

REPORT OF
THE HIGH LEVEL COMMITTEE ON ESCROW COVER TO IPPS
TO
THE GOVERNMENT OF KARNATAKA
February 2000

February 24, 2000

Honourable Shri S.M.Krishna
The Chief Minister
Government of Karnataka
Bangalore 560 001

Dear Sir,

Submission of the Report of the High Level Committee
on Escrow Cover to IPPs

It is a pleasure to submit herewith the 'Report of the High Level Committee on Escrow Cover to IPPs.'

The Committee would like to place on record the co-operation and help extended by the Government of Karnataka and its agencies, and by the IDFC during the preparation of the Report.

The Committee recommends that in view of the importance of the issues involved, the Report be made public in its entirety at the earliest.

(Shri Deepak Parekh)
Chairman

(Dr. R. Narasimha)
Member

(Shri Jairam Ramesh)
Member

(Shri B.G. Rudrappa)
Member

(Shri B.K. Bhattacharya)
Member

(Shri C. Gopal Reddy)
Member

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I. THE CONTEXT OF THE COMMITTEE

Over the past years a number of Independent Power Producers (IPPs) have been encouraged by the changing energy policies in the state of Karnataka, and the current capacity under planning and on offer is substantial, and possibly even in excess of system demand (see Annexures 1(a) and 1(b)). Under arrangements being suggested currently by financial institutions, an escrow facility¹ is seen as necessary if IPPs are to attain financial closure. At the same time, it is recognised that escrows are an interim solution and they have significant implications for overall reform and restructuring of the power sector. The Government of Karnataka (GoK) constituted a High Level Committee to examine the principles of creating and allocating escrow capacity and the implications of using the mechanism in the context of power sector reform.

I.1. Terms of Reference

The High Level Committee on Escrow Cover to Independent Power Producers (IPPs) was constituted on December 27th, 1999, through Government Order No. DE 46 PPC 98, which is reproduced in Annexure 2. The terms of reference of the Committee are:

- (a) To scrutinise the escrow capacity of the Karnataka Electricity Board (now reconstituted as the Karnataka Power Transmission Corporation Ltd.) as assessed in various studies, and advise the Government on the existing and likely escrow capacity.
- (b) In relation to the various Power Purchase agreements and approvals given to power projects by IPPs in the State, to advise Government on the principles to be adopted in allocating the available escrow capacity.
- (c) To examine the wider implications of providing escrow cover to the IPPs in the light of the finances of the Board, its liabilities, and the on-going process of restructuring and reforming of the electricity sector.
- (d) To suggest ways and means to augment the escrow capacity of the Board to meet the demand of the IPPs already in the filed, keeping in view the need for the Board/ Corporation to meet the increased demand for power in the State.
- (e) To offer recommendations on such other matters germane to the issue of payment support mechanisms for the IPPs, which the Committee may find advisable to deal with.

I.2 Power Sector Reform Policy and the Terms of Reference

The on-going process of restructuring and reform of the electricity sector referred to in the terms of reference is guided by the Power Sector Reform policy of the GoK. As announced in 1997, it aims to establish a regulatory environment to provide reliable and high quality power and attract private investment in all areas of the electricity sector in order to release much needed state funding for priority social

sectors such as health and education. GoK has already constituted an independent State Electricity Regulatory Commission. Generation and transmission and distribution (T&D) had already been bifurcated in 1970. Very recently, GoK has decided to privatise the distribution system. Gok has entered into an agreement with the Government of India to proceed with the privatisation of the distribution system and a programme of system improvement according to a time-bound schedule. In the context of power sector reforms, the Committee arrived at the following understanding of its terms of reference. It first addressed itself to determining the extent of escrow capacity and measures to augment it. It has then examined the instrument of the escrow in the context of power sector reform. The Committee has then considered whether escrow is a suitable instrument of security, and the principles of its possible allocation between different IPPs. Finally, the Committee offers recommendations on other mechanisms for payment support to IPPs.

II. EXTENT OF ESCROW CAPACITY

An escrow facility involves dedicating a stream of revenues from specified customers or distribution regions into an escrow account maintained by an agent bank. The security mechanism of an escrow facility has been resorted to in India because the State Electricity Boards (SEBs) are perceived as bad credit risks, and thereby the lenders felt the need to segregate their cash flow. The guarantees extended by the State governments to the SEBs do not extend sufficient comfort to lenders. The escrow is also seen as a comfort against unreliable promoters of projects. In a system of competitive generation, the financial institutions would finance credible promoters. Under the current system, they are constrained to deal with the subset of promoters who have entered into power purchase agreements (PPAs) with the State Electricity Board. It is important to note that an escrow agreement is a tripartite agreement involving the buyer, the seller and the agent bank and is complete only when all three parties sign the agreement.

The Committee examined two studies in detail. These were the "Report of Karnataka Electricity Board's Capacity to Support IPP Projects (May 1999)", prepared by CRISIL Advisory Services (hereafter called the CAS Report), and the "Financial Projections, Module 1999-2000 to 2004-05 (December 1999)", prepared by the Financial Restructuring Group of Karnataka Power Transmission Corporation Limited (hereinafter called the KPTCL Report). It also studied a presentation made by Chase Manhattan Bank to KEB on "Escrow Capacity of the KEB". The methodologies of these studies are similar. All of them assume certain revenue realisations (based on assumed tariff revisions and collection efficiency), sales projections for different categories and reductions in T&D losses. These affect the revenues of KPTCL (formerly, KEB). On the expenditure side, certain assumptions are made on additions to supply. The net result of these exercises is to obtain the balance of government support required by KPTCL in order to meet its obligations. The assumptions and conclusions of the CAS and KPTCL studies for their respective base cases are summarised in Table 1 below.

II.1 Estimates of Escrow Capacity

The KPTCL study assumes that 311 MW of IPP capacity, out of a total of 2180 MW of new capacity, would be commissioned in order to provide the projected supply of 31890 MU2. As such, the implication is that the supportable IPP capacity is 311 MW if average realisations were increased annually by 3.9% and GoK provided Rs. 2243 crores of annual support in 2004-05. The CAS study assumed that the projected supply would be met through 1500 MW of IPP capacity, out of a total of 2472 MW of new capacity. However, further to the study, CAS made a revised presentation to the Committee at its first meeting on January 8th. The presentation was based on revisions to assumptions, taking into account developments since the submission of their 1999 Report. According to the revised presentation, the supportable capacity was only 500 MW (out of a total of 1800 MW of new capacity), even if it is assumed that the average tariff will be increased by 10.5% annually and an average annual support of Rs. 1600 crores will be provided by GoK.

