

**KARNATAKA ELECTRICITY REGULATORY COMMISSION
BANGALORE**

Dated 20th June 2006

Present

1. Sri K.P. Pandey- Chairman
2. Sri H.S. Subramanya- Member
3. Sri S.D. Ukkali- Member

In the matter of : Implementation of Intra-State ABT

No. B/09/5

ORDER

1. Introduction

The National Electricity Policy issued under the provisions of the Electricity Act 2003 envisages introduction of intra-state ABT and states as follows:

"The ABT regime introduced by CERC at the National level has had a positive impact. It has also enabled a credible settlement mechanism for intra-day power transfers from licensees with surpluses to licensees experiencing deficits. SERCs are advised to introduce ABT regime at the state level within one year".

Accordingly, KERC had issued a discussion paper in December 2005 titled "Action Plan for implementation of intra-state ABT" inviting comments from various Experts and Stakeholders. In the draft paper, the Commission has listed out the various implementation issues such as metering of interface points, communication facility, setting up of Area Load Dispatch Centre (ALDC), tariff matters etc and has proposed implementation of the intra-state ABT in a phased manner. In response, 11 experts/stakeholders (list at Annexe-1) have furnished their views/comments on various issues. The comments received from stakeholders and the Commission's views thereon are discussed in the following Paragraphs.

2. **Primary issues on implementation of intra-state ABT.**

KPTCL in their response dated 9.1.06 have stated that a co-ordination and monitoring committee under the Chairmanship of MD/KPTCL would be established to oversee and monitor the progress of implementation and that SLDC and Telecommunication divisions will be termed as responsibility centers for implementation and has further stated that it would be possible to implement intra-state ABT in the manner suggested by the Commission. KPTCL has since established a monitoring committee vide order dated 12.01.06 and Chief Engineer, LDC has also been fully authorized to procure necessary infrastructure for setting up of communication network.

Sri B.G. Rudrappa has observed that while the advantages of ABT are very well known, since Intra-state ABT envisages creation of ALDCs & providing sophisticated Interface metering at huge cost, it is incumbent that the benefit should be commensurate with investment. He has suggested that ESCOMs can regulate power consumption of large industrial consumers by installing TOD meters and by appropriate TOD tariffs. He has opined that introduction of intra-state ABT could wait for some more time.

Sri Shankar Sharma has expressed that the decision to implement intra-state ABT in the state is a very progressive move and would herald a new era of discipline and responsibility on the part of all the concerned and the crucial issue is diligent implementation of the scheme at the beginning.

MESCOM has suggested that establishing ALDC requires time and it would be better to review the situation in Dec 2006 and decide the possibility of introduction of Phase I from 01.04.2007. It has suggested to coincide the implementation of the intra-state ABT with ESCOM wise tariff to consumers

so that the ESCOMs can pass on the additional burden of UI charges on selected consumers.

BESCOM has stated that for successful implementation of the ABT, ESCOMs should have their own generation for regulation of their loads and should have capacity allocation to meet their demands. Considering the small volume of flexible generation capacity available (after excluding major IPPs, hydro power, CGS, Yelahanka DG Plant, and RTPS units 1 to 4 from the purview of intra-state ABT), the intra-state ABT cannot be implemented effectively. BESCOM has further stated that a level playing field has not been created for the ESCOMs since a major portion of high cost generation has been allocated to BESCOM by the GoK in the order dated 28.12.05, by which the other ESCOMs will be at advantage while issuing merit order dispatch.

IREDA has stated that ABT is not appropriate /practicable mechanism for projects based on NCE as availability is most unpredictable.

Commission's views:

There is no doubt about the advantages of inter-state ABT which have been listed by the FOIR sub-committee and included in the draft paper issued by the Commission. It is expected that the same benefits would flow in the case of intra-state ABT also. The Commission notes that National Electricity Policy envisages introduction of intra-state ABT within one year and the FOIR has also recommended implementation of the same early. It would be appropriate to initiate action for implementation of the intra-state ABT now since it would take considerable time to complete the same in view of large number of interface points and the sophisticated communication facility and other infrastructure required. The action plan also proposes phased implementation of the scheme. The

Commission is also of the view that the scheme needs to be implemented diligently.

On the point raised by IREDA, the Commission has already taken note of this aspect and has stated in the draft paper that intra-state ABT would be applicable to Bio-mass and Co-generation plants of 25 MW & above only.

Regarding the issue raised by BESCO on allocation of high cost generation to it by GoK, the Commission has already addressed GoK in the matter to allocate the generation to the ESCOMs in accordance with the Tariff Policy. As regards the point raised by the BESCO regarding owning any generation capacity by the ESCOMs or limited availability of variable generation in the state etc, these aspects do not pose any constraints in implementing the intra-state ABT.

The Commission appreciates the positive response of KPTCL and the action taken by it to implement the intra-state ABT as per the action plan proposed by the Commission.

- 3. Metering** – The Commission had suggested in the draft paper to complete fixing ABT compliant meters at the interface points of generators with the grid, between KPTCL and the ESCOMs and also for EHT/open access consumers including captive users before the end of March 06.

