



KARNATAKA ELECTRICITY REGULATORY COMMISSION
BANGALORE

DISCUSSION PAPER

On introduction of differential retail tariff in Karnataka

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1. Introduction:

Under the provisions of KER Act 1999, Karnataka Electricity Regulatory Commission was established in November 1999. The Act, vested in the Commission the powers to regulate the activities of the power sector in the State. One of the objectives of the power sector reforms is to take measures conducive to the development and management of the electricity industry in the state in an efficient, economic and competitive manner to provide reliable quality power and to protect the interest of the consumers. Rationalization of electricity tariff is one other important objective.

The State Electricity Board (KEB) which was looking after transmission and distribution functions as well as a few generating stations in the state was unbundled and corporatised into a transmission & distribution company (KPTCL) and a generating company (VVNL), during 1999. After the corporatisation of KPTCL, it was unbundled into 5 independent companies in June 2002, with four distribution Companies (ESCOs) and KPTCL retaining Transmission and bulk power purchase functions. Subsequently, one more ESCOM namely CESCO has been formed by bifurcating MESCOM in 2005.

KPTCL and the ESCOMs are licensees of the Commission under the provisions of the KER Act 1999/ Electricity Act 2003. Considering the ERC and tariff filings, the Commission had determined the retail tariff payable by the consumers in its tariff orders December 2000 and May 2002. With the formation of the ESCOMs in June 2002, the Commission has

determined Bulk Supply Tariff (BST) and transmission charges payable to KPTCL by the ESCOMs in its order dated 13th November 2002. In the Tariff Order March 2003, the Commission has determined BST and transmission charges payable by the ESCOMs and also retail tariff payable by the consumers. In the Tariff Amendment Order December 2003, BST payable by the ESCOMs and retail tariff payable by a few categories of consumers was amended. The Commission continued a uniform retail tariff (Same tariff for each category of consumer across the State) to the consumers in all its above orders even after the formation of the ESCOMs in June 2002. The Commission has also determined uniform BST and transmission charges payable by the ESCOMs to KPTCL by allocating the government subsidy to different ESCOMs to cover the revenue gap.

As per the provisions of Electricity Act 2003, KPTCL cannot engage in trading of electricity w.e.f 10.6.2005. Accordingly, GoK has issued order on 10.5.2005, assigning the PPAs to ESCOMs in proportion to the share of each ESCOM in total energy consumption during FY05 and the PPAs of NCE projects have been assigned to the respective ESCOMs in which geographical area the NCE projects are located. With this assignment of PPAs, the power purchase rate (in place of BST) of the ESCOMs would not be uniform hereafter (from 10.6.05) as against a uniform BST in the past.

Historically, the Revenues and cost of supply are different in each of the ESCOMs areas. The revenue is depending upon the consumer profile of the ESCOM apart from variance in consumption pattern, quality of supply etc. The Cost of supply is different because of differences in network pattern, asset profile, employees strength, O & M practices, varying loss levels etc., apart from differences in the power purchase rate which has now arisen.

Keeping the objectives of the reforms in view, there arises a need to examine whether differential retail tariff could be fixed ESCOM wise instead of uniform retail tariff across the state now being followed.

This paper discusses the reforms objective, background for the existing uniform tariff in the state, tariff in other states, GoK subsidy and cross subsidy, present filing of ESCOMs, implications of a differential tariff, need for a differential tariff, and points for discussion.

2. Reforms objective:

The reforms in the power sector have been introduced primarily to address the ills of the power sector. The performance of SEBs has deteriorated over a period of time resulting in cross subsidies reaching unsustainable levels. The SEBs were unable to take independent decisions in regard to fixation of tariff due to political interference prior to reforms. An independent regulatory environment has been created to address this issue and to provide for distancing of governments from determination of tariffs. The reforms in the sector are intended to create an enabling atmosphere to invite private participation in generation, transmission and distribution of power.