Table 1: CAS (CRISIL) AND KPTCL, STUDIES

SUMMARY OF KEY ASSUMPTIONS AND CONCLUSIONS

	CAS (CRISIL) (Low/Moderate Impact)*			KPTCL (Business as Usual)		
DEMAND AND SUPPLY PROJECTIONS						
	1998-9	2004-5	GR (%)	1998/9	2004/5	GR(%)
Projected Demand (MUs)	25881	34716	5.0	26762	37962	6.0
Projected Supply (MUs)	20446	32980	8.3	22704	31890	5.8
Shortfall (%)	21	5	..	15	16	..
T&D Loss (%)	28.5	23.5	..	29.9	26.2	..
CONSUMPTION						
	1998/9	2004/5	GR (%)	1998/9	2004/5	GR (%)
Total Demand (MUs)	15130	26714	9.9	15905	23531	6.7
Irrigation Demand (MUs)	5903	11277	11.4	7008	11823	9.1
HT-Industrial (MUs)	2409	4757	12.0	2336	2680	2.3
HT: Irrigation Ratio	0.41	0.42		0.33	0.23	
REALISATION (RS/UNIT)						
	1998/9	2004/5	GR (%)	1998/9	2004/5	GR (%)
Average Realisation	1.93	3.73	11.2	1.92	2.42	3.9

Irrigation	0.19	1.04	32.9	0.24	0.63	17.5
HT-Industrial	4.79	7.26	7.2	4.40	4.94	1.9
HT: Irrigation Ratio	25.2	6.98		18.3	7.8	
Cost of Supply (Rs./unit)	2.18	3.62	8.8	2.39	3.44	6.3
Power Subsidy (Rs. Crores)	773	1369	10.0	793	2243	18.9
As % of Gross Fiscal Deficit	25.6%			26.3%		

*CAS's Low/Moderate Impact assumptions include moderate reductions in T&D loss and no increase in agricultural collection ratios. Further, in order to maintain comparability with KPTCL, CAS's demand figures have been adjusted to reflect consumption instead of demand by using the estimated shortfall and shortfall allocation rules given in their study.

KPTCL's Business as Usual projections contain the following assumptions:

(a) KPTCL has projected an availability of 31890 MUs during 2004/05, as compared to an estimated requirement of 37962 MUs. These projections suggest that the State will continue to suffer from shortage of power. However, the consumption of the irrigation pumpsets is shown to increase at an annual growth rate of 9.1%. This is because the balance energy available after the T&D losses and metered consumption is considered as energy consumed by the agricultural sector. In the alternative moderate and significant impact scenarios, the result of assuming an annual addition of 40,000 IP sets per year and a consumption per IP Set of 7242 units (As Annul Plan 1999-2000, instead of the existing consumption of 6210 units) result in a consumption level of 9968 MU. In addition, the pace of reduction of T&D loss is rather conservative as the estimated percentage T&D loss for the year 2004/05 comes to 26.2% as compared to 29.9% during 1998-99. A more optimistic scenario on T&D losses and a reduction in irrigation consumption would alleviate the shortage of power.

(b) If the existing restrictions in the form of load shedding and rostering on IP sets are discontinued, the possible increase in required capacity could have a serious impact on the rates payable by the consumers. The currently assumed average increase in revenue realisation is shown as 3.9%, which appears to be rather pessimistic. However, the regulatory commission may not allow significant tariff increases in case T&D losses are not reduced substantially.

II.1.1. Financial Consequences of New Capacity Addition

The Committee examined the effect of the new capacity addition to the grid that has taken place over the period April to September 1999. In 1998-99, only 39% of the energy supplied was metered. Moreover, in the period April to September 1999, although 1068 MU was added to the grid, metered consumption increased by only

169 MU, which further decreased the share of metered energy to 37%³. It must be emphasised that since only 37% of the energy is currently metered, the level of losses can be significantly different from the 30% of gross energy earlier estimated by KPTCL, and indeed is now intimated to be higher⁴. It is noteworthy that HT Industrial demand actually declined by 12.7% during April-September 1999 compared to the same period last year. As a result, even if more energy is made available to the system, the ultimate receipts from the sale of the additional energy, after accounting for losses and supply to subsidised categories, does not generate sufficient revenue to cover even the cost of power purchase, leave alone meeting the expenses of the transmission and distribution system. If the present trend, whereby only 16% of the additional energy supplied is metered⁵, is allowed to continue, the average realisation from the additional supply will have to increase to over Rs. 18 per unit just to meet power purchase costs, assuming energy is purchased at Rs. 3.00 per unit.

II.1.1.1. Specific Examples

The magnitude of this can be better appreciated if one considers specific projects⁶. As a first example, let us consider a 220 MW project fuelled by naphtha, with a 15 year PPA, which is coming on line around 2002-03. The gross financial outgo on account of such a project in its first year is estimated to be approximately Rs. 590 crores a year of which Rs. 240 crores would be the payment for fixed charges and the remainder would be the variable charge at a PLF of around 75%. On the revenue side, if we assume that 40% of the energy supplied is metered and billed at a relatively high average realisation rate of Rs. 3.61, this will generate only Rs. 209 crores, leaving annual net deficit of Rs. 381 crores, or nearly Rs. 32 crores a month.

Three ways of meeting this deficit are explored. First, from the depreciation allowance. KPTCL's entire depreciation allowance for 2002-03 is forecast at Rs. 395 crores. Thus, the deficit from such a relatively small project alone would consume almost the entire provision for depreciation. Second, by economising on establishment expenses. KPTCL's establishment expenses for 2002/03 is forecast to be Rs. 989 crores, implying a need to reduce establishment expenses by over 38%, if other expenses remained the same. Finally, by deferring payments to KPCL; who were paid an average of Rs. 98 crores per month, during April to December 1999, as against an average billing of Rs. 138 crores. If the Rs. 32 crores monthly deficit were to be met today, it would reduce KPCL's monthly receipts from the prevailing 71% to about 48% of billing.

Alternatively, as a second example, consider a similar project with only a seven-year PPA. The gross financial outgo would increase to around Rs. 650 crores, due to the increase in fixed costs. Since there would be no effect on revenues, this would increase the annual net deficit to around Rs. 440 crores or about Rs. 36 crores a month. Thus, the deficit would consume more than the entire provision for depreciation, or alternatively require a reduction in establishment expenses by about 44%. If it were financed by not paying KPCL, it would reduce their current

monthly receipts to Rs. 62 crores, i.e., to a mere 45% of billing.

In this context, it is useful to note that if the fully energy requirement projected by KPTCL, i.e., 37962 MU, is to be met, an addition of 2185 MW needs to be made to the existing capacity of 4142 MW (as of March 1999). Assuming an average price of Rs. 3.00 per unit purchased and 6 MU of energy per MW, the additional liability for 2185 MW will be of the order of Rs. 3933 crores, which is in excess of the total current revenues of KPTCL today.

II.1.2. Imbalance in the Current Tariff Structure

The other contributor to the parlous financial state of the energy sector is the imbalance in the current tariff structure (see Annexures 3(a) and 3(b)). Average realisation from energy supplied to irrigation is less than a fifth of the cost of purchase and just about a tenth of the total cost of supply, while industrial HT users are charged more than the cost of captive generation. This encourages Industrial HT users to leave the grid and skews the grid demand towards the subsidised categories, further depressing KPTCL's cash flows. Seen in the regional context among the southern states, Karnataka has the highest power rates for industrial and commercial users. As long as this continues, Karnataka will be at a competitive disadvantage.

II.1.3 Support from GoK

The Committee considered the feasibility of GoK to provide the projected levels of support, based on its existing fiscal situation. Currently, the support is provided in the form of the rural Electricity (RE) Subsidy, which is another description of the commitment of the State Government to meet the gap in KEB revenues to reach the mandatory 3% return. This support is provided in cash and in terms of adjustment to government dues such as debt repayment and electricity duty. The adjustment due to debt repayment is declining and is expected to be exhausted by the end of the current fiscal year. Therefore future support would have to be extended in the form of cash support. It is noteworthy that so far only Rs. 40 crores in cash subsidy has been released in this financial year. Furthermore, the required level of support from GoK has been increasing rapidly. During the year 1983-84m the RE subsidy claim was Rs.22.15 crores, and for 1984-85, the figure was Rs. 12.10 crores. These amounts, i.e., a total of Rs.34.25 crores remained, as `receivables' until 1988-89, though there was no RE subsidy claim during 1985-86 to 1988-89. The RE subsidy claims remained at moderate levels and by a combination of adjustments and cash releases, as late as the end of 1994-95 the `receivables' on this account were only Rs.0.70 crores. Since 1994-95, RE subsidy requirements have been generally going up and despite adjustments and cash releases, the receivables on this account were Rs. 255.98 crores at the end of 1998-99. In 1999-2000, `receivables' are likely to reach the staggering figure of Rs. 848 crores.