BESCO has suggested that only 400/220 kV IF points should be considered rather than all IF points for simplicity. Sri Bhanu Bushan, Member, CERC has opined that audit metering can be there upto 11 kV, but interface metering location should be at points where supplies to different ESCOMs branch off. He has strongly recommended to have interface point metering at 132 kV/33 kV level and has suggested that

meters have to be read only once a week and need not have continuous communication linkage for providing real time data.

KPCL has stated that action has already been taken by it to install ABT compliant meters at the interface points of the KPCL's generating stations and will be completed by the end of March 2006.

Sri Bhanu Bhushan has stated that output capability need not be declared 15 minute-wise and it can be a MW figure for the whole day.

Commission's view:

KERC is of the view that for implementation of ABT and UI mechanism within the state, installation of special energy meters on the periphery of all entities, which are to be covered by ABT and UI is a prerequisite. The Commission finds merit in the suggestion of Sri Bhanu Bhushan to limit the interface points to 132 kV/33 kV level for effective implementation of the intra-state ABT. The Commission informs the KPTCL/ESCOMs to take action to limit the interface points to 33 kV level wherever feasible including all future IF points and the number of IF points at the 11 kV level shall be minimized to the extent feasible. Appropriate latest communication technology available shall be adopted by KPTCL/ESCOMs especially in view of large number of IF meters,

While energy accounting is done on a weekly basis for the purpose of UI, real time data would be essential for ESCOMs/Generators to monitor the schedule.

Regarding the ownership of meters and its accessories, the entities involved shall follow regulation-6 of CEA (Installation and operation of meters) Regulations, 2006 issued by CEA on 17.03.2006.

The Commission appreciates action taken by KPCL to install ABT compliant meters at its generating stations and hopes similar action is already taken by other generating companies in the state.

4. **Tariff** – The Commission has stated in the draft paper that in order to implement the intra-state ABT, a two-part tariff is a pre-requisite for all the generating stations in the state and that KPTCL/ESCOMs shall take action to convert the single part tariff wherever existing to two-part tariff. The Commission has also suggested to adopt the UI charges as per CERC order till the same is determined by KERC separately and to continue the incentive linked to PLF for the present.

KPCL has requested the Commission to approve for recovery of fixed charges linked to availability as per the ABT tariff and also as suggested by FOIR sub-committee and guidelines of CERC. KPCL has also requested to fix incentives based on station availability as suggested by FOIR sub-committee.

GMR Energy Ltd has stated that Intra- State ABT invites payment of UI Charges, which was not a part of the PPA. Implications of this on the PPA need to be ascertained. Correlation between the declared schedule and the plant availability on the annual basis for the purpose of reimbursement of fixed costs as per the PPA needs clarification.

Tata Power Company Ltd has stated that the existing PPA provides for a two part tariff, fixed charges based on availability which needs to be continued and the variable charges on the actual energy sold at predetermined tariff heat rate.

BESCOM has stated that PPAs with IPPs need to be modified.

Sri Shankar Sharma has pointed out that In addition to the three-part tariff (fixed, variable and UI charges), the recording of exchange of reactive power is important for management of reactive power.

Commission's views

KERC is of the view that the existing PPAs need to be suitably modified in order to implement Intra-State ABT. ESCOMs shall initiate action in the matter. Clarification sought by GMR on the correlation between declared schedule and plant availability could also be dealt with while modifying the PPA. On the points raised by KPCL on tariff determination linked to availability etc, it may place appropriate proposal before the Commission.

Regarding reactive power management, KERC directs KPTCL/ESCOMs to file their proposals for reactive power charges applicable for open access transactions.

5. Other Issues:

KPCL has stated that merit order should not be applicable for Hydro stations.

GMR/Tata Power have sought clarification regarding ramp up & ramp down rates. They have also raised points as to whether ABT be applied under emergency conditions like islanding, black start and total plant tripping due to customers' fault. They have also stated that other issues like cold start/hot start needs to be addressed and have sought clarification on charges to be levied for import of power.

IWPA has sought clarification on the applicability of ABT on open access consumers sourcing power from wind generators and regarding banking

facility as per the Commission's order. They have stated that UI charges for banking facility may be applied after two years after implementing Intra-state ABT.

Commission's views:

Regarding applicability or otherwise of merit order for hydro stations, the Commission notes that the provisions of the respective PPA would be applicable.

As already clarified earlier, intra-state ABT would not be applicable to wind energy generators and hence the same would also not be applicable to the open access consumers drawing power from wind generators.

Regarding ramp up & Ramp down rates, KERC is of the view that SLDC shall ensure that the above rates are operationally reasonable while finalizing the daily dispatch schedules.

In case of forced outage of unit/s are concerned, SLDC shall revise the schedules on the basis of revised declared capability. The revised declared capability and the revised schedules shall become effective from 4th time block, counting the block in which revision is advised by the generator to be the first one.