While defining the roles and responsibilities of the unbundled entities, GoK in its circular dated 20th February 2003, had indicated that after the unbundling of the sector, the Government intends to take steps to invite private sector participation in all the newly formed ESCOMs and a privatisation strategy was evolved in order to address the issues relating to private sector participation in distribution. While the matter of inviting private participation is yet to take a definite shape, the existing entities in the present form are to function as independent entities and endeavour to become financially viable, efficient and self sustaining and can not depend on the cross subsidisation from other ESCOMs.

3. Background for the existing uniform tariff.

Historically, with one SEB in the State, uniform retail tariff across the State has been followed over the years. After introduction of power sector reforms in the State in 1999 also uniform retail tariff is being followed in the state.

However after formation of ESCOMs, since KPTCL had requested the Commission for determination of differential BST payable by ESCOMs to KPTCL there arose a need to examine whether the Commission shall fix uniform or differential BST to the ESCOMs. KPTCL in their Split ERC filing for FY04 had proposed differential BST for each of the ESCOMs. KPTCL and PWC (Consultants) presented their views in favour of a differential tariff stating that:

- (i) Losses should not be shown in the books of ESCOMs, as this would adversely affect the ongoing privatization process.
- (ii) Subsidies from Government has to be claimed and accounted in the books of KPTCL as it may become difficult to pass on such subsidies to ESCOMs in the event of privatization
- (iii) Private investors will perceive the subsidy risk as being higher if the same has to be claimed and accounted in the books of ESCOMs
- (iv) Differential bulk supply tariff approach is being used in a few other States.
- (v) If the differential bulk supply tariff is not charged, then in the event of profit being earned by any of the ESCOMs in future, it would not be possible to withdraw/ transfer such profits to loss making companies and therefore, differential higher bulk supply tariff could be charged to such companies.

After examining the above viewpoints and varying aspects, the Commission had decided in favour of a uniform bulk supply tariff stating

that a uniform bulk supply tariff properly reflects the average cost of supply in each of the ESCOMs and If differential tariff is used it reduces the average cost of supply for a few ESCOMs which will give wrong indication to the consumers as regards the cost of supply and may encourage consumers to claim tariffs based on such bulk supply prices.

4. Tariff in other states:

The Commission notes that out of the 29 states, 27 states in India have constituted SERCs. Further, 13 states as indicated below have unbundled/Corporatised the SEBs into DISCOMs so far.

- I) Orissa
- II) Andhra Pradesh
- III) Karnataka
- IV) Delhi
- V) Haryana
- VI) Rajasthan
- VII) Uttaranchal
- VIII) Uttar Pradesh
- IX) Gujarat
- X) Madhya Pradesh
- XI) Maharashtra
- XII) Assam
- XIII) Tripura

In all the above states, except in Maharashtra and Gujarat, a uniform retail tariff to the consumers is being charged across the state. In the states where unbundling has not taken place uniform retail tariff is being charged by the SEBs.

The following licensees are engaged in electricity distribution in the private sector:

- (i) NDPL in Delhi
- (ii) BSES Rajdhani Power Ltd in Delhi
- (iii) BSES Yamuna Power Ltd in Delhi
- (iv) Reliance Energy Ltd in Maharashtra
- (v) Tata Power in West Mumbai
- (vi) AEC in Gujarat

- (vii) SEC in Gujarath
- (viii) CESC in West Bengal
- (ix) NPCL in UP
- (x) WESCO in Orissa
- (xi) NESCO in Orissa
- (xii) SOUTHCO in Orissa

BEST in Maharashtra is also engaged in power distribution in Mumbai.

(Note: The above information is based on available information. This may be required to be updated)

Of the above, licensees in Delhi, Orissa and UP are following a uniform retail tariff through out the state.

In respect of the following licensees' area, the retail tariff charged is historically different from the retail tariff prevailing in the state owned SEB/ licensees area in the respective states.

- (i) Reliance Energy Ltd in Maharashtra
- (ii) Tata Power in Maharashtra
- (iii) BEST in Maharashtra
- (iv) AEC in Gujarat
- (v) SEC in Gujarat
- (vi) CESC in West Bengal

The notable point here is that wherever SEB/distribution companies are in the government sector, uniform retail tariff is being charged to the consumers across the state. In other places where private distribution licensees are engaged in distribution, the retail tariff charged to the consumers in their area of distribution are different from the tariffs in the SEBs area of distribution.