It is highly unlikely that GoK has the capacity to fund the power sector to this extent, especially when it is already running a gross fiscal deficit close to 5% of the State Domestic Product. One fourth of the gross fiscal deficit in 1998-99 was due to the

support extended to the power sector and this is expected to increase to one-third of the deficit in the current financial year, 1999-2000.

II. 1.4 Assessment of the Committee

In the opinion of the Committee, the central problem of the power sector in Karnataka is the inadequacy of cash flows from the sale of power. This inadequacy of cash flow stems from two primary reasons, viz., technical and non-technical losses within the system and imbalances and inadequacies in the tariff structure.

The calculation of escrow capacity presented before the Committee is based, assumptions that losses will reduce drastically, tariffs will be increased significantly every year, agricultural consumers will pay substantially more than they do today and the Government will pay large subsidies. Going by past experience, the Committee considers such assumptions unrealistic. But hard decisions will now have to be taken. The Committee notes that GoK has embarked on a power sector reform programme whose impact will take time to be felt. The assumption that existing revenue source can support new capacity, while future growth in revenue will meet existing commitments, is not supportable, in light of the decline in grid demand from Industrial HT users and the growth in demand from Irrigation and the lack of an effective action to reverse this trend. Even if tariffs are rebalanced, and this now depends largely on the State Electricity Regulatory Commission, the reduction Industrial HT prices required to attract them back to the grid would require concomitantly larger increase in irrigation tariffs or alternatively increased support from GoK, which does not appear to be forthcoming. Substantial revenue increase are thus not foreseen in the medium term without increases in irrigation tariffs and reduction in T&D losses. The consideration of the financial situation of KPTCL, in operational efficiency, the possibility of tariff REBALANCING and the state of GoK finances has led the Committee to the assessment that as long as the present situation continues, it is close to impossible to structure any kind of payment security mechanism for IPPs. The fiscal position of the GoK makes it unlikely that financial commitments by KPTCL to purchase energy from IPPs or other sources, if they are entered into, can be honoured. In the present situation, there is, in sum, no escrow capacity in Karnataka for the purchase of new power.

The Committee has been advised that the erstwhile Karnataka Electricity Board has executed bilateral escrow agreements with three projects, which total 351 MW. The Committee has noted that these agreements are not tripartite-agreements and do not have the signature of an identified Escrow Agent. In light of the determination that there is no escrowable capacity at this stage, the Committee is of the opinion that GoK should not proceed any further with regard to the escrow agreements with these projects.

II. ALLOCATION OF ESCROW CAPACITY

It is only after sufficient revenue streams exist that mechanisms can be considered to allocate those streams to different IPPs. As and when there is a credible revenue stream to support power purchase, there may be no need for the additional

security of an escrow mechanism. The consideration of principles of allocation of escrow is thus premature and possibly unnecessary. However, at this stage it is useful to enunciate two broad principles on which generation capacity should develop in Karnataka.

I.1 Least Cost Delivered Energy

The first is the principle of power generation with least-cost delivered energy to the consumer. This cost should include components such as cost of generation, transmission and distribution, metering etc. In order to ensure that the energy supplied is produced at least cost, it is essential to dispatch generators on a strict merit-order, taking into account the fixed and variable costs of each plant.⁷ Guaranteed energy off-take and deemed generation contracts imply that high costs are automatically and contractually passed through to the buyer, while they should instead keep plants from being dispatched, if their energy is not required.

I.2 Commercial Contracting

The second principle is that of full commercial contracting. All energy supply contracts entered into, including the continuation of existing arrangements with Government agencies as well as other consumers, should be on a commercial basis.

II.2.1 Moving Away from Existing Non-Commercial Arrangements

Currently, the public sector KPCL is paid a monthly sum negotiated between KPCL, KPTCL and GoK in part settlement of its energy dues from KPTCL. The balance is adjusted through tripartite arrangements between KPCL, KPTCL and GoK at the end of the financial year. This arrangement is possible only because of the non-commercial nature of the financial relationship between KPCL and KPTCL, which is unhealthy and detrimental to both parties. KPCL also tolerates this situations because it is owned by the GoK and not subject to the full discipline of commercial accountability. Full rectification of this situation is essential. As it has proved neat impossible to sustain a commercial relationship in an environment with public sector ownership of generation and distribution the Committee has been forced to the conclusion that increasing the extent of private ownership of generation is also inescapable.

IV. WIDER IMPLICATIONS OF PROVIDING ESCROW COVER

IV.1 Impact of Escrow Facility on Distribution Privatisation

The current practice is to identify specific revenue collection centres and arrange for the collections from these centres to be deposited into a separate account in an identified bank, i.e., the Escrow Agent. An escrow therefore transfers the primary claim on revenue stream from the Distribution Company to the IPP. In the context of privatisation of distribution zones, most of the privatised regions can be expected to have cash losses in the initial years. The negative effect of an escrow on the already low cash flow stream that would be received by the prospective buyer makes it

difficult to privatise a region that has been escrowed. Escrowing of specific zones thereby hinders the process of distribution privatisation.

IV.2 Impact of Escrow Facility on the Finances of SEBs

In theory, the sale of the extra energy pumped into the system by the new project is supposed to generate the revenue to allow such segregation without reduction in expenditure on some other item. In practice as is seen from the experience in Karnataka in the recent past (when 1068 MU was pumped into the system but only 169 MY\U could be metered and billed), the sale of the extra energy does not usually generate sufficient revenue to pay for itself. In such cases, the establishment of an escrow account would necessarily imply a reduction in expenditure on another account.

IV. 3 Legal Complications Arising from the Award of Escrow Facility

Given the large number of PPAs signed by the GoK, there are a large number of claimants for the escrow facility. The award of escrow to any group of projects will naturally disappoint the others, who have not been so favoured. Furthermore, since the escrow capacity varies over time, depending on the manner in which different assumptions are realised or not realised, it is eminently possible to extend escrow cover to a group of projects, only to find later that the extent of capacity was overestimated and that the cover would have to be withdrawn from some projects. This situation is ripe for legal complications, as Madhya Pradesh found to its chagrin.

IV.3.1 Experience with Escrow in Madhya Pradesh

Madhya Pradesh is the first state that tried to implement the escrow concept. In December 1997, out of 9 IPPs that had obtained techno-economic clearance from the CEA, the state government decided to grant escrow protection to 6 IPPs amounting to 3061 MW. The criteria used for selection were progress made, gestation period, fuel mix and grid location. Subsequently, the state entered into negotiations with these 6 IPPs for the escrow agreement.