- 6. Considering all the above discussions, the Commission approves the action plan for implementation of the intra-state ABT as annexed to this Order.**

Sd/-
(K.P.Pandey)
Chairman

Sd/-
(H.S.Subramanya)
Member

Sd/-
(S.D.Ukkali)
Member

KARNATAKA ELECTRICITY REGULATORY COMMISSION

Date:20th June 2006

Action Plan for Implementation of Intra-state Availability Based Tariff (ABT)

1. Introduction

For the purpose of transmission of electricity, India has been divided into five regions namely, Eastern, Western, Southern, Northern and North-Eastern Regions. These regions have been interconnected to form a "National Grid" with a view of bringing reliability and stability in power transmission across the nation along with efficient usage of available resources. Prior to introduction of inter-state ABT, there was a lot of indiscipline in the grid operation in these regions resulting in frequent blackouts and islanding. There was lack of balancing between generation and demand for power on real time basis. This was mainly due to excessive generation in the northern and northeastern regions resulting in higher frequencies in these regions and over loads in western and southern regions resulting in lower frequencies in these regions. In this context M/s ECC, USA, after a study in 1993-94 recommended to Gol to introduce Availability Based Tariff (ABT), in all the regions to bring about grid discipline. However after the constitution of CERC in 1998, the matter came under the purview of the CERC. In 1999, the CERC issued necessary orders and regulation for implementation of Inter-state ABT in India and ABT has been implemented region by region during 2002 and 2003. ABT was implemented in the Southern region with effect from 1st January 2003. The implementation of inter-state ABT has brought about substantial improvement in the grid operation resulting in Grid discipline and optimal utilization of the generation capacities.

The implementation of Inter-state ABT has brought about the following improvements in the operation of the regional grid as indicated in the FOIR sub-committee report:

- a) Grid frequency has dramatically improved from 48 – 52 Hz range to 49.0 – 50.5 Hz range for most of the time.
- b) A higher consumer demand is being met, due to built-in incentives to maximize generation in peak-load hours.
- c) Generation stations are being operated according to real merit order, on region-wide basis, through decentralised scheduling.
- d) Hydro-electric generation is being harnessed more optimally than done previously.
- e) State's share in central generating stations have acquired new meaning and grid discipline is encouraged.
- f) Open access, wheeling of captive generation and power trading has been enabled by placing in position the mechanism (UI) for handling deviations/ mismatches.
- g) States meet their occasional excess demand by over drawing from the regional grid and paying applicable UI charges to the under-drawing states.

2. Intra-state ABT

Keeping in view the advantages of ABT, the National Electricity Policy issued under the provisions of the Electricity Act 2003 envisages introduction of intra-state ABT. The said policy, under clause 5.7.1 (b) states as follows:

“The ABT regime introduced by CERC at the National level has had a positive impact. It has also enabled a credible settlement mechanism for intra-day power transfers from licensees with surpluses to licensees experiencing deficits. SERCs are advised to introduce ABT regime at the state level within one year”.

The Forum of Indian Regulators (FOIR) constituted a sub-committee consisting of Sri Bhanubushan, Member, CERC, Sri S.D. Ukkali, Member, KERC and others, to recommend measures for implementation of intra-state ABT and the sub-committee has furnished its recommendations to the FOIR in Nov 2005, recommending implementation of frequency based Intra-State ABT.

KERC is bringing out this Action Plan for implementation of intra-state ABT in the State of Karnataka.

3. Status of energy allocation to ESCOMs

Since KPTCL has been barred from engaging in trading electricity with effect from 10.6.2005 in terms of section 39(1) of the Electricity Act 2003, GoK in GO No EN 131 PSR 2003 dated 10TH May 2005, had allocated the PPAs of KPCL, VVNL, Central Generating Stations and conventional IPPs to the ESCOMs on the basis of share of each ESCOM in total energy consumption in 2004-05 and the PPAs of renewable sources to the respective ESCOM based on geographical location of the project. Subsequently, GoK vide its notification No. EN 131 PSR 2003 dated 28.12.2005 has reallocated all the high cost power to BESCO & MESCOM by compensatory reallocation of hydel power from SGS to other ESCOMs effective from November 2005, stating that such reallocation is to strike a reasonable balance among all ESCOMs. In this regard, the Commission vide its letter dated 20.03.2006 has requested the GoK to assign the PPAs to ESCOMs based on load profile of the ESCOMs as required under tariff policy issued by Gol. Subsequently GoK vide its GO dated 22.04.2006 has again reallocated power to ESCOMs which is also not in line with the Tariff Policy. Hence, the Commission has once again addressed GoK in the matter on 12.06.2006 requesting GoK to allocate power to ESCOMs as per the tariff policy.

With regard to drawal of power under UI source in inter-state ABT, while one ESCOM may be responsible for causing the UI due to overdrawal, the UI charges may be required to be met by other ESCOMs also in the absence of intra-state ABT. There should be incentives for the individual ESCOMs for efficient management of the demand and also penalties for inefficiency. Therefore, while allocating power to the ESCOMs, there is need to indicate the basis of allocation of UI source/charges also.

