STRENGTHENING INFRASTRUCTURE: POWER SECTOR REFORMS- SOME VIABLE PROPOSALS FOR KERALA

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Abstract

It goes without saying that the problems confronting the State Electricity Boards (SEBs) in India are just internal to them, and hence what the system requires is not any market-oriented restructuring, but an essence-specific reform that can remove the impediments that stand in the way of the SEBs' improved performance. It is in this light that we propose some viable measures of reform meant for the Kerala power sector, covering all the stages of its functioning. Since the problems haunting the power sector start from the very first stage of capacity expansion planning itself, we suggest, to start with, a simple method of electricity demand projection for Kerala and discuss its implications. Then we discuss in detail some viable measures of reform for the Kerala power sector for its efficient functioning in the execution of expansion plans and operational performance.

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1. Introduction

The power sector in India has been under fire for a long time for its deficiencies and dysfunctionings. A number of factors have been at work behind these problems. The State Electricity Boards (SEBs), though statutorily required to function as autonomous service-cum-commercial corporations, have in effect been functioning as promotional agencies of the Governments in the pursuit of their socio-economic policies and hence have never felt the requirement to break even or to contribute to capacity expansion programs. This unaccountability culture in turn has led to gross inefficiency at all levels – technical, institutional and organizational, as well as financial, which in turn has got reflected in avoidable cost escalations. This in the face of an irrational and uncompensated subsidised pricing practice has left the SEBs in general with negative internal resources. At the same time, the traditional sources of investment funds – Government loans and subventions – have been fast draining, and the so-called 'fiscal crisis' has facilitated the ushering in of the ideologies of restructuring. Funds have now begun to flow into the Indian power sector from a number of leading international financial institutions on stringent conditionalities of restructuring. What was once in the realm of a vertically integrated public sector monopoly undertaking has now become functionally unbundled and independent corporations/companies in some of the States and the move is on in some other States. Though Kerala remained to a good extent impervious to the incursions of such agencies upon the structure of the electricity Board till a year back, clear signs of a surrender have now appeared along with the change of guard in political power and ruling ideology. Thanks particularly to the politically surcharged consciousness of Kerala, unlike in most of the other States, there has also emerged an informed platform, though still scattered and nascent, for response and reaction.

It goes without saying that the power sector cannot survive, given the deficiencies and dysfunctionings. It should however be stressed that we have already shown that the problems confronting the SEBs are just internal to them, and hence what the system requires is not any market-oriented restructuring, but an essence-specific reform that can remove the impediments that stand in the way of the SEBs' improved performance (Kannan and Pillai 2002). It is in this light that we propose the following viable measures of reform meant for the Kerala power sector, covering all the stages of its functioning. Since the problems haunting the power sector start from the very first stage of capacity expansion planning itself, we suggest, in the next section, a simple method of electricity demand projection for Kerala and discuss its implications. The third section proposes some viable measures of reform for the Kerala power sector for its efficient functioning in the execution of expansion plans and operational performance, and the last section concludes.

2. Electricity Demand Projection for Kerala

Demand forecasting in the context of a developing country beset with black outs and brown outs becomes highly uncertain (for a case study on the Kerala power system, see Pillai 2001). To the extent that the demand forecast has nothing to do with the capacity expansion planning on a bounded budget as well as with the actual materialised capacity additions in the system, the very exercise becomes futile, except as some routine liturgy. The widening gaps between the actual consumption and the forecast levels (even with the revised lower ones of the 15th Annual Power Survey (APS) or of the KSEB-State Planning Board), in the last few years in Kerala prove this point. Accurate demand forecasting is relevant as well as essential only in a growing system under an efficient management directed by a government of determined political will. This notwithstanding, forecasts under such circumstances, however, do serve a good purpose of quantifying (through the gap between forecast and the actual) the unsatisfied demand, the possible extent of the shortage.

Pillai (2001) argues, based on the quantitative results obtained for the Kerala power system, that it is high time we questioned the inappropriate, pedantic, practice of linear regression mapping for trend extrapolation not only for the unit root problems, but also when similar results can be generated by means of much simpler methods, for example, growth rate based projections. Note that the projections from semi-log (i.e., exponential) trend extrapolation model and simple and logarithmic AR(1) models are in fact (constant) growth rate based ones.