In June 1998, following the re-estimation of escrow capacity of Madhya Pradesh Electricity Board (MPEB) at 2,561 MW the state government announced that it had decided that the least cost tariff should be the paramount criteria for deciding on escrow cover. On this basis, it excluded 2 of the 6 IPPs that had originally been identified as being escrowable. Both of these were liquid-fuel projects. Along with this, the state also announced that it was entering into negotiations with the remaining 4 (three coal-based and one hydel) for concluding an escrow agreement. In July 1998, 'aggrieved' promoters challenged the decision to reopen the PPA and short listing of projects for escrow cover by filing a petition in the High Court. After many tribulations, and nearly a year later, the High Court upheld the re-allocation process in June 1999. Two weeks later, an appeal was lodged in the Supreme Court. The hearings concluded in October 1999, and the Supreme Court delivered its judgement on February 16, 2000 upholding the allocation of escrow on least cost basis.

In the meantime, in December, CRISIL drastically revised the escrow capacity of Madhya Pradesh to 900MW, which is only 35% of the capacity previously estimated just over a year ago, thus signalling the need for further pruning of the short list. The fate of the projects short-listed earlier hangs in the balance.

IV. 4. Impact of Long-Term Contracts on Competition

In addition, the escrow facility for IPPs in Karnataka, as in other states, is also associated with long-term power purchase agreements, ranging from seven to thirty years. This is consistent with least cost delivered energy as distribution companies are prevented from accessing the most competitive supplier of energy, as they would be contractually bound to purchase power from the IPP. Conversely, an IPP would also not be able to market energy to its preferred customers. Customers will therefore not benefit fully from power sector reforms. In the context of transferring such contracts to a privatised distribution system, prospective private owners will be burdened with fresh long-term contracts, even where they are not a party to the decision.⁸ Fresh long-term contracts combining capacity and energy should therefore be entered into with great caution, and only when they are on extremely attractive terms. The economics of these new plants should be robust enough to be able to survive in the event a competitive market comes into being. Hence, the structure of the PPAs should enable electricity to be drawn from generators on a merit order basis.

V. AUGMENTATION OF THE CAPACITY TO MEET DEMAND

While there is no escrow capacity currently in Karnataka, there is also a need to meet the increases in demand for energy expected over time. The solution to this conundrum lies in enhancing the cash flows at the distribution end. Apart from tariff rebalancing, this would require reduction in T&D losses, complete metering, better collection efficiency and more efficient operation management. For reasons set forth below, the committee is of the opinion that this would require autonomous functioning of the energy sector along commercial lines, especially of the distribution function, which appears to be possible only if it is transferred to the private sector.

In the interim, till the hand-over of distribution, KPTCL must continue with its effects to improve its inherent efficiency, by reducing technical losses, containing theft and restraining administrative and O&M costs. Even at the currently estimated level of T&D losses of 30%, KPTCL can be expected to lose 8000 MUs during the year 1999-2000 MUs are saved by carrying out intensive system improvement works, which is not a difficult task to achieve, the effect would be equivalent to the setting up of a 320 MW plant requiring an investment of Rs.1300 crores. More importantly, there would be no recurring expenditures with respect to fuel cost. The investments needed for saving this quantum of energy will be far less than this amount. The unaccounted for energy loss could also contain a substantial element of theft. It is understood that there are around 200,000 irrigation pumpsets, i.e., 15% of the total, that are connected to its network in an unauthorised manner. This is yet another

area that KPTCL has to address itself. In addition, even though the staff strength has not been increased over the last ten years, the Committee is of the view that there is nevertheless scope to reduce staff in certain functions and to reduce O&M and administrative expenditure.

V.1 The Need for Privatisation in the Power Sector

V.1.1. Distribution

The only way to mobilise additional cash flow from the distribution system is to control both T&D (technical) losses and theft (non-technical losses) and to enforce a hard budget constraint on the Distribution Company. This is only possible when the owner of the distribution system bears financial responsibility for losses due to misinvestment (technical losses) or due to inability to control theft (non-technical losses). This unfortunately does not appear to be possible as long as the government owns the system, since the only available instrument, viz., administrative accountability, has proved insufficient to achieve the objective. The only credible manner is to transfer responsibility to private companies. The private sector is not a magical solution to all ills in the power scene, but it is inevitable since it is impossible to sustain commercial discipline in the public sector environment. The losses in a Private Distribution Company (PDC) directly impact the company's profitability and have to come out of private shareholder funds or from financiers who see such deficits as temporary initial losses. This provides a strong incentive for the PDC to improve revenue by controlling theft and undertaking cost-effective investments to reduce technical losses, which is unavailable in the public sector. The greater flexibility with respect to labour decisions in the private sector will also permit management to implement actions in a manner that would not be possible in the public sector. For this, it is essential that concomitant with this responsibility, the private management must also be given complete authority in all commercial decisions, subject to regulatory oversight due to the continuing monopoly status. GoK should provide all necessary infrastructure to the regulator to enable its profession and independent functioning. In addition, GoK must meet excesses of expenditure over revenue, which are incurred due to government-imposed subsidies, out of the general exchequer.

PRIVATE DISTRIBUTION IN INDIA

Privatised distribution is not an alien concept in India. In Karnataka itself, private licensees existed earlier in a number of areas such as Haveri, Gadag, Hubli-Dharwad and Belgaum. Private distribution licensees continue to operate today in the cities of Mumbai, Calcutta, Ahmedabad and Surat. Some of these licensees also own generating assets. For instance, Bombay Suburban Electric Supply (BSES) sources about 50 percent of its electricity requirements from its own plants (of 500 MW capacity). Similarly, the Ahmedabad Electricity Company (AEC) and Calcutta Electric Supply Company (West Bengal) own generating capacity of 550 MW and 945 MW, respectively. The fact that the tariffs of BSES, which caters to 19.29 lakh consumers in an area of 384 sq. kms., are competitive* and its distribution losses have remained between 11 and 12 percent over the past three years, aptly

underscores the superior performance of distribution under private ownership.

*BSES' average rates, excluding fuel adjustment charges, as of March 1999 are Rs. 2.24 (Residential), Rs. 4.13 (Industrial) and Rs. 4.85 (Commercial). KPTCL's realisations for comparable categories are Rs. 2.44 (AEH), Rs. 3.72 (LT-Industrial) and Rs. 5.32 (LT-Commercial) respectively.

V.1.2. **Generation**

Currently, KPCL does not receive regular payments for the energy it supplies, since its only customer - KPTCL - does not collect sufficient revenue for the energy it distributes. In the prevailing circumstances, any energy that KPCL supplies to the system only increases its losses, as it will supply energy even if it is not paid, unlike a private producer. GoK ownership of KPCL has thus weakened the commercial environment. KPCL has been an efficient project management organisation. However its ability to raise finances for further expansion are severely constrained because of the non-commercial environment in which it is forced to operate. KPCL has a role in the transition period as a joint venture partner in projects where the private sector has majority ownership and this role should be facilitated. Over the longer term, however, the disinvestment of government equity in KPCL needs to be considered.

As part of the unbundling process, the five generating stations belonging to the erstwhile KEB, viz., MGHE, Munirabad, Shivasamudram, Shimshapura and Yelahanka Diesel have been transferred to a separate entity called Visveswaraya Vidyuth Nigam Limited (VVNL). Since KPCL has the necessary expertise in generation and is owed a considerable sum of money by KPTCL, the hydro projects could be sold to KPCL to reduce this liability to KPTCL. This would also improve the required hydrological co-ordination between MGHE and SGS (Sharavathy Generating Station) by bringing these two stations under the control of a single agency. A similar argument holds for Shivasamudram and Shimshapura, as KPCL is likely to take up a seasonal hydel power project on the Cauvery, which will affect the generation of these two stations.