Considering the above capacity allocation discussed earlier as a transition arrangement, the capacity allocation should be made to each ESCOM after a systematic study considering various parameters including demand/peak load requirement, consumer profile etc in each ESCOM. Thereafter, the capacity charges (fixed charges) of the generating stations have to be allocated to the ESCOMs according to the capacity allocation and energy charges in proportion to the actual energy drawal in order to provide economic signals and efficient management of power purchase by the ESCOMs.

4. Intra-state ABT and its benefits:

a) Intrastate ABT Components:

Intra-state ABT is a techno-economic tool for bringing rational tariff structure for supply of electricity from State generators to the distribution Licensees apart from the fact that it is a mechanism for enforcing discipline in the Grid. The generation tariff under the ABT regime has three components namely the fixed charge, the variable charge and the Un-scheduled Inter-change charge (UI Charges) as follows:

- (i) Fixed charge** covers capacity charges of the generators, which is payable by each beneficiary on the capacity allocated to them, irrespective of the amount of power they draw or scheduled to draw.

(ii) Variable charge (towards fuel cost/variable expenses of generation) is payable by each beneficiary on the scheduled energy irrespective of actual drawal.

(iii) UI charge is payable by the beneficiaries/ generators for the deviations from the schedule and is dependent on the frequency prevailing at that time.

b) Benefits of Intra state ABT:

Intra-state ABT has the following benefits:

- **Benefits to the Power System:**

- I. Brings about grid discipline by maintaining frequency in technically feasible narrow band.
- II. Ensures optimal utilisation of available resources and generation capacities.
- III. Enhances opportunities for Open access, Captive generation wheeling and Trading of electricity.
- IV. Scope for encouraging competition among generators.

- **Benefits to Generators:**

- I. Encourages maximization of generation during peak hours with incentives and discourages the same during off peak hours with penalties.
- II. Compels drawal of power by the utilities as per the scheduled drawal failing which Generators stand to gain by applicable UI charges.
- III. Enables systematic scheduling in terms of long term, short term as well as day ahead, duly considering plant availability and maintenance.

- IV. Ensures better life of equipments due to efficient management of Demand Vs Supply. Thereby the 'Hidden Costs' due to damage is avoided.
- V. The three-part Tariff under ABT provides for proper recovery of fixed and variable costs of Generator.

- **Benefits to the Licensees:**

- I. Economic efficiency dictates that the least cost power should be dispatched in preference to costly power (Merit Order Dispatch). ABT provides for the same.
- II. Licensees can plan their requirement, both for peak and off peak demands.
- III. Enables efficient Load Management through their own Area Load Dispatch Centers.
- IV. Provides for economical power and better accounting procedures.

- **Benefits to End Users:**

- I. Enables open access, captive generation, wheeling and trading of electricity.
- II. Ensures better quality and reliable power supply.
- III. Scope for reduction in cost of power due to licensees opting for merit order dispatch in their scheduling.

5. ABT & Retail Power Tariff:

The Commission had also proposed introduction of differential tariff, i.e. separate tariff in each of the ESCOMs area to reflect the cost of supply in each ESCOM duly considering the consumer profile and revenue stream in such ESCOM. However, considering the suggestions received from the stakeholders, the Commission has introduced separate tariff for urban and

rural areas in the Tariff Order 2005 and intends to move towards ESCOM-wise differential tariff in future. Cost of power purchase being the major input cost (more than 75% of the cost of supply), implementation of intra-state ABT may have substantial impact on cost of supply and the tariffs in each of the ESCOMs. The operational efficiencies in each ESCOM including efficiency in power purchase management under ABT would get reflected in the tariffs when such differential tariffs are determined.

In view of the established benefits that have accrued under inter-state ABT, the question whether intra-state ABT is required does not arise since the same benefits as in inter-state ABT are expected to accrue to the ESCOMs/consumers. The question is only how soon intra-state ABT can be implemented. The general consensus/ recommendation is that the methodology adopted for inter-state ABT should be replicated for intra-state ABT with modifications as may be required.

No doubt, implementation of intra-state ABT is a complex exercise involving a number of ESCOMs, a large number of generating stations, a huge number of interface points, etc, but the exercise must begin.

6. Mechanism of Intra-state ABT

Under the intra-state ABT, all the State generating stations (which are subject to scheduling by SLDC) shall declare their 15-minute schedule of expected output capability for the next day to SLDC. Based on the information available to the SLDC in respect of all sources of power viz ,

- (i) Expected output capability from CGS as furnished by RLDC
- (ii) Expected output capability from State Generating stations
- (iii) Other sources, if any (CPPs) and
- (iv) Losses in the system,

the SLDC conveys the entitlements to each of the ESCOMs for the next day on the basis of allocated capacity. Immediately thereafter, the ESCOMs considering the entitlement and the forecasted demand would convey to SLDC their schedule of power drawal for the next day. (The ESCOMs shall prepare their forecast for the next day systematically after considering the demand in the previous year, previous month, previous day etc duly considering changes in demand, seasonal variations, weather conditions etc.). SLDC will aggregate the requisitions from the ESCOMs and prepares the dispatch schedule keeping in view the merit order and how best to meet the schedule given by the ESCOMs. After the exercise, the SLDC will issue,