Useful short-term projection can be had from simple annual growth rates (percentage deviation over previous year) of electricity consumption. The method can be modified by accounting for the effect on consumption of possible growth of the direct causatives such as number of consumers and connected load. Below we suggest one of such models:

$$\ln C_t = \varepsilon_{CN}\, r_N + \ln C_{t-1}$$

where $\varepsilon_{CN} = \Delta \ln C / \Delta \ln N$ is the elasticity of consumption (C) with respect to number of consumers (N) or consumption intensity factor and r_N is the growth rate of N. The above relation is in fact an identity only. This follows since $r_N = \Delta \ln N$. Note that the relation also amounts to one period (compound) growth expression: $C_t = C_{t-1}(1+r)$, where r is the compound growth rate of consumption and $(1+r) = \exp(r_C)$, where $r_C = \Delta \ln C$.

The model can be modified to include the effect of connected load (of electrical appliances) also by rewriting ε_{CN} as $\varepsilon_{CN} = \varepsilon_{CL}\varepsilon_{LN}$, where ε_{CL} is the consumption intensity with respect to connected load and ε_{LN} is the load intensity of the customers. Moreover, the expression resembles the ‘explained’ part of a random walk with drift.

Consumption intensity of the power customers in general in the State was quite elastic (much more than unity) in normal years. It even went up to more than 2.5 during the two years of 1966-68 when the Board became liberal in giving new connections following the commissioning of the Sabarigiri project, and more than three in 1984-85 and 1988-89 immediately after the 'crashes' of 1982-84 and 1986-88. These years saw great leaps in electricity consumption (the growth rates being between 20 – 33 per cent over the previous year) of a fast-growing number of customers. However, as energy export picked up, the consumption elasticity fell below unity; the 'informal' constraints on internal electricity use, covertly imposed in order to boost export show, continued till the draught year of 1982-83; growth in new connections was also checked during most of these years. Once the export frenzy has subsided, consumption now grows subject only to the combined constraints of inadequate capacity and monsoon failure, eased to some extent by heavy imports. And the consumption elasticity in the recent years has been well above 1.5, the growth in new connections being about 7 per cent.

In forecasting electricity demand using past data, especially in Kerala, one should be very much wary of the supply-constrained low-range of the past consumption series. Two periods in this time series can be distinguished when the inadequate supply constrained the demand to a minimum – one due to the generally recognised effect of the prolonged and severe drought since 1982-83, coupled with the inadequate generating capacity, and the other due to the less recognised effect of the covertly boosted energy export especially since the mid-1970s. Though export of perceptible quantum started after the commissioning of Sabarigiri project in 1966 and 1967, it was not at the cost of the internal consumption of energy, as evidenced by the growth of the parameters over the 11 years from 1965-66 to 1976-77, when Idukki project (phase 1) was put on line: number of consumers and connected load as well as internal energy consumption in the State all grew at an annual compound rate of about 10 per cent during this period. Generation grew at a rate of 12.8 per cent, and total energy sales at 12.3 per cent; and energy loss at 8.1 per cent per annum.

After the commissioning of the Idukki project (phase 1), the scenario fast deteriorated; energy export picked up in an attempt to boost the 'power surplus' image of the State; the system contrived to constrain the internal energy consumption to a minimum. It grew at an annual rate of just 6.4 per cent during 1976-77 to 1981-82 (the eve of the drought period) against a growth rate of 13 per cent registered in the number of consumers and 9 per cent in connected load. Generation increased at a rate of 11.9 per cent and total sales at 11.7 per cent, while energy loss at a higher rate of 13.8 per cent per annum.

Though the export drives ceased with the onslaught of the drought since 1982-83, the supply constraints on consumption have still remained, now due to the inadequate generating capacity and hydro-fuel supply. Consumption has over the 17 years grown since 1981-82 along with the number of consumers and connected load at an annual compound rate of 6.9 per cent, while generation at just 1.9 per cent, heavy imports compensating for the fall in generation.

Thus the past electricity consumption series in Kerala contains the effects of two periods: a period of almost normal, unconstrained, consumption till 1976-77, and a period of supply-constrained one thereafter; the latter period remains further sub-divided into two: the initial period of export drives and the later period of drought. Similarly, the series of the number of customers (as well as of the connected load), as a direct determinant of electricity consumption, also remains normal till 1981-82 and constrained thereafter. Hence, any attempt to project and forecast electricity demand in Kerala using time series data must take into account these facts that determine the behaviour of the series.