The diesel plant at Yelahanka should be sold in an open bidding process, where KPCL could compete along with others. This would result in further improvement in the financial position of KPTCL, and enable it to meet its long-term liabilities. As the distribution sector is privatised and begins to generate resources to permit financially sound arrangements for power purchase, the other existing KPCL plants will also gain in value. This addition to their value could be realised by selling them and the resources used to reduce GoK's fiscal burden and finance the unfunded liabilities in the sector, such as pensions. **It is imperative that GoK avoid the temptation to use such resources generated by privatisation to increase revenue expenditure.**

V.S. Tariff Rebalancing

The Committee considers the rebalancing of tariffs to reflect cost of supply to be a

necessary component of any solution affordable, reliable and quality power to the consumer. KPTCL should approach the regulator with a proposal for cost-reflective tariffs. Cost related prices would curtail investment in those off-grid solutions, such as captive plants, that are currently financially attractive **only** because of a distorted tariff structure. In case GoK wishes to continue subsidising sections of electricity consumers, there must be a credible, transparent and justiciable system of fiscal transfers to support the supply of subsidised energy. However, such a commitment, which must be explicitly provided for in the State budget, would involve additional demands on the over-stretched finances of GoK.

VI. COMMERCIAL VIABILITY OF THE POWER SECTOR

VI. 1. An Outline of the Reform Agenda

VI. 1.1. Energy Supply without Escrows and Long-Term Contracts for Energy

A view has been expressed in some sections that no additional energy supply is possible without the extension of escrow facility and long-term contracts for energy. Apart from questions on the financial sustainability of that strategy, the Committee is of the opinion that it is an incomplete position. The reform of the existing structure will reduce the current practice of government intervention at every level, which leads prospective investors to believe that they would be permanently subject to the whim of government and undermines their confidence.

The sales contracts of the IPPs with the state government and its agencies may not amount to much by way of real comfort to them as the available pie is not sufficient to meet the projected sales of all the IPPs or even a few of them. In place of the present market structure and incentives, which force IPPs and their financiers to try and get a piece of escrow capacity allocations, IPPs should be competing for the custom of private distribution companies and bulk consumers. The need is to develop a true IPP culture, a commercial culture that imposes financial discipline and makes subsidies transparent, through appropriate provisions in the state's Budget. It must, however, be recognised that this particular alternative has not yet been seriously offered anywhere in India.

The only way to create a sustainable and viable cash flow stream for any IPP is to increase the size of the pie through economic, flexible and time-dependent pricing of electricity and increased efficiency in metering, billing and collection. IPPs may then find that contracts with the privatised distribution companies or sales into a robust market are more bankable than their current take-or-pay contracts with the state-owned agencies.

VI. 1.2. Market Structure at the Conclusion of Reforms

The process of reform will lead to the establishment of a clear viable competitive framework that will transfer market risk to private investors, a risk that they understand, can control and are willing to accept. Private distribution companies will source energy from bulk suppliers or directly from private or public generation companies or their own power generation units, who will bear the credit and

market risk of their customers. To enhance competition, bulk customers of the distribution companies will be able to buy their power from other distributors or generators provided they pay for the costs incurred in the transmission of such energy. The least cost plants would then be determined as a result of the decisions made by distribution companies and bulk buyers and not by expert groups or committees. To ensure that the benefits of a competitive system accrue over the whole range of consumers from the small farmer to the big industry, the market structure must also allow for decentralised generation and distribution of power, especially in rural areas.

As a transmission utility and the system operator, KPTCL would be responsible for dispatch and system operations as well as other important functions such as carrying out the load forecast. Its primary revenues, however, would accrue from charges for using its transmission wires.

VII. MANAGING THE TRANSITION

The current year is likely to see the level of GoK support to KPTCL reach the staggering figure of Rs. 1200 crores. In the years ahead, this trend will increase unless the restructuring and tariff revision exercises yield quick results. In addition to the continuing subsidy burden, as a result of the reform process a number of liabilities that were hitherto not fully transparent have now to be explicitly provided for. GoK would have to finance the conversion of the currently unfunded liabilities of KPTCL into a funded liability and strengthen the balance sheet of KPTCL. These would involve provisioning for an estimated Rs. 3,000 crores. Private investors usually watch and see how the restructuring of the sector proceeds before committing investments. The GoK therefore needs to put in place a well-designed and sustainable reform process which sends out strong signals about its commitment to reform by instituting a firm timeline, in order to attract new power generation during the process of switchover to the new system. The GoK has to define the parameters of this process in a manner such that the benefits of reform reach all consumers, the subsidies are made transparent and funded through appropriate provisions in the state's Budget and the transition period is managed such that the State's growth does not suffer due to energy shortage.

VII. 1. Introduction of Competition

Competition is the long-term objective of power sector reform. Without the introduction of a competitive regime, the benefits of reform will be difficult to pass on to the consumers. Karnataka already has a wheeling policy in place but only with respect to captive power. As part of the reform policy, this needs to be strengthened, first by expanding this policy to provide for automatic permission to wheel power⁹ and then by moving towards an open access regime over a defined time period. There would be the issue of technical adequacy of the transmission lines, which would be determined by the regulator. This would establish a clear commitment to a competitive regime in supply as well as generation. A subsequent attempt to open up the grid, after the distribution companies have been sold

would generate strong resistance from the new owners, who purchased the company on the assumption that they would retain monopoly rights of distribution. It is thus essential to provide clarity at the time of sale to the prospective bidders for the private distribution companies with regard to the market structure and regime under which they could expect to operate.

VII.2 Privatisation of Distribution

The government has already announced its decision to privatise the distribution system. This requires a number of preparatory steps to be taken by KPTCL in particular and by the state in general. A professional consultant should be selected to assist in the implementation of this process. This process should aim at ensuring quick improvement in the service levels to consumers and putting in place a system whereby creditworthy private distribution companies can make independent arrangements for additional energy and alleviate the shortage of power for industrial growth.

VII.2.1 Subsidies and the Zoning Process

The Committee is conscious of the fact that subsidy for supply of energy to rural areas may have to continue for some more time. The key question is how these subsidies are to be funded; whether there should be a cross subsidy or whether subsidies should be transparently provided from the budget. There are weighty arguments for making the subsidies explicit. The government's decision on how the subsidy will be funded would be one of the key parameters that will determine the configuration of the private distribution system. A configuration that segregates urban agglomerations into separate distribution zones would necessitate transparent subsidies, while zones with more mixed consumer characteristics could sustain cross-subsidies. There are merit and demerits to both approaches. The Committee suggests that these be given careful consideration in the design of the privatisation process.

VII.2.2. Impact of Privatisation on Rural areas

There is a need for reliable and timely power in the rural areas and it is essential that these areas benefit from the reform process. The farmers, irrespective of the tariff fixed for them, must be assured of quality supply for fixed, if limited hours. At present, the rural feeders are subjected to load shedding as a demand management exercise, which result in a large number of disgruntled customers belonging to domestic, agricultural and industrial categories. The problems of supply in rural areas have been exacerbated because the erstwhile KEB viewed rural customers as low paying and unremunerative. Consequently, the technical parameters of maintaining a stable grid were compromised by overloading the lines, stations and transformers, which led to low voltage and frequent breakdowns. As part of the reform process, the endeavour of GoK should be to ensure that the required level and quality of service to these areas is provided at minimum efficient cost. The Memorandum of Agreement between GoK and the Government of India provides for a major programme of improving the efficiency of the distribution system. The

Committee underscores the importance of such a programme.