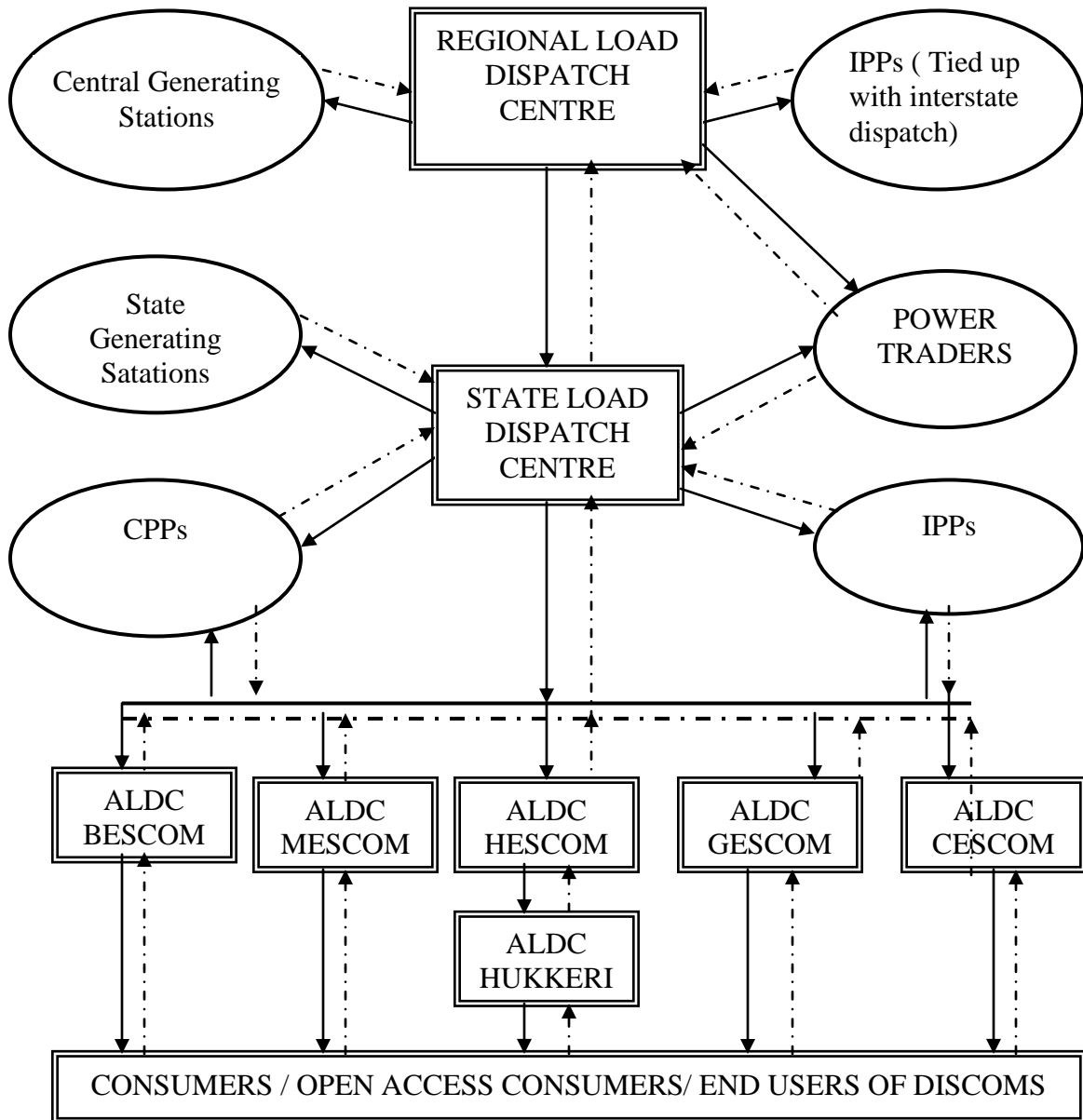
- (i) Dispatch schedule to RLDC for communication to the CGS
- (ii) Dispatch schedule to the state generators
- (iii) Dispatch schedule to others (CPPs) and
- (iv) Drawal schedules to the ESCOMs.

These schedules issued by SLDC will become the basis for ABT. In case of any contingencies, both the generators and ESCOMs can revise their requisitions and schedules and the same shall be revised correspondingly by the SLDC within the stipulated time.

The schedules form the basis for payment of energy charges and any deviations from the schedule would attract frequency dependent UI charges.

A typical flow diagram under the intra-state ABT is given below:

INTRASTATE ABT



INDEX:

- > Flow of Confirmed Day ahead Dispatch schedule for Generators / IPPs / CPPs & Day ahead Drawal Schedule for Licensees / Open access consumers by RLDC/SLDC/ALDC.
 - > Flow of Day ahead Availability of Generators/ IPPs / CPPs & Day ahead Requirement of Licensees/ Open access consumers to ALDC/SLDC/RLDC.
- (On similar lines long term and short term scheduling is also prepared.)

