

# PROCEEDINGS OF THE GOVERNMENT OF KARNATAKA

**Subject: Karnataka Power Reforms - New IPP Policy reg.**

## **READ:**

1. G.O. No. DE 14 PSR 99 (Part III) dated 8-9-2000.
2. Proceedings of the third meeting of the Steering Committee issued vide No. DE 17 PSR 99 dated 20-10-2000.
3. G.O. No. DE 14 PSR 99 (Part III) dated 31-10-2000.
4. Proceedings of the fourth meeting of the Steering Committee issued vide No. DE 43 PSR 2000 dated 19-12-2000.

## **PREAMBLE:**

In the G.O. dated 8-9-2000 read at (1) above, a five member Official Group comprising of the following members was constituted by the Government to look into all aspects of IPPs and advise on the policy to be adopted with regard to them.

(1) Principal Secretary to Government, Energy Department	Chairman
(2) Principal Secretary to Government, Finance Department	Member
(3) Secretary to the Chief Minister	Member
(4) Managing Director, KPCL	Member
(5) Chairman and Managing Director, KPTCL	Member

In the third meeting of the Steering Committee on Power Sector Reforms held on 17-10-2000 under the Chairmanship of the Chief Secretary to Government of Karnataka, [and as per the proceedings of the said meeting read at (2) above], it was decided to reconstitute the Official Group on issue of IPPs by including the name of Sri B.G. Rudrappa, former Chairman, KEB, as Technical Member of the Group. It was also decided that the reconstituted Official Group would expedite their study and give their recommendations by November 2000. Accordingly the Committee has been reconstituted vide order dated 31-10-2000 read at (3) above. The Committee after several rounds of discussions and meetings recommended a New IPP Policy to be adopted by the Government. The draft IPP Policy as recommended by the Committee was also placed before the fourth Steering Committee Meeting held on 14-12-2000 and the same has been recommended for approval of the Government. Hence, the following order.

## **GOVERNMENT ORDER NO DE 14 PSR 99 (Part III) BANGALORE DATED 8TH JANUARY 2001**

In the circumstances explained in the preamble, Government are pleased to approve the New Independent Power Producers (IPP) Policy for the power sector as appended to this order.

**BY ORDER AND IN THE NAME OF  
THE GOVERNOR OF KARNATAKA**

**(B.K.SRINIVASA RAO)  
UNDER SECRETARY TO GOVERNMENT  
ENERGY DEPARTMENT**

**GOVERNMENT OF KARNATAKA**  
**Subject: Formulation of a new IPP Policy for the Power Sector.**

**PREAMBLE:**

**1.0** Karnataka is one of the most progressive states in India, Bangalore, the State's Capital is called the Silicon Valley of India & has drawn the attention of the whole world, particularly in the field of Information Technology. Government of Karnataka (GoK) has already initiated measures for strengthening infrastructure facilities and creating an atmosphere for rapid industrial development in the State, thereby improving more employment opportunities and enabling rapid economic development.

**2.0** Power Sector is the most vital for economic development of any State/country. The State visualizes an annual GDP growth of at least 8%. To achieve this adequate power availability is essential. For the Indian situation the electricity: GDP elasticity ratio is 1.5. This means that the power requirement should grow at the rate of 12% per annum. However the ratio may undergo some change depending upon the nature of activities that contribute to GDP.

**3.0** Government of Karnataka is of the view that the existing structure of the power sector is inadequate to satisfy the criteria of efficient management of power production and supply, bringing down T&D losses to international standards, enhancing the quality of supply and rendering good service to the consumers. Hence, the Karnataka Electricity Reform Act, (KERCA) has been enacted in 1999. The salient features of the Act are:

- (1) Constitution of Electricity Regulation Commission.
- (2) Corporatisation of the erstwhile Electricity Board and formation of several distribution companies,
- (3) Privatisation of distribution companies; and
- (4) Augmentation of generation through Independent Power Producers (IPPs).

**4.0** Reform process has been initiated and the following steps have been taken:

- (1) Karnataka Electricity Board has been dissolved and in its place a Corporation called Karnataka Power Transmission Corporation Ltd., (KPTCL) has been constituted.
- (2) Karnataka Electricity Regulatory Commission (KERCA) is already in place and is examining the tariff proposals of KPTCL.
- (3) Consultants are being appointed for deciding on the modus operandi of Privatisation of distribution companies, which will be carved out of KPTCL.

**5.0 PLANNING FOR FUTURE:**

5.01 The State has experienced a power shortage situation for twenty years and is known as a State of power shortage. It is necessary to clear this impression by ensuring adequate power in the years to come firstly to provide a sense of confidence to the prospective entrepreneurs and secondly to attract those industries who are having captive plants to opt again for grid supply.