It is essential that the private suppliers have confidence in the subsidy flow from GoK in order to serve these areas. Innovative approaches must be adopted to the privatisation of these areas in order to ensure that these subsidies are being utilised in the most efficient manner, such as bidding out service in specific areas on a minimum subsidy basis. Such policies should also encourage arrangements between local decentralised generating sources and local distribution companies.

VII. 3 Mitigation of Energy Shortages

VII.3.1 Range of Demand Estimates

Estimates of unrestricted demand in Karnataka vary widely. At a Workshop organised at NIAS on January 14, 2000, different experts presented estimates from 1,000 MW to 10,000 MW of additional capacity required over the next five years. This is to be expected since the estimate varies depending on assumptions about extent of unmet demand, growth of industrial and agricultural sectors, growth and extent of captive capacity, price elasticity of demand, etc. One of the advantages of a market-based power sector is that the demand estimates would be made by developers and their financiers (who would be financially accountable for their forecasts) and not by planners (who now neither gain nor lose by mis-predicting demand).

VII.3.1.1 Consensus Estimates

The current energy consumption is estimated by the KPTCL at 15,906 MU per annum, which (given the T&D loss of 30%) translates into a gross energy demand of 22,704 MU. Compared to 1994-95 estimates (15,907 MU), there has been almost no growth in grid consumption of energy. This can be attributed to several factors, viz., growth of captive facilities, supply restrictions and the general nation-wide industrial slowdown of the recent past. It would be foolhardy to expect that this trend would continue into the future. Consensus estimates of power needed to meet unrestricted demand over the next five years are around 3,000 to 3,500 MW, in addition to the installed capacity in 1998-99, keeping in view the growth requirements of the state. In order to avoid a severe revenue shortfall, this would require significant alterations to the present tariff levels and administrative arrangements.

VII.3.2. Sources of Supply without Long-Term Contracts

The Committee discussed various other projects currently under development, including additions to the State's hydel capacity, with a view to assess the extent of supply that can be expected from projects that are currently in the pipeline. A number of these do not require escrow facility or long term energy contracts, and these should form the basis of energy supply in the interim, so as not to compromise the success of fundamental reform of the sector. The expected supply from these sources is presented below.

**TABLE 2: SOURCE-WISE FIRM CAPACITY ADDITION ASSUMED BY KPTCL (MW)
1999-2000 TO 2004-05**

Source	KPCL Hydel	KPCL Thermal	Central Units	Inter-State (Eastern)	IPPs	Total Addition
Addition	370	210	667	125	208	1580
YEAR-WISE FIRM CAPACITY ADDITION ASSUMED BY KPTCL (MW)						
Year	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Addition	519	279	239	147	198	198

These projections do not include the development of the seventh unit at Raichur, which would add another 210 MW, or the Bidadi joint venture project (200 MW). In addition, the strengthening of inter-grid connectors by PGCIL and the recent order on Availability Based Tariff (ABT) by the Central Electricity Regulatory Commission (CERC), which includes provisions for the trading of surplus capacity and energy, will allow for inter-state purchases of energy without long-term commitments. In addition, apart from assumed supplies from the Eastern grid, more energy can also be expected from the Western grid. A number of possible hydel projects are also not included in these projections. These include about 800 MW of cheap hydel power that could accrue to the state as part of an accord with Tamil Nadu in the Cauvery Basin and another 300 MW that could get commissioned at Almatti in the Krishna Basin once an accord with Andhra Pradesh and Maharashtra is reached. It is in Karnataka's interests that work on these projects start quickly.

In addition to these traditional sources, there is also the possibility of more localised and renewable energy capacity coming on stream. Right now, this capacity, e.g., small hydel, biomass, wind and co-generation, is around 200 MW. Studies done by the Karnataka Renewable Energy Development Corporation indicate that the capacity could be doubled over the next five years. This potential needs to be harnessed.

VII.3.3 New Projects

New IPPs need the assurance of access to creditworthy customers, including transmission and distribution entities, instead of the virtually non-existent escrows and guarantees from financially over-stretched state governments that they are currently offered as comfort. They must have sufficient confidence in GoK's proposal to reform and restructure the sector. Promoters of low-cost generating projects will continue with development of their projects. These would be those that are confident of being dispatched under a merit-order regime, which would include, for example projects with strong low-cost fuel linkages, such as fuel from by-products, and smaller co-generation facilities. The introduction of competition for larger customers would also enable industrial and commercial consumers to access power at competitive rates. This would mitigate the possibility of a situation, where the growth in Karnataka suffers due to energy shortage.

VII. RECOMMENDATIONS OF THE COMMITTEE

This section brings together the recommendations of the Committee, based on the

deliberations summarised in the body of this Report.

VIII.1 Do Not Escrow Distribution Regions

The current financial position of KPTCL inescapably leads the Committee to the conclusion that escrow capacity is unavailable at this time. Escrows are also undesirable since they jeopardise the proposed privatisation of the distribution system. In addition, the past experience with escrows has been extremely litigation-intensive. The GoK, as owner of KPTCL, should not therefore provide escrow cover to any IPP.

VIII.2 Expedite Privatisation of the Distribution System

The Committee is of the opinion that enhancement of revenue in the energy sector would require its autonomous functioning along commercial lines, especially of the distribution function, which appears to be possible only if it is transferred to the private sector. The Committee considers it essential in the prevailing circumstances that the process of transferring the distribution system to private ownership be completed as soon as possible. This process should aim at ensuring quick improvement in the service levels to consumers and putting in place a system whereby creditworthy private distribution companies can make independent arrangements for additional energy and alleviate the shortage of power for industrial growth.

Prospective private owners should ideally not be burdened with fresh long term contracts, since they are not a party to the decision. Fresh long-term contracts combining capacity and energy should therefore be entered into with great caution, and only when they are on extremely attractive terms. In order to ensure that the energy supplied is produced at least cost, it is essential to structure these contracts to enable the dispatch of generators on a strict merit-order.

VIII.3 Programme of Compulsory Metering

Economic, flexible and time-dependent pricing of electricity and increased efficiency in metering, billing and collection is necessary to improve revenue flows. GoK should ensure that KPTCL embarks upon a programme of compulsory metering of all major sub-stations and 11 kV feeders, metering of all existing customer installations, compulsory metering of all new connections, energy auditing of installations of 1000 KVA and above and time of day metering for HT customers.

VIII.4 KPTCL To Ask the Regulation for Cost-Reflective Tariffs

Keeping in view the need for revenue, efficiency in operations and transparency in the achievement of social objectives, there must be a credible, transparent and justiciable system of fiscal transfers to support the supply of subsidised energy, through appropriate provisions in the state's Budget. KPTCL should expeditiously make appropriate submissions to the regulatory commission to institute cost-reflective tariffs for the energy sector. GoK should provide all necessary infrastructure to the regulator to enable its professional and independent

functioning.

VIII.5 Private Sector Investment in New Generation Capacity

Currently, the consensus estimates of power needed over the next five years to meet unrestricted demand, keeping in view the growth requirements of the state are around 3,000 to 3,500 MW, in addition to the installed capacity in 1998-99. The GoK therefore needs to put in place a well-designed and sustainable reform process which sends out strong signals about its commitment to reform by instituting a firm timeline, in order to attract new power generation. GoK should continue to invite private sector to invest in new generation capacity provided there is no escrow cover, but could consider offering state government guarantees for a short and limited time period. Private sector producers must be given sufficient confidence in GoK's proposal to reform and restructure the sector.