7. Applicability of Intra-State ABT:

Intra-State ABT shall be applicable to all generators that are connected to the Grid and are scheduled and dispatched by SLDC. As per the Grid Code issued by KERC all Generators [excluding wind and minihydel] with installed capacity 25 MW & above need to be scheduled and dispatched. All such generators shall come under the purview of ABT. Intra-state ABT shall be applicable to the following:

1. Full ABT:

- i) All ESCOMs and Hukeri Society
- ii) All State owned generating stations –25 MW & above
- iii) IPPs of 25 MW & above
- iv) Bio-mass and Co-generation plants of 25 MW & above.
- v) CPPs supplying power to the grid-25 MW & above

In all other cases provisions of KERC open access regulations regarding UI charges shall be applicable.

8. Issues for implementation of Intra-state ABT:

i) Metering:

FOIR sub-committee has rightly pointed out that for implementation of ABT and UI mechanism within the state, the activity on the critical path would be installation of special energy meters on the periphery of all entities which are to be covered by ABT and UI. The meters should be capable of recording all the parameters such as demand in MW, reactive power, power factor, frequency etc in a 15-minute block.

Since the required number ABT compliant meters have already been procured by KPTCL for interface metering with ESCOMs and already 829 such meters have been fixed, it is expected that all the other interface points would be fixed with ABT compliant meters quickly. This should be completed before the end of June 2006.

All the Grid connected generators that are scheduled and interface points of ESCOMs shall be provided with ABT compliant meters latest by 30th June 2006. The respective Generating stations and KPTCL shall take action accordingly.

Regarding metering of EHT/open access consumers including Captive users, the same shall be taken up by respective ESCOMs and completed before the end of June 2006.

ii) Communication facility:

For effective implementation of intra-state ABT, metering data should be transferred from the ABT compliant meters to ALDC/SLDC on a real time basis. Hence adequate & reliable communication facilities should be established. Since ALDCs have to be established by the respective ESCOMs in order to provide load forecast to the SLDC on a daily basis, communication facility from the ABT compliant meters at the interface points to the ALDC/corporate office of the ESCOMs should be established. When such facility is provided, the same linkage could also be extended to the SLDC parallelly for monitoring.

iii) Finalisation of Capacity allocation to each ESCOM:

As discussed earlier, the Commission has requested GoK to allocate the PPAs to ESCOMs based on load profile of ESCOMs. This requires a detailed

study and careful analysis as this is being attempted for the first time in the state. KPTCL/ESCOMs shall take up the matter with GoK.

iv) Tariff:

The basic requirement for implementation of ABT is a three-part tariff comprising of fixed charges, variable charges and UI charges in comparison with the existing single/two-part tariff. FOIR has also recommended adopting this tariff structure. As already stated, the fixed charge would be linked to availability and variable charges to the scheduled energy. The UI charges shall be applicable for the deviations from the schedules.

A three-part tariff for the central generating stations is already in force under the inter-state ABT. When the intra-state ABT is implemented, the fixed charges of the CGS have to be allocated to the ESCOMs according to the capacity allocation, energy charges according to the scheduled energy and UI charges for variation in the schedule given by each ESCOM.

Therefore, in order to implement intra-state ABT, a two-part tariff should be implemented for all the generating stations within the state. KPTCL/ESCOMs shall take action accordingly to convert the existing single part tariff to two-part tariff in respect of all the stations coming under ABT regime.

Regarding the third part of the tariff i.e. UI charges, the UI rate determined by the CERC is already in force for inter-state ABT and it has been recommended by various experts including the FOIR sub-committee to adopt the same UI rate for intra-state ABT also. The Commission endorses this view and considers it appropriate to adopt the same till UI rate is determined by the Commission for intra-state transactions separately.

Accordingly, UI rates and threshold frequencies for UI rate as determined by CERC shall be adopted for the present.

The FOIR sub-committee has recommended that incentives for generating stations shall be linked to higher availability instead of to PLF. At present, the incentives in respect of CGS are linked to actual PLF and not to availability as per the existing CERC norms. KERC while welcoming the suggestion of the FOIR sub-committee to link the incentive to station availability so that the generating stations are better available for generation, it is of the view that during this transition period, it would, perhaps be better to continue the incentive to actual PLF achieved only as otherwise, the ESCOMs may be required to pay higher amounts even when the station availability is not fully utilized. If incentive is provided to the generating companies linked to availability, the generators may recover incentives by declaring availability even without generating a single unit, specially so in the case of high cost energy sources. Therefore, the Commission would continue the incentive linked to actual PLF for the present.

v) Setting up of Area Load Dispatch center (ALDC):

Each of the ESCOMs have to set up an Area Load Dispatch Centre to monitor and control the drawal of power within the ESCOM, as per the schedule. As discussed earlier, real time communication from the ABT compliant meters to the ALDC/corporate office of the ESCOM is crucial for implementation of the ABT. These ALDCs shall be established before December 2006.

vi) Up-gradation of SLDC:

In order to handle the increased volume of data under Intra-state ABT and also to perform the functions of monitoring and energy accounting,

the state load despatch centre needs to be up-graded suitably by providing necessary software, hardware, human resources and other infrastructure. These shall be completed before December 2006.

vii) Scheduling & Energy Accounting:

The ESCOMs, the generators within the state and EHT/open access consumers should make day ahead forecast for every 15 minutes time blocks under the ABT schedule, which requires expertise. The schedules would be finalized by SLDC for ESCOMs and generators and by the Concerned ALDC's for EHT/Open access consumers.

viii) Gaming:

Generators may overstate their availability under ABT regime as the recovery of fixed charges is linked to availability. Similarly, the generators may under declare the capacity to take advantage of UI charges. In either case there would be gaming by generators which needs to be avoided.