5.02 Power system planning is contemplated for a ten-year period to achieve the

following:

- (1) Projection of demand and energy requirements for a period of ten years.
- (2) Generation planning for a period of decade to meet the projected load growths on least cost options taking into consideration capital investment on evacuation lines and transmission losses.
- (3) To develop an optimal power system to meet the forecasted power demand in various horizon years and
- (4) To arrange reliable and quality power supply to all the consumers i.e., uninterrupted, reliable & stable power supply at rated voltages and frequencies;

by taking certain measures such as improvements in stability of the system and reduction of system T&D losses to an optimal level, consistent with load pattern and density.

## **6.0 LOAD PROJECTIONS AS PER HISTORICAL LOAD GROWTH:**

The load growth in Karnataka during 90's is to an extent of about 6% under restricted conditions as the State was reeling under severe power shortage since 1971. As against the unrestricted peak demand and energy requirements of 4845 MW and 28500 MU respectively for the year 1999-2000, the actual peak demand and energy consumption recorded in the State are 4066 MW and 26277 MU, respectively. Thus, the present shortage to meet the peak demand and energy requirement is to an extent of 16% and 8% respectively. The demand and energy requirement for the year 2009-10 are estimated to be about 9100 MW (with 15% spinning reserve) and 46,000 MU respectively, as will be elaborated later. This projected requirement takes into account the following;

- (a) The present shortage and a moderate growth to an extent of 6% per annum over next one-decade,
- (b) The benefit of additional energy that is expected to be available through system improvement efforts,
- (c) Bringing down the level of T&D losses from an estimated 26% to 14%.

Taking into account the existing capacity of 5417 MW as on 31-3-2000, there is a need for further capacity addition of about 3500-4000 MW. However, these estimates are subject to mid term as well as six-monthly reviews, for realistic assessment of the requirement.

## **7.0 MEASURES TO BE TAKEN UP TO MEET THE POWER REQUIREMENT:**

In view of the above it is necessary to gear up the activities for developing infrastructure in the power sector for increased Generation and strengthening of the Transmission & Distribution network.

**7.01 GENERATION:** The state owned generating company M/S KPCL and Central sector establishment M/S NPTC/ NLC have already drawn up plans for establishing new generating units to meet the power requirements in the state. With the liberalization and opening up the power sector for private sector participation through policy initiatives by the Government of India and Government of Karnataka, the IPPs have also come up with proposals for establishing new generating plants in the state, to meet the state's additional capacity requirement.

**7.02 TRANSMISSION AND DISTRIBUTION NETWORK:** KPTCL presently looking after

Transmission and Distribution in the state, has to develop infrastructure in T & D for evacuation of power from the generating stations, strengthen the Transmission and Distribution system to achieve the objective of providing reliable and quality power supply to all the classes of consumers, in a phased manner synchronizing with generation programs & load growth. The KPTCL has assessed that the present transmission network is sufficient to handle the peak load of about 3500 MWs only. KPTCL has already prepared a 10 -year perspective Transmission plan upto the year 2009-10 with a total capital investment of about Rs.8500 crores to meet the projected evacuation as well as system improvement requirements. KPTCL has also estimated that approximately an amount of Rs.3000 crores is required for improving the present distribution network, and an additional amount of Rs. 2000 crores for distribution expansion during next ten years. Thus, the total capital investment of Rs. 13500 crores is required for improvement of transmission and distribution system during next ten years, to develop a sustainable T & D network to achieve the objectives of providing reliable & quality power supply and to reduce the system losses to accepted levels of less than 15%. However, the quantum of investment assessed by KPTCL being very large and may impose a heavy burden in the form of interest, depreciation and other finance charges, a close review of the proposed transmission and distribution schemes taking into account the location of proposed power plants would be undertaken from time to time, to optimize the investments in the T&D system at a sustainable level.

**7.03** The additional requirement of power and energy is proposed to be met through several sources & measures. The first and the foremost measure to be taken is through reduction of losses from 26 to 14%. If the system improvement work is carried out carefully the benefit cost ratio will be quite high. It also helps avoid installation of additional capacity and thus mitigate the pollution effects. The proposed investment of Rs.13500 crores for strengthening the transmission system is not only to reduce losses, but also to handle additional loads. A detailed exercise on system improvement works has to be carried out to maximize benefit cost ratio.

**7.04** Karnataka Power Corporation (KPCL) a public sector company owned by Government of Karnataka is engaged in construction, operation and maintenance of generating stations in Karnataka. It is presently providing more than 70% of the needs of the State. It has built up expertise in the construction and operation of both hydro and thermal stations. It has received awards for excellence in the operation of Raichur Power Station. It commissioned recently Raichur 5 & 6 units each of 220 MW capacity in record time. It is desirable that it is allowed to play a role in the augmentation of capacity for several years to come till power sector business is well established.