Based on these observations and using the above relationship, we attempt here to project electricity consumption in Kerala in two scenarios: constrained and unconstrained ones from 1977-78 onwards. We assume a consumption elasticity of unity in both the models. In the constrained consumption model, number of customers is assumed to grow (r_N) at the historical rates as obtained from the actual time series till 1998-99, and at 7 per cent per annum thereafter. In the unconstrained model, on the other hand, r_N is taken from the

Actual and Estimated Electricity Consumption in Kerala

	Electricity Consumption (in Million Units)				
	Actual	Projections			
		Constrained	Unconstrained	14th APS	15th APS
1976-77	2137.3	2137.3	2137.3		
1977-78	2331.3	2325.60	2325.60		
1978-79	2419.3	2552.34	2552.34		
1979-80	2384.4	2938.11	2938.11		
1980-81	2767.4	3496.69	3496.69		
1981-82	2911.5	4101.46	4101.46		
1982-83	2839.98	4452.78	4532.81		
1983-84	2703	4662.19	5009.53		
1984-85	3376	5032.52	5536.39		
1985-86	3776	5455.87	6118.66		
1986-87	3697	5955.45	6762.16		
1987-88	3626.5	6340.65	7473.35		
1988-89	4387	6735.06	8259.32		
1989-90	4794	7347.20	9127.96	6701	
1990-91	5331.86	7965.07	10087.96	7326	
1991-92	5596	8558.28	11148.92	8008	
1992-93	5838.55	9113.87	12321.46	8686	
1993-94	6234.16	9648.83	13617.32	9409	8567
1994-95	7027.69	10279.15	15049.47	10169	9383
1995-96	7414.62	10923.35	16632.24	10998	10116
1996-97	7020.74	11490.33	18381.46	11893	10921
1997-98	7716.23	12181.76	20314.66	12861	11770
1998-99	9182.89	13225.77	22451.17	13908	12666
1999-2000	9812.88	14184.75	24812.38	15040	13617
2000-01	10319	15213.26	27421.92	16264	14632
2001-02	8667.91	16316.35	30305.91	17588	15756
2002-03		17499.41	33493.21	19020	16890
2003-04		18768.27	37015.72	20565	18106
2004-05		20129.12	40908.70	22243	19410
2005-06		21588.64	45211.10	24053	20808
2006-07		23154.00	49966.00	26011	22099
2007-08		24832.85	55220.97	28228	23557
2008-09		26633.44	61028.61	30418	25112
2009-10		28564.58	67447.04	32894	26770
2010-11		30635.74	74540.51		28537

actual series up to 1981-82 only, and an annual growth rate of 10 percent is assumed thereafter. The two scenarios, along with the actual consumption series and the 14th and 15th APS forecasts are given in the Table below. Notice that our constrained projection series is only marginally different from the 14th APS series, except for a few of the later years, during which our estimates are close to the 15th APS series; from 1995-96 onwards, our constrained series lies between the 14th and 15th APS series. It is a very significant result, considering the much simple method we have used to estimate it.

The energy consumption estimates in the unconstrained scenario, on the other hand, is much higher than the 14th APS series. For 1998-99, the 14th APS estimate (13908 MU) is only 62 per cent of our unconstrained estimate of consumption (22451 MU), and for 2009-10 (32894 MU), about 49 per cent only (67447 MU). Evidently, the two consumption estimates (constrained and unconstrained ones) may be taken as the lower and upper limits of the 'actual market' demand. Assigning appropriate weights to the two scenarios, we can have a weighted mean series to represent this market demand.

Now, assuming 60 per cent load factor, the constrained consumption estimate for 2001-02 implies a maximum demand of 3104 MW, which, accounting for 35 per cent loss factor, entails an *available* capacity of about 4191 MW. The total *installed* capacity of the State in that year is reported to be 2601.2 MW only (Government of Kerala 2002: 134).

3. Some Practical Measures of Reform

Kannan and Pillai (2002) maintain that the problems haunting the Kerala (or in general Indian) power sector are only internal to the system, and hence the reform measures are to be in the nature of remedial exercises meant to remove the problems that stand in the way of the SEBs' improved performance. These may be classified into short-term measures of crisis management and long-term steps for power sector development, as follows.