The development of KPCL project at Raichur and its joint venture at Bidadi, which are at an advanced stage, could continue according to their respective current schemes. The project conceived at Vijayanagar should, however, be developed with majority private sector ownership. All future development of thermal capacity in Karnataka should be in the private sector. However, in case capacity additions from IPPs is inadequate, then GoK may take steps to strengthen KPCL to meet this requirement in the interim.

VIII. 6 GoK to Consider Privatisation of Existing Generation Capacity

One fourth of the gross fiscal deficit in 1998-99 was due to the support extended to the power sector and this is expected to increase to one-third of the deficit in the current financial year, 1999-2000. GoK would also have to finance the conversion of the currently unfunded liabilities of KPTCL into a funded liability and strengthen its balance sheet. Keeping in view the need to raise funds to meet its commitments in the power sector, the GoK should also consider disinvestment of the existing plants of KPTCL and KPCL, for which different models are available, It is imperative that GoK avoid the temptation to use such resources generated by privatisation to increase revenue expenditure.

Initially, the diesel plant at Yelahanka should be sold in an open bidding process. However, given their hydrological inter-dependence, the hydel projects of KPTCL/VVNL could be sold to KPCL to reduce the liability of KPTCL with respect to KPCL.

VIII. 7 Renewable Energy Policy

Location-specific and load-specific generation using predominantly renewable fuels must be encouraged. A policy for private generation and distribution of electric power on a decentralised basis must therefore be put in place expeditiously. Such a policy should also encourage arrangements between local decentralised generating sources and local distribution companies.

VIII. 8 Announce an Automatic Wheeling Policy

In order to facilitate the introduction of a competitive regime and ensure that the benefits of reform are passed on to the consumers, the existing wheeling arrangement for captive power should be expanded further into a policy to extend open access to the grid for all generators within a defined time frame. This policy and the time frame for implementation should be announced early in the reform process.

IX. CONCLUSION

The success of the strategy outlined in this report will depend on the credibility of its implementation. The Committee has advised against the interim solution of providing escrow cover to IPPs in the expectation that the privatisation of distribution that has already been announced will create viable entities for the purchase of power from IPPs. The successful privatisation of distribution will need the GoK not only to take several correct decisions but also implement them in the correct sequence. Failure of the process will mean that Karnataka will continue to suffer from energy shortages and industry will continue to avoid it as an investment destination. In this context, a number of issues need to be considered and decided upon carefully, but also urgently by GoK, so as to prepare a clear road map for the process. The Government of Karnataka must not squander this opportunity to foster the development of a competitive and dynamic power sector that can deliver affordable, reliable and high-quality electricity supply for its citizens.

Annexure 10

STATUS OF PROPOSED IPPs

(as of No 30, 1999)

PROJECT TYPE	TOTAL (IN MWs)	PPAs SIGNED	PPAs INITIALLED	NON-PPA PROJECTS & PPAs NOT SIGNED
MOU	6169	1490	1015	3664
BARGE MOUNTED	695	585	110	0
BID	418	418	0	0
WHEELING AND BANKING	260	0	0	260
TOTAL	7542	2493	1125	3924
AS A % OF TOTAL	100%	33%	15%	52%

NOTES

1. Of the PPAs signed, escrow agreements are signed for 351 MW, viz., Tannir Bhavi (Barge Mounted:) of 220 MW; Atria (Bid-route) of 103 MW and Rayalseema (Bid-route) of 27.8 MW.
2. Of 3664 MW in MOU-route for which PPAs are not signed, there is no fuel linkage for 800 MW, and CEA has not extended March 98 deadline for submission of detailed project report for 1420 MW.
3. Under Bid-route projects, 147 MW of capacity is not included, as it was either terminated or given termination notice.

DETAILS OF IPPS UNDER DIFFERENT CATEGORIES

PPAs SIGNED (IN MWs)				
Sl. No.	NAME OF THE PROJECT	ROUTE	FUEL	MW's
1	Cogentrix	MoU	Coal	1013
2.	Hassan	MoU	Naphtha	189
3	Mandya	MoU	Naphtha	164
4	Peenya	MoU	Naphtha	108
	SUB-TOTAL	MoU		1474
5	Tannir Bhavi	Barge	Naphtha	220
6	Mulki (Euro India)	Barge	LSHS/FO	195
7	Bengre (Smith Cogen)	Barge	Naphtha	170
	SUB-TOTAL	BARGE		585
8	Atria	Bid	Naphtha	103
9	Rayalaseema	Bid	LSHS/FO	28
10	Others (6 Nos.)	Bid	Naphtha/ LSHS/FO	434
	SUB-TOTAL	BID		434
	TOTAL			2493
PPAs INITIALED				
1	Nagarjuna	MoU	Coal	1015
2	Universal Water (Kumta)	Barge	LSHS/FO	110
	TOTAL			1125
PPAs NOT SIGNED AND NON-PPA PROJECTS				
1	Chamalapura (Mysore)	MoU	Coal	1000
2	Vijayanagar (KPCL)	MoU	Coal	500
3	Bidadi II (Pulikeshi)	MoU	Naphtha	500
4	Raichur (Kutub Power)	MoU	Coal	420
5	Bijapur (KEI Energy)	MoU	Coal	350
6	Gokak (Weco Power)	MoU	LNG	300
7	Almatti (Chamundi)	MoU	Hydel	297
8	Jindal Traceable*	W&B	Coal	260
9	Bidadi (KPCL)	MoU	Naphtha	200
10	Nanjangad (IPS Power)	MoU	Naphtha	97
	TOTAL			3924

* The first unit has been synchronised with the KEB grid on 17-02-99.

GOVERNMENT ORDER NO. DE 46 PPC 98, Bangalore, dated 27-12-1999**PREAMBLE:**

The provision of payment support mechanism to Independent Power Producers generally consists of direct payment, Letter of Credit through bank, and creation of escrow accounts. In addition, State Government guarantee, and in the case of the 'Fast Track' projects approved by Government of India, counter-guarantee of the

Central Government are also provided. While escrow facility is a pre-condition of the financing institutions, Government of India have also made the escrow a requirement for counter-guarantee for the 'Fast-Track' projects.

The provision of escrow cover has several implications to the State Electricity Board. Escrow, though the third layer of support, result in sequestering a dedicated stream of revenue from specified customers or regions, into an escrow account maintained by an agent bank. This has implications for the Board's finances. The capacity to provide acceptable escrow cover has to be assessed carefully, keeping in view the various payment liabilities, both existing and newly arising. Escrow conditionalities in the escrow agreement have to be clear as to the events which permit invocation of escrow, and they should be such as to take care of the interests of both the IPP and the Board. Allocation of escrow capacity which is determined by the Board's financial state, is to be made in a transparent manner and in the best interests of the objective of increased power availability in the State. On the other hand, increased private sector generation would call for increased escrow capacity in the Board. There is thus need to implement measures which will augment the escrow capacity to match the increasing purchase of power from IPPs, so that the private sector will be re-assured about its investment.

In Karnataka State, a total of 5400 MW of generating capacity in the private sector has been approved through bid and Memorandum of Understanding routes. The projects include barge-mounted, and land-based projects, using a variety of fuels. The projects are in different stages of progress.. Several PPAs have been signed with escrow provision. At this stage, the issue of escrow facility has assumed grant importance.

Government of Karnataka have decided that the State requires the deliberations of a High Level Committee to look into all aspects of the escrow cover to IPPs. Hence the following order.