Availability tests need to be conducted through third party. If the units/station fails to demonstrate the declared capacity, penalty needs to be imposed. Further, the capacity charges should be reduced to the actual availability until the generator demonstrates higher availability. Similarly, if availability is under-declared, the UI charges due to the generator has to be credited to UI pool. In addition, a penalty shall also be levied. In addition to the penalties, officer in charge of the generator shall be made responsible for misdeclaration.

SLDC shall prepare a standard procedure for availability testing and maintain record of all such tests carried out. Regarding time block for UI, FOIR sub-committee has recommended a 15-minute time block.

However, FOIR has stated that as an interim arrangement UI charges can be on 30-minute block.

9. Training and Familiarization:

Under intra-state ABT, energy accounting would be complex and requires computerization and trained human resource for efficient data management. For effective implementation of the intra-state ABT, the staff of SLDC and the ESCOMs need to be trained extensively. The staff of SLDC has already gained experience in operating the inter-state ABT, but they have to be further trained on intra-state transactions. KPTCL and ESCOMs shall send their concerned staff for appropriate training. This activity needs to be prioritised and completed as per the time schedule indicated in forthcoming paras.

10. Responsibility for implementation:

It shall be the joint responsibility of KPTCL and ESCOMs for implementation of intra-state ABT as it involves fixing ABT compliant meters at interface points, establishing communication facilities and monitoring and control of the operations under ABT. As discussed earlier, KPTCL has already procured ABT compliant meters and installed a large number of them. Since KPTCL is exclusively in the business of transmission of electricity and SLDC being continued under KPTCL, KPTCL is in a better position to take care of the activities required for implementation of ABT because of its vast experience. Therefore, KPTCL shall take the responsibility to complete the interface metering with all the generating companies, with the ESCOMs and also inter-ESCOM metering irrespective of voltage level, with due coordination with the concerned ESCOMs. The ultimate responsibility for implementation of intra-state ABT shall be that of the SLDC.

11. **Cost Sharing:**

As far as the costs involved are concerned, the cost of metering shall be borne by the Owners of the meters. Regarding the ownership of meters and its accessories, the entities involved shall follow regulation-6 of CEA (Installation and operation of meters) Regulations, 2006 issued by CEA on 17.03.2006. The cost of up-gradation of SLDC, up-gradation of SCADA, requirement of hardware and software at SLDC etc shall be borne by KPTCL only. However, the cost of providing real time communication of the interface points with the ALDC/ESCOMs (corporate office), along with required hardware and software, establishment of ALDC etc shall be borne by the respective ESCOMs. In a nutshell, it would not greatly matter who bears the cost of various activities under the ABT since ultimately, all the expenses are passed on to the consumers through tariff.

12. **Phase-wise implementation of intra-state ABT:**

In view of the constraints in implementation of the intra-state ABT, it is proposed to implement the intra-state ABT in the following phases:

First Phase: The Commission expects that the ABT compliant meters are provided at the interface points before end of June 2006 and the required real time communication facility shall be in place before the end of September 2006. From 1st October 2006, a proxy intra-state ABT shall be implemented for a period of six months. In this phase the generators and the licensees would participate in a proxy implementation of ABT. In this phase the existing meters available as on 1st October 2006 should be used and the data would be considered for half an hour period. The generators and ESCOMs would furnish a day ahead schedule to SLDC, which will finalise the schedule duly matching the generation and drawal schedule. It will also carry out energy accounting and would also compute the UI

charges on a weekly basis. These charges are computed only notionally and ESCOMs/generators need not make any payment for violating the schedule. All the Generators, KPTCL and ESCOMs should make necessary arrangements to implement the same from 1st October 2006.

Second Phase: In this phase, the same procedure as in the first phase would be followed for period of next six months effective from 1st April 2007. However the generators/ESCOMs shall have to pay the ABT charges for the generation/drawal of power on half hourly basis.

Third Phase: In this phase the Generators and ESCOMs would implement the Intra-State ABT in Toto, duly facilitating all the requirement of implementation of intra state ABT, with effect from 1st October 2007. The monitoring, energy Accounting and billing would be on a 15 minutes basis.