A. Short-term measures

At present, the Kerala state has a total installed capacity of 2601.2 MW, of which the KSEB accounts for a capacity of 2032 MW (including two diesel plants and a wind farm), about 78 percent. However, the firm power capacity of the hydro (and wind) power system is only 831.7 MW, enough to meet a demand for about 20 MU a day, against an actual (constrained) daily consumption of about 50 MU (including T & D loss). The contribution of the two high-cost diesel power plants of the KSEB is only 2 to 3 MU. The remaining is accounted for by energy purchase – often more than 30 per cent of the gross available power. The excessive dependence on energy purchase and the consequent cost burden could be reduced in a number of ways of operational efficiency and commitment on the part of both the KSEB and the government. These are:

1. Take immediate and necessary steps to complete and commission at the earliest all the projects entangled in time overruns. These are minor projects like Malankara, Chimony, Chembukadavu, Urmi, Kuttiady Tail Race, Kuttiady Augmentation, and Lower Meenmutty and the diversion schemes of Kuttiar, Vadakkepuzha and Vazhikkadavu, works on which were started in the late 1980s. Once completed, they will add to the system 417.5 MU of energy potential. The mini hydel project, Chimony, works on which were suspended following a High Court stay order obtained by the contractor of the electrical works in 1993, should also be saved at the earliest by moving the court for vacating the stay order. This, in our view, might be an instance of ransoming the larger public interest for some personal motives.

2. Start construction works on the already approved projects like Athirappally, Kuttiady additional extension, Neriamangalam extension and others as well as the 14 micro hydel schemes under Chinese collaboration, with a total installed capacity of nearly 400 MW. Caution should be exercised against any room for possible time and cost overruns; the construction contracts should be so structured as to provide for making the contractors liable for stringent penalties in case of non-performance such as time overrun. The LDF government (1996-2001) was reported to have contemplated of taking some steps in this direction in the case of the Athirappally project by initiating to institute in the contract penalty provisions for delay. This should be instituted and strictly adhered to and extended to all

other projects. The savings in time and other resources will also be enormous. This ready-to-start project should therefore be implemented forthwith along with the above-mentioned expansion projects.

3. Uprating, renovation and modernisation of all the old projects, especially Pallivasal, Sengulam, Poringalkuthu, Neriamangalam and Sabarigiri, that have been under consideration for a long time should immediately be taken up and pushed through for completion at the earliest. Similarly, uprating and extension of small plants (Kuttiady, etc.) to utilise surplus water during rainy season will also increase energy availability. Measures should be taken to clear the silts accumulated in these reservoirs that limit their capacity (e.g., Idukki, Pallivasal, etc.) and to prevent further silting (afforestation, etc.).

4. The KSEB has at present three diesel plants (at Brahmapuram Kozhikode and Kasaragode) which are in general utilised incredibly below capacity (often in the range of only 10 to 40 per cent) on account of the much higher cost of generation. It is high time that the KSEB refrained from such imprudent practices of wasteful planning and mismanagement at least in view of scarce resources.

5. An enhanced share of power from the Central pool and its regular and constant delivery should be ensured.

B. <u>Medium/Long-Term Measures</u>

1. The only source for power generation generously available to Kerala is water. About 40 per cent of the estimated 4500 MW of hydro potential of the state has already been tapped. The development of the remaining sites is, however, beset with clearance difficulties due to environmental concerns. Those projects which do not face objections on environmental grounds - for instance, Mananthavady and Kerala Bhavani – but remain locked up in objections in terms of inter-state disputes, should be taken up for clearance. Both the government and the KSEB

should refrain from such unwise wild goose chase such as environmentally sensitive projects like Pooyankutty.

2. With no known sources of fossil fuels, Kerala state has to depend on imported fuels for thermal power development which is also constrained by non-availability of suitable sites for major thermal plants, especially of coal, thanks to fragile nature of the coastline and high density of population, thereby confining the choices to plants based on cleaner fuels. Kerala should strive for an early access to LNG grid and LNG-based power plants. The state government should lobby for early implementation of the proposed LNG terminal at Kochi and the laying of pipelines to Kayamkulam in the South to benefit the NTPC project there and to Malabar in the North.

3. In addition, the following solutions merit attention for the improved performance of the state power system:

Improved technical efficiency:

(i) Though hydro-plants are in general less prone to forced outages (FO), some of the plants in Kerala are afflicted by very high FOs (e.g., Panniar, etc.). Regular and scheduled timely maintenance along with full and proper repairs will ensure higher availability. KSEB should revamp its standards, system and organisation for proper maintenance of its plants.