ORDER

1. Government of Karnataka hereby constitute a High Level Committee on escrow cover to IPPs. The Committee shall consist of the following:
 1. Shri Deepak Parekh, Chairman, Infrastructure Development Finance Corporation, New Delhi- Chairman
 2. Dr. R. Narsimha, Director, National Institute of Advanced Studies, Bangalore - Member
 3. Sri Jairam Ramesh, Economist, New Delhi - Member
 4. Sri B.G. Rudrappa, former Chairman, Karnataka Electricity Board - Member
 5. Chief Secretary to Government - Member
 6. Principal Secretary, Finance Department - Member

7. Principal Secretary, Energy Department - Member Secretary.

2. The Terms of Reference of the Committee shall be as follows:

I. To scrutinise the escrow capacity of the Karnataka Electricity Board (now re-constituted as the Karnataka Power Transmission Corporation Ltd.) as assessed in various studies, and advise the government on the existing and likely escrow capacity;

II In relation to the various Power Purchase agreements and approvals given to power projects by IPPs in the State, to advise Government on the principles to be adopted in allocating the available escrow capacity;

III To examine the wider implications of providing escrow cover to the IPPs in the light of the finances of the Board, its liabilities, and the on-going process of restructuring and reforming of the electricity sector;

IV to suggest ways and means to augment the escrow capacity of the Board to meet the demand of the IPPs already in the filed, keeping in view the need for the Board / Corporation to meet the increased demand for power in the State;

V To offer recommendations on such other matters germane to the issue of payment support mechanisms for the IPPs, which the Committee may find advisable to deal with.

The Committee is requested to furnish its report within one month.

By Order and in the name of
The Governor of Karnataka

Sd/-
P.S.S. Thomas
Principal Secretary
Department of Energy, Govt. of Karnataka

Annexure 3(a)

**A COMPARISON OF ELECTRICITY CONSUMPTION IN THE AGRICULTURAL SECTOR IN
KARNATAKA AND SELECTED STATES (1998-99)**

	SHARE OF AGRICULTURE IN TOTAL SALES (%)	SHARE OF AGRICULTURE IN REVENUE (%)	REVENUE REALISATION (PAISE/UNIT)
ANDHRA PRADESH	34	2.8	16
GUJARAT	39	3.5	20
HARYANA	44	13.3	55
KARNATAKA*	44	5.4	24
KERALA	4.4	1.4	55
MAHARASHTRA	33	3.9	25
TAMIL NADU	27	0	0

*Actuals for the year 1998-99, as reported in "Financial Projects Module: Period from

1999-2000 to 2004-05", of the Karnataka Power Transmission Corporation Ltd., 1999.

Source: Annual Report on the working of State Electricity Boards and Electricity Departments, 1999, Planning Commission.

Annexure 3(b)

A COMPARISON OF ELECTRICITY TARIFFS IN KARNATAKA AND SELECTED STATES

Category	APSEB (From 1.1.99) Rupees	MSER (From 1.9.98) Rupees	TNEB (From 7.1.2000) Rupees	KPTCL (From 15.7.98) Rupees
Domestic				
100 units (2 in months)	80	84	80	145
Cost/unit in Rs	0.80	0.84	0.80	1.45
AEH				
200 units/month	330	428	335	410
Cost/unit	1.65	2.14	1.68	2.05
Commercial				
100 units (2 in months)	275	275	395	553
Cost/unit in Rs	2.75	2.75	3.95	5.53
LT Industries				
10HP-1000 units/month	3350	2600	3475	2570
Cost/unit	3.35	2.60	3.48	2.57
HT Industries				
1000KVA-300000 units	1177000	1200000	1200000	1230000
Cost/unit	3.92	4.00	4.00	4.10
HT Commercial				
500KVA-100000 units	476000	481000	490000	490000
Cost/unit	4.76	4.81	4.90	4.90
IP Consumers				
upto 5HP	Rs 150/HP/Annum (upto 3HP)	500/HP Annum	Free. Under self financing scheme	300/HP/Annum
	Rs 250/HP/Annum (3HP to 5HP)		EC-50p/unit of Rs250/HP/Annum	
Above 5HP and upto 10HP	Rs350/HP/Annum (for 5-10 HP)	750/HP/Annum		80ps/unit subject to minimum of Rs500/HP/annum
Above 10 HP	Rs400/HP/annum	1000/HP/Annum		

Note.

The consumption of various categories have been taken on the basis of the average consumption of installations. The tariffs are different for different slabs.

ENDNOTES

1. In the case of the power sector, an escrow facility involves dedicating a stream of revenue from specified customers or distribution regions into an escrow account maintained by an agent bank. The IPP has first claim on these funds and only surpluses are transferred to the Distribution Company.
2. These are additions to capacity existing as of 1998-99. The 311 MW of IPP energy is assumed to be commissioned by the Rayalseema, Atria, Tata and Jindal projects. The remainder of the capacity addition is from Raichur Units 5,6 and 7, hydel capacity from Gerusoppa, Kabini, Kadra, Kodasalli and Mallapur and others. Additions are also assumed from Shivasamudram and MGHE, Jog. Finally, apart from additional supplies from the Eastern grid, increased supply is expected from Central stations at Kaiga, Neyveli, Ramagundam and Talcher.
3. In comparison, the Committee understands that 52% of the energy is metered in Tamil Nadu and 54% in Maharashtra.
4. A portion of this loss is technical and unavoidable, but a substantial portion is due to other factors. Preliminary data available with the regulator reveal that actual losses are far higher than what is being currently assumed by the KPTCL. In Orissa, measured and audited losses turned out to be double of that initially reported. It is noteworthy that in Karnataka, even T&D losses of 30% of gross energy equivalent to 6799 MU, translates into lost energy of approximately 1100 MW of thermal generation capacity.
5. A portion of the difference between the metering of total energy (37%) and that of additional energy (16%) is possibly due to the fact that the increase in energy availability during the period under consideration coincided with a dry spell, which may have resulted in excessive consumption in the unmetered agricultural sector. To that extent, this could be a seasonal phenomenon. On the other hand, levels of T&D losses in many metered areas in the districts are significantly above the reported state average.
- 6 The gross financial outgo for sample projects with a fifteen year PPA and seven year PPA are based on the calculations for the Bidadi and Tannir Bhavi projects respectively, as estimated by CRISIL Advisory Services. The CRISIL projections assume a US inflation rate of 2% p.a., an Indian inflation rate of 8.5% p.a. and rupee depreciation at 6.37% per annum. The realisation rate of Rs. 3.61 per unit is the realisation assumed for AEH_LT2 category by the KPTCL, in its significant impact scenario, which assumes tariff increases every year.
- 7 Until a power market where generators bid on a single price is not established, alternative methods for determining the merit-order to dispatch may need to be considered.
- 8It is possible here to question whether the lack of long-term contracts is discordant

with the development plans for central stations, which are supposedly being built based on committed demand requirements from States. This is precisely the nub of the problem. In a situation where the power sector, especially its distribution system, is being privatised, the State should not be committing demand on behalf of prospective private distribution companies. Neither should NTPC be building plants purely because a State has committed its demand. The large efficiently run pithead plants that they are building will in any event be dispatched in a competitive market based merit-order system. Even without the State committing itself to buy energy, the central stations can reasonably expect that private distribution companies, as and when they come into being, would be eager to contract for their power. It would be for NTPC then decide whether it would be commercially wiser for them to sell into the market instead of contracting with the distribution companies.

9 The wheeling of energy will not earmark inexpensive sources of energy for specific customers. A generating company will sell to a specific customer or group of customers in preference to the bulk supply or distribution companies only if it receives a higher price or greater reliability of payment.