In Andra Pardesh the PPAs have been assigned to distribution companies. As per a recent press report (Hindu dated 16.6.05), differential retail tariff is being thought of across various distribution companies due to factors that include percentage of agricultural and rural consumers requiring subsidies, level of transmission losses depending on the distance, age of power station, type of fuel etc.

5. GoK Subsidy:

The GoK has been providing subsidy support to meet the revenue gap of the utilities. In the Financial Restructuring Plan issued in March 2001, GoK had envisaged providing revenue subsidy of Rs. 6759 Crores upto the year 2005. The details of subsidy as provided for in the FRP and actual subsidy released by the GoK are as under:

Year	Subsidy as per FRP (Rs.in Crs.) 1	Subsidy requirement (Rs.Crs) 2	Actual subsidy released (Rs.in Crs.) 3	Difference (Rs.in Crs.) 4 = 2 – 1
2000-01	709.00	1820.82	1246.42	1111.82
2001-02	1787.70	2231.30	1872.00	443.60
2002-03	1796.50	1903.86	1699.00	107.36
2003-04	1537.50	1623.29	1555.46	85.79
2004-05	928.30	1872.99	935.00	944.69

As per the FRP, the power sector was expected to have a turnaround in FY06 and thereby no subsidy was provided in the FRP from FY06. However, the subsidy requirement of ESCOMs is increasing year after year and as a result, the GoK in its revised MTFP, has provided for subsidy even beyond 2005. This goes to show that despite providing subsidy support, the ESCOMs are unable to achieve the financial self-sustenance and the dependence on government subsidy continues.

6. Cross subsidy (Average billing under the tariff category minus average cost of supply)

For determination of uniform retail tariff across the state, average cost of supply for the state has been considered. But in reality, the average cost of supply as well as average billing in respect of each category of consumers are different in different ESCOMs for the reasons discussed earlier. While the realization in BESCO & MESCOM is 93% and 82% of the average cost during FY05, in HESCO and GESCOM the recovery rate is 55% and 70% respectively for the same period.

The effect of applying uniform retail tariff is that the efficiencies and inefficiencies in the ESCOMs are not being reflected in the retail tariff charged to the consumers of that area. Since expenses and losses of all the ESCOMs are considered together for arriving at the average cost of supply for tariff determination under uniform tariff mechanism, the ESCOMs are not unduly concerned to improve their efficiencies since their tariff is not reflective of their own performance.

In the Budget Speech, during March 2005, the GoK has stressed the need to provide 100% metering and stringent anti-theft measures. The Government has also stressed the need to target the subsidy through "Purchase-Provider" model between GoK and ESCOMs. It is expected that the power utilities will submit bills to the Government on the basis of metering done at the consumption or distribution point. However the Commission is unaware of the implementation of such a scheme by ESCOMs.

7. Present filing of ERC and Tariff Proposal by ESCOMs based on uniform Tariff:

According to the present filing of ERC filing for FY06, the revenue gap of each of the ESCOMs after considering the subsidy from the GoK is as under:

(Rs. in crores)

Particulars	BESCOM	MESCOM*	HESCOM	GESCOM	Total
Revenue at existing rates	4173.99	1498.28	969.72	751.78	7393.77
Power purchase cost	4081.39	1585.35	1650.60	1208.23	8525.57
Other expenses	474.64	357.53	394.06	235.46	1554.29
Total ARR	4648.63	1925.17	2044.66	1443.69	10062.15
Gap without subsidy	460.60	384.51	1028.10	689.20	2562.41
Subsidy allocation	0	203.02	917.82	605.46	1726.30
Gap after subsidy	460.60	181.49	110.28	83.74	836.11
% Increase in Tariff proposed to cover the gap	11.04 %	12.11 %	11.38 %	11.12 %	11.31 %

* MESCOM Figures include CESCO figures

It is seen from the above that in order to cover the total revenue gap of ESCOMs to an extent of Rs. 836 crores, an overall tariff increase of 11.31% has been proposed under uniform tariff mechanism.