(ii) The 'wasteful' gap between installed capacity and firm power or dependable capacity in Kerala is now about 48 per cent. This gap should be bridged (for full capacity utilisation) by enhancing the firm power capacity through augmenting water supply to the existing reservoirs. In planning and implementing future projects, care should be taken to avoid such over-capitalisation; augmentation schemes should be planned and executed simultaneously with the parent project. This could save considerable resource.

(iii) Check the tide of time and cost overruns. The government should see to it that the future projects are completed in time, without time and cost overrun. Future construction contracts should be so structured as to stipulate the condition that legally binds the contractor to compensate the Board for any delay.

Improved T & D Efficiency:

(iv) The long-term objective should be to reduce the T and D loss to 10 percent. This could be achieved by enhancing transmission capacity, replacing defective meters, effectively checking theft of energy and regular maintenance of the network. Anti-theft squad should be compulsory earmarked ‘quota’ and strictly policed to prevent collusion; administer incentive schemes also.

Efficiency in Management:

(v) Computerised scientific inventory control should be introduced on the basis of a thorough study of the existing system, which is haphazard in management of all aspects.

(vi) Energy audit is another area that calls for urgent attention. Though the need for it has been felt for a long time, no step, whatsoever, has been taken so far. Energy audit presupposes energy accounting; it can effectively check unaccounted-for transit losses. A scientific and comprehensive energy accounting and audit need to be instituted at each and every node in the feeder network in the whole power system so that the non-technical leakages are identified and plugged.

(vii) The KSEB is to gear itself up to undertake cost efficient measures. Cost of energy supply can be substantially reduced on a number of fronts. Burden of power purchase cost can be lessened by improved operational efficiency –

higher availability (reduce forced outage rates), larger inflow (more augmentation schemes), minimum T & D loss and auxiliary consumption, etc. About 20 percent reduction in per unit cost can be expected on this count (Kannan and Pillai 2002).

(viii) Over-manning (too many 'general' and 'long' posts) in establishment and administration (E and A) along with a shortage of technically skilled personnel is the bane of any power system, and sadly this is the case of the KSEB. Trimming the excess staff in establishment and administration can reduce per unit supply cost by about 10 percent (Kannan and Pillai 2002).

(ix) At the same time, it should be ensured that there is adequate supply of services of technically skilled personnel such that repair and maintenance works are minded and mended in time. There must also be a mechanism to uprate and up-to-date the technical skill of the personnel.

(x) Allowing 1:1 debt-equity ratio can check accumulation of unpaid interest charges (due to government) and make the balance sheet look healthy (on the stipulation that a reasonable return is ensured on the equity). This can bring about a reduction of about 12 percent in the unit cost of supply through reduced interest charges (Kannan and Pillai 2002).

These measures, if properly applied, can be shown to bring a commercial profit of Rs. 121 crores (as in 1997-98) to the KSEB, instead of a commercial loss of Rs. 521 crores, at the ruling average revenue (Kannan and Pillai 2002). Given the vast scope for cost minimisation, clamours for tariff increases lose their justification.

(xi) Along with such cost-effective measures, there is an urgent need to apply scientific tariff structuring on the basis of such efficient costs. It should also be ensured that lifeline tariffing with prompt government compensation mechanism also is structured in such a way that the additional costs from such equity-based subsidisation never interfere with operational efficiency.

(xii) Just tariffing is not sufficient. It should be ensured that the sales revenue these tariffs yield is collected regularly in time so that it could be used for further capacity expansion without going in for additional loans, after simply writing off a fraction of the arrears every year as bad debts. This necessitates universal spot billing, and strict inspection for possible collusion of the KSEB officials with the errant customers. For this, the 'collection centres' should be made strictly accountable for their monthly 'quota' through both coercive and incentive stipulations. Similarly, there has been an uninterrupted practice of non-payment of energy bills by almost all the government institutions; this practice should be strictly stopped and all the dues collected in time.