**7.05** The Government of Karnataka has embarked on the process of getting power from independent power producers as far back as in 1995, consequent to the liberalization policy adopted by Government of India. As was in Vogue at that time, MOU route was adopted by Government of Karnataka and 15 projects were approved, the total capacity aggregating to 7178 MWs. Concerned with the lack of progress in the implementation of these projects, Government of Karnataka selected several short generation projects through the bid route. These included a few barge-mounted projects also. Though electricity from barge-mounted plants was costlier a conscious decision was taken in selecting them in the hope that electricity would be available in a very short time and mitigate the extant power

shortage in the state.

**7.06** Government of Karnataka has also been encouraging electricity production from alternate and renewable sources of energy. These include microhydel, wind power, Biomass and cogeneration in Sugar plants.

## **8.0 NEED FOR REVIEW OF IPPs AND FORMULATION OF A POLICY:**

**8.01** Presently, KPTCL is continuously facing revenue as well as capital deficits, and finding it difficult to manage its finances and earn a reasonable return. For the year 1999-2000, the KPTCL has reported a revenue deficit of Rs.1051 crores. In its ten-year financial plan under "base case with tariff increase of 12% CAGR in first five years and 10% CAGR over ten year period", KPTCL has projected a total deficit of Rs. 12200 crores to meet the revenue and capital subsidies as well as pension commitments.

**8.02** Hence, the Government of Karnataka has felt a need for formulation of an IPP policy to be consistent with the financial capabilities of the utilities as well as the Government, and to enable the IPPs to come out with the proposals, which are cost effective, environmentally compliant, and with consistent technology.

**8.03** The Government has also taken note of the fact that the procurement of additional capacities should be based on (a) availability at the time of requirement (b) availability at least cost pricing (c) available capacity to be equal to required capacity to avoid deemed generation payments and (d) location and load specific projects to minimize transmission losses.

**8.04** The High Level Committee on Escrow Cover to IPPs constituted by the Government of Karnataka, had recommended to the Government, among other things, as follows:

(a) The GoK, as owner of KPTCL, should not provide escrow cover to any IPP;

(b) The process of transferring the distribution system to private ownership be completed as soon as possible;

(c) In order to ensure that the energy supplied is produced at least cost, it is essential to structure contracts to enable the dispatch of generators on a strict merit-order;

(d) All future development of thermal capacity in Karnataka should be in private sector;

(e) However, in case capacity additions from IPPs are inadequate, then GoK may take steps to strengthen KPCL to meet this requirement in the interim;

(f) Location-specific and load-specific generation using predominantly renewable fuels must be encouraged.

**8.05** Keeping in view the above, a Committee to look into the issue of IPPs and make policy recommendations was set up under the Chairmanship of the Principal Secretary to Government, Energy Department. The Committee examined the projections made by KPTCL under Base Case, assuming normal industrial growth rate

of 5.29% as well as additional industrial growth anticipated from out of Global Investors' Meet (GIM Scenario). The Committee also took note of the estimated financial deficits amounting to Rs.12000 crores, upto the FY2010, in the financial projections made by KPTCL, under "moderate tariff increases".

**8.06** For this purpose, energy and demand requirements will have to be worked out carefully atleast for a Ten-year horizon. However considering the past & present trends in consumption by various classes of consumers and also the financial limitations to which KPTCL is exposed, the requirement of additional capacities has been estimated to be 3101 MWs, by the Consultants engaged by KPTCL for this purpose.

**8.07** Another exercise has been carried out by a member of the IPP Committee after taking into account (a) the low frequency situations, (b) low voltage condition in many sections of the grid, (c) unofficial load shedding during peak hours during summer time, (d) absence of adequate spinning reserve. (e) Local interruptions due to line or substation constraints or defects in certain sections of the network (f) some of industries reverting back to the grid supply and across the board an increase of 6% per annum, and the additional capacity needed works out to 4358 MW, & if an annual growth of 7% is assumed the requirement would go up to 5257 MW. In case the requirement is based on GDP: Power elasticity applicable to the Indian context, the capacity addition will have to be much more.

**8.08** All the above exercises presume that the T&D losses will be brought down from the present level of 26% to 14% in the course of ten years, through massive investments.

**8.09** A more detailed exercise about the power augmentation programme has to be carried on to ensure that the economic development does not suffer not only from inadequacy of power but also from lack of confidence among the entrepreneurs that shortage situation would recur. At the same time, it is also necessary to avoid a situation where capacity added is far in excess of the requirement. This is a delicate exercise and power requirement has to be reviewed each year & revised to the extent needed depending on the field situation.

**8.10** The Committee also examined various scenarios assuming an average of 6% and 7% growth rate in consumption across the board. The Committee has also taken note of the need for encouraging the Cogeneration including Bagasse based power plants and generation from renewable energy sources along with IPPs. If a higher growth rate is considered, the capacity to be contracted will be more.