The Commission notes that the subsidy support from GoK is basically meant to meet the revenue gap arising out of the subsidized power to IP Sets and BJ installations as intimated by GoK earlier.

8. Tariff increase required based on Differential Tariff:

With the assignment of PPAs to ESCOMs (NCE PPAs to respective ESCOM) as per GO dated 10.5.05, the power purchase cost per unit of the ESCOMs would not be uniform. Further, as per the government policy, the subsidy is targeted towards BJ and IP sets. Factoring in both these aspects, the revenue requirement and the gap are reworked and indicated below:

(Rs crores)					
Particulars	BESCOM	MESCOM**	HESCOM	GESCOM	Total
Revenue at existing rates	4173.99	1498.28	969.72	751.78	7393.77
Power purchase as per allocation of PPAs to ESCOMs*	4098.90	1605.41	1652.01	1170.87	8527.20
Other Expenses	567.24	339.82	394.06	235.46	1536.58
Total ARR	4666.14	1945.23	2046.07	1406.33	10063.78
Gap without subsidy	478.11	404.57	1029.51	651.49	2564.04
Subsidy apportioned as per no. of BJ & IP set installations	585.54	322.07	423.68	395.01	1726.30
+Gap/-surplus after subsidy	-107.42	82.50	605.83	256.83	837.74
% Increase in Tariff proposed	-2.57	5.36	59.60	34.04	11.17

* Projected power generation from NCE sources in FY06 allocated to ESCOMs on the basis of actual generation in FY05 considering the location of the NCE for the purpose of this working only.

** MESCOM Figures include CESCO figures

The average cost of supply considering all the ESCOMs together is Rs. 3.98 per unit as per the ERC filing and the ESCOM wise average cost of supply considering assignment of PPAs to ESCOMs is as follows:

	Rs/unit
Average cost of supply considering All the ESCOMs together:	3.98
ESCOM wise average cost of supply Considering differential BST:	
BESCOM	3.71
MESCOM	3.92
HESCOM	4.29
GESCOM	4.69

It may be seen from the above, that if differential tariff is to be adopted considering the power purchase cost based on the assignment of PPAs by the Government and subsidy allocation based on number of BJ and IP sets to each of the ESCOMs, it will completely disrupt the present tariffs. While tariffs have to be reduced by 2.57% in BESCOM, it has to be increased by 5.36% in MESCOM, by 59.60% in HESCOM and by 34% in GESCOM. It is to be noted that the consumers of HESCOM and GESCOM would get tariff shock and would be adversely affected, which has to be addressed if differential tariff has to be adopted.

9. Need for a Differential Tariff:

From the above discussion it is evident that even after the introduction of reforms, there has been no perceptible change in the financial health of the ESCOMs. The subsidy support from GoK continues at a larger scale. Despite best efforts by the Commission, reduction of cross subsidies could not be achieved to the desired levels. In view of the assignment of NCE PPAs to the respective ESCOMs under GO dated 10.5.05, the Power purchase rate of the ESCOMs would be different. Further, the average cost of supply and cross subsidy percentages are different in different ESCOMs. Although the Electricity Act mandates reduction and elimination

of cross subsidies over a period, there is a long way to go. Whether cross subsidization amongst the ESCOMs could be reduced itself is a moot point.

The reasons for differences in the Revenue and cost of supply between the ESCOMs are many, a few of which are illustrated below:

- i. Consumer profile in each ESCOM area is different
- ii. Quality of supply varies
- iii. Load profile and consumption pattern are different
- iv. Asset profile
- v. Distribution losses vary widely across the ESCOMs- Projected distribution loss in FY06 in BESCO is 21.41%, MESCOM-20.24%, HESCO-26.37% and GESCOM-36.75%.
- vi. Power purchase rate would be different with assignment of NCE PPAs to respective ESCOMs based on geographical location as per GO.
- vii. Employee cost depends upon structure and number of employees in each ESCOM
- viii. Administration and general expenses practices
- ix. O&M practices and O&M contracts
- x. Interest on loans based on capital investment and depreciation on assets etc.,.