Organisational efficiency:

(xiii) This is central to the improved functioning of the KSEB. Necessary steps should be taken to convert the Board into an autonomous corporation as under the Electricity (Supply) Act, 1948. However, such a mere restructuring by nomenclature is not enough. The fundamental requirement is autonomy; governmental intervention should be done away with fully in its day to day affairs, including appointments. At the same time, the Board should subserve the welfare policies of the state (rural electrification and subsidised power to weaker sections) for which the government should compensate it promptly. An independent regulatory authority should be formed to co-ordinate, direct and watch all the functionings in a transparent manner, with checks and balances on a platform of public hearing. This will help dispel the impression being created by sectional interests that the proposed regulatory body is intended to be only a tariff-fixing/raising machinery. Ensuring the efficient functioning of the Board should be the objective of the regulatory body. In such an efficiency environment, cost increases, if any, can be justified only on account of factors external to the functioning of the Board.

(xiv) Continuity of management by top personnel at the policy making level is another important factor. Appointments at higher levels be made based on selection, and the selected official with proven ability and integrity should have at least 2 to 5 years service till superannuation. Besides, incentive-based measures be taken for professionalisation of management.

(xv) It goes without saying that there is an urgent need to stem the rot in work culture (X-inefficiency) through superior selection procedures, linking the terms of job continuity and remuneration to productivity and accountability clauses and periodic evaluation of the performance. To achieve these, a package of incentives for performance and disincentives for non-performance be instituted.

4. Summing Up

Administering such measures for improvement in the technical, organisational and financial management could certainly win the system a comfortable footing on its own. This could in turn dispense with the need for the irreversible and disastrous restructuring that is not only incapable of solving the real problems, but fraught with dangerous implications threatening the very social coherence. One of the disastrous consequences of private sectorisation comes from the fact that a private enterprise system necessarily works on exclusion principle. The vast scope for lodging all sorts of large-scale rent seeking and corruption costs in over-capitalisation results in inflated supply costs that can exclude a sizeable proportion of consumers with limited purchasing power. Higher incidence of exclusion would be one of the deleterious social costs of private sectorisation in a poor country like ours, leading to increasing or excessive inequality, both individual and regional, and is likely to result in a loss of community and social coherence.

This frightening fact now prompts us to consider the implications of equity-efficiency trade off involved in initiating measures for improvement of performance in the power sector. Though in theory nationalisation of a public utility ensures both efficiency *and* equity, in practice both have suffered in the context of power supply in India. Government interference in the name of ensuring social welfare has put considerable constraints on efficiency which in turn have, in accumulation, threatened the very equity issues, and therefore, made government *non-intervention* a necessary condition for the system's survival. However, equity considerations perforce entail state intervention *a la* rural electrification and subsidised/free power supply to the poor. Hence the significance of the need for qualifying the demand for government withdrawal from the power sector affairs: as already mentioned, government should actively intervene so as to engage the public utility in cross subsidisation and rural electrification for equity purposes, and it should adequately compensate the utility then and there. At the same time, it should desist from rent-seeking pursuits of populism it has been practising over time that really cost the society dear. Equity involvement by the state is indispensable in a poor country like ours, where the majority poor are left with no option, and where the produce is accessible only to the few rich. For example, a rich household has the capability for the personal services of inverter or gen-set, which the poor are not at all entitled to; similarly, a big industry can have arrangements for cogeneration/captive power, which a small fry cannot even think of. In such a context, the state is duty bound to provide the poor with cheaper power in an effort to uplift their condition. It is here the role of the state is called for.

However, the beneficial significance of the private sector participation in power generation should have a say in designing the development plans. Entry of the private power producers (PPPs) should be facilitated in a transparent competitive environment to ensure the selection of least-cost options by the watchful regulatory authority, who should further structure the provisions for the conduct of the chosen PPPs. On the other hand, no private interests should have any hold on the sales end; that is, by no means the distribution sector be privatised. Collective interests could be safeguarded and fulfilled for common objectives of development with equity only by the vehicle of public sector provisions. The present dispensation of distribution of power can be restructured in a more direct administration of collective responsibility at local levels through co-operatives and municipalities. This will in fact enhance and sustain the significance of decentralisation of democratic power, with the direct involvement of the local consumers in distribution activities. And such direct involvement alone can rid the society of feelings of alienation that lie at the heart of moral hazard effects and the consequent x-inefficiency. It is in facilitating this that a state realises its meaning. By shirking its social responsibilities, a state ceases to exist in essence. What is required in this light is a strong political will to stand up to and tackle the problems that are only internal.

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