,613	56.96%
2011-12	331400	14,37,643	18,76,357	56.62%
2013-14	381000	15,87,982	22,22,018	58.32%
2015-16	42,50,500	18,48,920	24,01,580	56.50%

Sources: Information furnished by the PUVVNL & Report of CAG on SLPSEs.

Interpretation: It is observed from the above table (12) there is a much difference between the Metered Consumers and Unmetered Consumers. In 2009-10 (12,53,387 are Metered consumer and 16,58,613 are Unmetered consumers) same way in 2015-16 (18,48,920 are Metered consumer and 24,01,580 are Unmetered consumers).

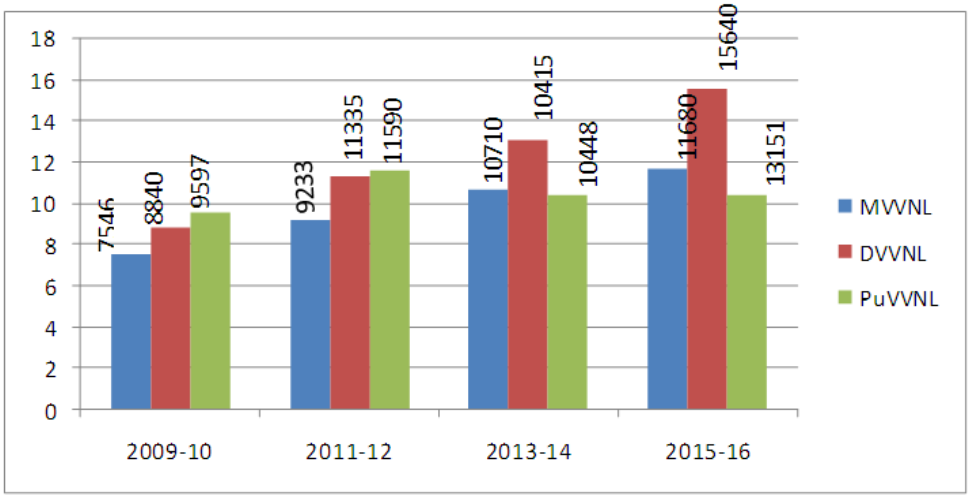
Comparison of the Operational Efficiency of all three SLPSEs: The operational efficiency of all three company can be shown under the following points:

1. **Energy available for Sale in MVA**



Interpretation: It is observed from the above bar diagram that energy available for sale of all three companies are as (9755, 12959, 12701 in 2009-10), (12537, 16052, 15704 in 2011-12), (14175, 20008, 13830 in 2013-14), and (15760, 24360, 149010 in 2015-16) of MVVNL, DVVNL, PUVVNL respectively.

2. Energy Billed/Sale in MVA



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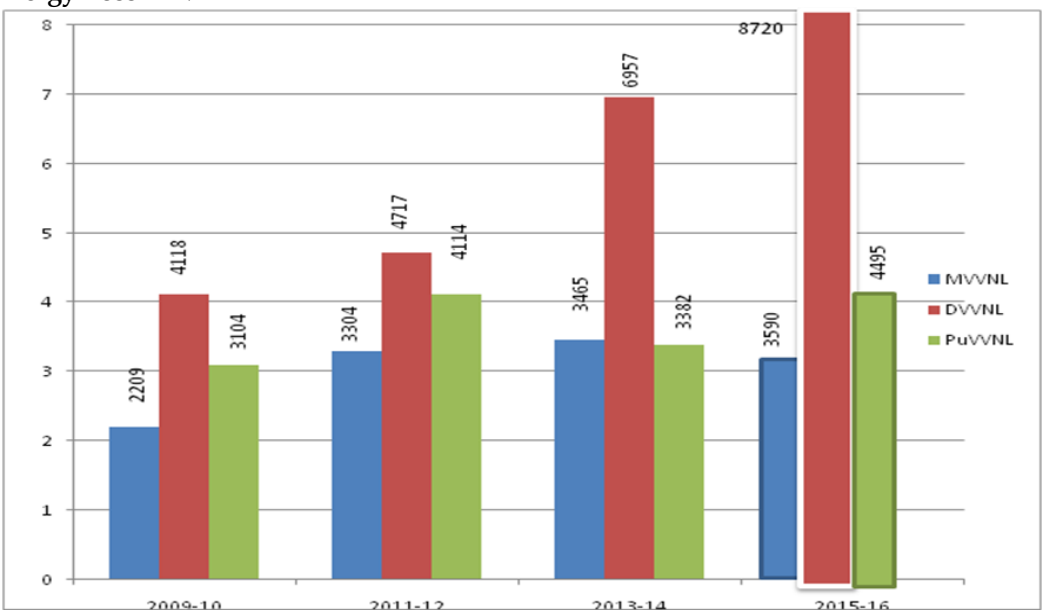
Interpretation: It is observed from the above bar diagram that energy billed or sale in MVA of all three companies are as (7546, 8840, 9597 in 2009-10), (9233, 11335, 11590 in 2011-12), (10710, 10415, 10448 in 2013-14), and (11680, 15640, 13151 in 2015-16) of MVVNL, DVVNL, PUVVNL respectively.