If uniform retail tariff is continued, a better performing ESCOM will have to continue to subsidize a poor performing ESCOM and such ESCOM will not have any incentive to improve its performance nor a penalty can be imposed by reducing the retail tariff in such ESCOM. There will be a great injustice to the consumers if the tariffs are not determined considering the performance of the respective ESCOMs. Continuation of such uniform retail tariff will also not attract private participation in distribution since the tariffs are not reflective of costs. Unless concrete steps are taken to fix the tariff, which gives economic signals and introduces competition among ESCOMs, the objectives of the EA 2003 cannot be accomplished. In the light of this, there is an imperative need to introduce differential tariff, so that the tariffs reflect the true economic performance of the ESCOMs. Introduction of differential tariff would enable the GoK to target the

subsidies to the needy ESCOMs/consumers and would eliminate cross subsidies between ESCOMs.

10. Advantages and disadvantages of differential retail tariff

Differential Tariff has the following advantages:

- a. The tariffs would be reflective of the costs and performance of the respective ESCOM.
- b. The consumers of better performing ESCOMs will be greatly benefited by reduction in tariff / reduced level of future tariff hike.
- c. Consumers of poorly performing ESCOMs will apply pressure on that ESCOM to improve its efficiency, which may yield better results.
- d. The tariffs in poor performing ESCOMs may also take a hit since only expenses and losses based on bench marks are allowed to be passed on to the consumers in the tariff. This may bring pressure on each of the ESCOM to improve its performance.
- e. Government may target subsidy to ESCOMs depending upon the performance of the ESCOM. Government may provide subsidy to different ESCOMs depending upon the consumption pattern of the subsidized category of consumers in each ESCOM area.
- f. This will lead to elimination of cross subsidies amongst ESCOMs
- g. This will encourage competition in the sector even under public sector regime.
- h. May focus on reduction and elimination of cross subsidies ESCOM wise.
- i. Motivates improvement in the performance of the ESCOMs.
- j. Above all, the ESCOMs would be self sustaining without having to depend upon other ESCOMs in the matter of tariff or revenues.

However, having differential Tariff may result in following disadvantages:

- a. The existing tariffs may be required to be raised substantially in HESCOM and GESCOM area leading to Tariff shock in certain categories. All along a uniform retail tariff has been followed. If tariffs are raised in these areas in order to introduce differential tariff, there may be severe protest by the consumers of that area. Implementation of differential tariff in a phased manner is one alternative.
- b. There may be a cry of discrimination amongst the same category of consumers across the state. This may require lot of convincing to the consumers, although it is permitted under EA 2003. Consumers may always argue that they are not responsible for the poor performance of the ESCOMs and therefore they should not be made responsible by levying higher tariff. One argument may be that such action will promote regional imbalance.
- c. Government may be required to provide higher subsidy for inefficient ESCOMs if tariffs in such ESCOM areas are required to be reduced.
- d. It may not promote private participation in poor performing ESCOMs. Such ESCOMs may get reduced attention which may further deteriorate its performance.

11. **Comments invited :**

Considering the above discussion, the Commission hereby invites comments from the stakeholders and experts on the following::

1. Is there a need to introduce differential retail tariff ESCOM wise ? If yes, whether it can be introduced in the present tariff revision pending before the Commission. If it has to be introduced in a phased manner, what should be the mechanism and the time frame within which it can be introduced?
2. In case differential retail tariff is introduced, is it prudent to reduce the tariffs in one ESCOM area and increase tariffs in other areas?

3. In case differential tariff is introduced in the present tariff revision exercise, how tariff shock to consumers can be reduced. What should be the mechanism that should be adopted to convince the consumers?
4. Any other relevant suggestions.

The Comments may please be furnished latest by 20th July 2005. The Commission intends to take a decision in the matter before completing the present tariff revision exercise.