**8.11** There are 14 IPPs with a proposed capacity addition of 2450 MW for which PPAs have been signed during the past under Bid/MOU/GO routes including barge mounted projects. Further, there are 12 more IPPs with capacity addition of 6059 MW for which PPAs have not been signed. In addition to these projects, the capacity addition of 1887 MW is expected from the existing sources. Further, the proposals for about 1300 MW from other sources are also under consideration.

**8.12** The available capacity as on 31-3-2000 (including 200 MWs, which are seasonal in nature) was 5417 taking into account the contribution from Central Generating Stations. The requirement could vary from 3101 MW to 5257 MW over ten-year period, as indicated earlier.

**8.13** The Committee after considering various scenarios, projections, status of various IPPs and policy options including the privatization of distribution on the anvil, has estimated the annual incremental (installed) capacity requirements, on realistic assumptions and to be consistent with the financial capabilities of the power utilities, as follows:

Year ended 31st March >	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total MW
	413	433	172	303	178	180	189	481	219	932	3500

**8.14** The Committee is of the view that the capacity addition ought to be between 3500-4000 MWs considering that some of the projects may not materialize and with due allowance for slippages. This would imply that a capacity of 650 to 1650 MWs has to be added during the course of next ten years, in addition to the additional capacities expected from existing sources. The committee noted that if capacities are added and consumption does not increase commensurately, particularly by those consumers who can pay at levels, which enables KPTCL and DISCOS to make a profit, the financial health of KPTCL and its successors would worsen. But it is desirable in the overall interest of the State, to avoid shortage and at the same time ensure that excess capacity is not added through periodical review.

**8.15** Considering the fact, that the two strategies followed earlier, viz MOU route and bid route have not yielded the desired results, it is necessary to evolve a policy which enables capacity addition in the most economical and transparent manner and without delay. The additional capacities have to come through IPPs or through CGS or KPCL. The criterion should be course be that the cost of supply is the lowest. This would call for evolving a policy for selection of the prima-facie competitive projects and thereafter compare the rates and choose those projects, which are most advantageous techno-economically.

**8.16** Committee had also taken note of the Multi-partite Agreement entered into between GoK, KPTCL, KPCL and IDFC, Mumbai in respect of funding RPTS 7th Unit of KPCL, on 15-10-2000, on the basis of firm and time-bound commitments on the part of GoK, GPTCL and KPCL, to reform and restructure the power sector.

**8.17** After detailed examination of the matter and the above recommendations of the Committee on the issue of IPPs, the Government of Karnataka adopts the following policy on the issue of IPPs:

(1) The total incremental capacity addition to be encouraged over ten-year period during FY2000-01 to FY2009-10 would be in the range of 3500-4000 MWs.

(2) Capacity addition programme comprises of those arising from out of existing sources as well as new contractual sources, say from State and Central Sectors, and IPPs.

(3) Location-specific and load-specific environment-friendly generation facilities using Non-conventional / renewable energy fuels/sources, and Cogeneration facilities, would be encouraged, along with the IPPs, so that such projects constitute upto 10% of the total electricity consumed

by the year 2009-10.

(4) (4) Naphtha/Liquid fuel based or Barge-Mounted Projects would not be encouraged, as they are not cost effective.

(5) The Power Purchase agreements or arrangements are to be entered into with the IPPs or others by KPTCL or its successor entities as the case may be, in the manner approved and as directed by the Karnataka Electricity Regulatory Commission, under the provisions of the Karnataka Electricity Reform Act, 1999, from time to time.

(6) Power Purchase Agreements shall include appropriate provisions for the following: for making evacuation arrangements by KPTCL or its successor entities, safeguards against commitment to pay exorbitant/avoidable deemed generation charges to IPPs, commitment on the part of IPPs to pay penalty for not making available the contracted generation to KPTCL or its successor entities.

(7) No provision of escrow facilities or similar arrangements and no provision of any other form of guarantees to any IPP would be available.

(8) To consider reform-based arrangements, for encouraging capacity additions, as has been done in the Multi-partite Agreement with IDFC in respect of RTPS 7th Unit of KPCL, with such modifications as may be necessary.

(9) Projects would be prioritized based on the above mentioned principles and parameters, the least tariff criterion, timing, and the extent of capacity requirement synchronized with corresponding evacuation arrangements, on a year-on-year basis. Further, such prioritization would apply only to the firm projects, which are expected to occur and fructify from time to time.

(10) Efforts would be made to encourage procurement of energy from any other source within or outside the state, if such procurement is on least cost and available on competitive terms to meet the State's demand for power at a given point of time.

**(K.P. PANDEY)**  
**Principal Secretary to Government**  
**Energy Department**

**(B.K.SRINIVASA RAO)**  
**Under Secretary to Government,**  
**Energy Department.**