2. Energy Loss in MVA



Interpretation: It is observed from the above bar diagram that energy Loss in MVA of all three companies are as (2299, 4118, 3104 in 2009-10), (3304, 4717, 4114 in 2011-12), (3465, 6957, 3382 in 2013-14), and (3590, 8720, 4495 in 2015-16) of MVVNL, DVVNL, PUVVNL respectively.

7. Findings and Observations Through Above Data

On the basis of performance appraisal of Power Distribution Companies we notice the following points:

1. There was the shortage of transformation capacity in an MVVNL (2621 MVA IN 2009-10 & 3740 MVA IN 2014-15), DVVNL (2893 MVA in 2009-10 & 4110 MVA in 2014-15), PUVVNL (3934 MVA in 2009-10 & 7360 MVA in 2014-15.
2. The operational efficiency of all three SLPSEs are not satisfactory as MVVNL suffered loss 3465MVA and 24.44% of total capacity, DVVNL suffered loss 6957 MVA and 34.60% of total capacity & PUVVNL suffered loss 3382MVA and 24.25% of total capacity.
3. There is much difference between Metered and Unmetered customers as MVVNL has 32.43%, DVVNL 29.88% & PUVVNL 58.32% Unmetered customers in 2013-14 though there are some improvement in this concern in 2015-16.
4. On the basis of above observation it can be conclude that

H0 (a): The performance of power distribution companies in UP has not been satisfactory.

H0 (b): The planned capacity and required capacity are not matched of SLPSEs.

8. SUGGESTION & CONCLUSIONS

As on the basis of above description it can be concluded that Power Distribution Enterprises are the backbone of Uttar Pradesh economy but after analyzing and discussing their performance there may be given some suggestion as conclusions:

1. There should be improved distribution capacity in MVA by enforcing strict rules & regulations. Government should pass specific legislation in this regard.
2. Planned capacity should be matched properly with the required capacity.
3. Special cheap, flexible programs should be followed to issue new connection of electricity so that all the users may come under the control.
4. Percentage of unmetered consumers should be reduced by implementing special policy and meter should compulsory for all users.

9. LIMITATIONS OF THE PAPER

In present paper availability of comparable/uniform and reliable data has been a major problem for the study. At an aggregate level reliable (Audited) and uniform information is available in the CAG report of the State. The data is based on the audited accounts of the PSEs, which in several cases have a considerable backlog in term of time. The data provided by the Power Distribution Companies to the Commission are incomplete in several cases and are also provisional for various years. In several cases the Power Distribution Companies have either not furnished some items of the information called for. The present paper is based on the secondary data which are based on the publication of the different departments. Which some data are used as estimated or projected which reduce the actuality of the paper and work as main limitation. We faced a problem in data collection since the power distribution companies' officers do hesitation in providing information.

10. SCOPE FOR FURTHER RESEARCH

The present research paper is the study of the three power distribution companies functioning in Uttar Pradesh. The future research may attempt to analyse the various factors or reason behind the weak performance of Power Distributor Company like loss of energy billed, shortage of transformation capacity, loss of finance due to large number of unmetered consumers in Uttar Pradesh. The scope of the research is very wide and the detailed information will be presented in the further research by using various statistical tools in research work.

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