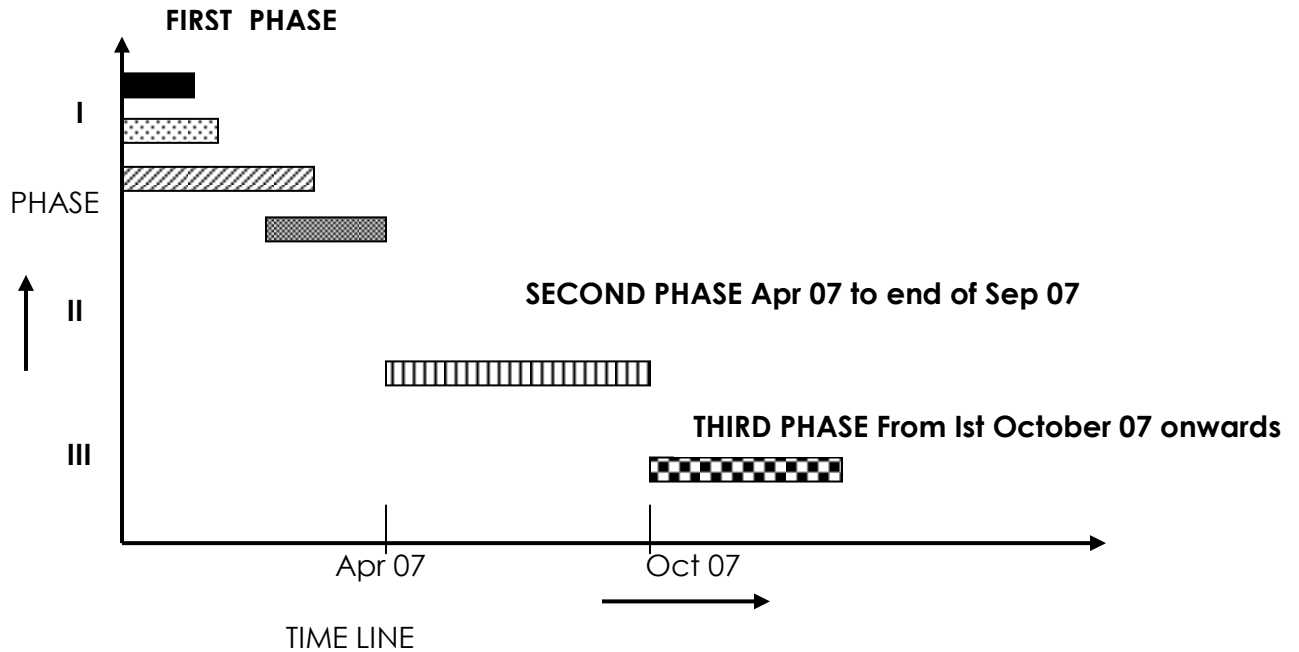
In all the above phases, finalization of schedule, monitoring and energy accounting would be carried out by SLDC.

Intra-state ABT for Hydro-stations

FOIR sub-committee has pointed out that certain issues have come up recently in ABT for hydro stations particularly in North Eastern Region and have suggested that SERCs may exercise caution while extending ABT to intra-state hydro stations or wait for resolution of these issues by CERC for central stations. In view of these factors, the Commission proposes to postpone implementation of intra-state ABT to hydro stations for a period of one year. However, such stations shall complete all preparatory work for implementation of intra-state ABT as per the Action Plan and also provide day ahead availability / output schedule to SLDC.

13. Action Plan:

A bar chart & Time Schedule indicating the Action plan for implementation of the intra-state ABT is given below:



• **TIME SCHEDULE**

PHASE	TIME LINE	ACTIVITY
I	By the end of June 2006	1. Providing ABT compliant meters at all interface points including generating stations. 2. Impart necessary training.
	By the end of September 2006	Establishing suitable communication network for recording data on real time basis with Corporate office ESCOMs/SLDC.
	By the end of Dec 2006	Setting up of ALDCs in each ESCOMs/Hukkeri Society and up gradation of SLDC
	Oct 06 to Mar 07	1.Proxy Implementation of ABT 2.ABT based daily accounting and billing for half an hour. 3.Generators and Licensees to comply with ABT based availability and drawal schedules for half an hour. 4.RLDC / SLDC/ALDC to co-ordinate on real time data management. 5.Generators and Licensees need not pay as per ABT billing.
II	Apr 07 to end of Sep 07	1.Generators / Licensees to pay ABT charges on half an hourly basis.
III	October 07 Onwards	Final Implementation of ABT.

14. KPTCL/ESCOMs and all the Generators in the State shall take action to implement the intra-state ABT as per the above Action Plan. The Co-ordination and monitoring Committee constituted by KPTCL for implementation of the intra-state ABT shall take effective steps for implementation and KPTCL shall send quarterly progress report to the Commission in the matter.

By Order of the Commission

**Sd/-
Secretary**

ANNEXE- 1

LIST OF STAKE HOLDERS/EXPERTS WHO FURNISHED COMMENTS/SUGGESTIONS

Sl.No.	Name and Address
1	KPTCL
2	KPCL
3	GMR Energy Limited
4	Tata Power Company Ltd.,
5	Indian Wind Power Association Karnataka Council
6	IREAD
7	MESCOM
8	BESCOM
9	Sri Shankar Sharma, Mysore
10	Sri B.G.Rudrappa
11	Sri Bhanu Bhushan, Member CERC