

**BEFORE THE HONOURABLE KERALA STATE ELECTRICITY  
REGULATORY COMMISSION**

**IN THE MATTER OF:** Proposal to approve the restrictive measures on electricity usage for the months of April-2012 to June-2012

**PETITIONER:** Kerala State Electricity Board  
Vydyuthi Bhavanam, Pattom,  
Thiruvananthapuram - 695 004

The petitioner named above respectfully submits as under:

1. KSEB, vide its ARR&ERC petition for the year 2012-13, has submitted before the Hon'ble Commission that, the power situation in the State has become most critical due to the combined impact of the following reasons.
  - (i) Unprecedented increase in the energy and peak demand
  - (ii) Peculiar load curve of the Kerala Power system:
    - 1700 MW to 1800 MW during night off-peak hours between 23:00 hrs to 05:00 hrs.
    - 2400 MW to 2500MW during morning peak between 05:00 hrs to 09:00 hrs
    - 2200 MW to 2300 MW during day time between 09:00 hrs to 18:00 hrs
    - 3300 MW to 3500MW during peak hours between 18:00 hrs to 23:00 hrs
  - (iii) Delay and difficulties in execution of hydel projects in the State.
  - (iv) Delay in execution of interstate transmission system.
  - (v) Exorbitant increase in the price of liquid fuels.
  - (vi) Progressively worsening trend of hydro-thermal ratio
  - (vii) Non-availability of cheaper power in the open market.
2. In order to tide over the situation, KSEB has proposed following regulations on power supply during the year 2012-13.
  - (i) HT,EHT, bulk consumers and Railways will be permitted to consume 85% of the average energy consumption during previous one year at the normal tariff determined by the Hon'ble Commission.
  - (ii) LT-II, LT-IV, LT- VI (A), VI(B), VI (C), VII (A), VII(B) and VII(C) categories of consumers will be permitted to consume 85% of the average energy consumption during previous one year at the normal tariff determined by the Hon'ble Commission.
  - (iii) Domestic consumers will be permitted to consume upto 300 units per month at the normal tariff determined by the Hon'ble Commission.

- (iv) The consumers will be allowed to consume energy over and above the aforesaid ceiling on payment of actual cost of additional power purchase / generation from liquid fuel stations based on the marginal cost principles.
  - (v) LT-V Agriculture, LT-VI(D) Orphanages and public lighting are proposed to be exempted from such regulation.
3. However the power situation has further worsened since the filing of the ARR due to the followings reasons.
- (i) Non availability of open access for the power sourced through traders.
  - (ii) Ban imposed by the Karnataka State Government under section-11 of the Electricity Act-2003 on the sale of power outside the State.
  - (iii) Intervention by the Hon'ble High Court of Andhra Pradesh on allowing open access
  - (iv) Exorbitant rise in the clearing price of the electricity transacted through energy exchanges
  - (v) Short-fall in the summer rains and reduction on the energy availability from hydel sources.
  - (vi) Excessive increase in the energy and peak demand over the same projected in the ARR.
4. A detailed appraisal on the emerging power situation is give below.

### Review of Electricity Demand

5. The average energy demand per day, peak demand during evening as well as morning hours have shown excessive increase compared to the previous years. The details are given below.

Table-1. Comparison of energy demand (MU/day)

Month	2009-10	2010-11		2011-12	
	Demand (internal) (MU/day)	Demand (internal) (MU/day)	% increase	Demand (internal) (MU/day)	% increase
Apr	46.98	48.76	3.77%	51.30	5.21%
May	46.83	49.72	6.19%	54.33	9.27%
Jun	44.14	44.69	1.25%	47.76	6.87%
Jul	41.57	43.53	4.73%	47.71	9.60%
Aug	44.64	44.65	0.01%	48.47	8.56%
Sep	44.91	46.65	3.88%	49.43	5.96%
Oct	45.83	46.36	1.16%	52.19	12.58%
Nov	45.69	48.25	5.61%	51.43	6.60%
Dec	47.35	47.46	0.24%	52.80	11.25%
Jan	47.12	49.06	4.13%	53.00	8.03%
Feb	50.09	49.77	-0.65%	55.25	11.01%
Mar	53.29	54.81	2.85%	61.00	11.29%
Average	46.52	47.80	2.98%	52.05	8.89%

Table-2. Comparison of the peak demand

Month	2009-10	2010-11		2011-12	
	Peak demand met (MW)	Peak demand met (MW)	% of increase	Peak demand met (MW)	% of increase
Apr	2799	2837	3.77%	3032	6.87%
May	2852	2930	6.19%	3031	3.45%
Jun	2836	2830	1.25%	2874	1.55%
Jul	2727	2675	4.73%	2896	8.26%
Aug	2775	2730	0.01%	2898	6.15%
Sep	2809	2789	3.88%	2953	5.88%
Oct	2867	2812	-1.92%	3012	7.11%
Nov	2911	2832	-2.71%	3107	9.71%
Dec	2868	2930	2.16%	3145	7.34%
Jan	2884	2918	1.18%	3098	6.17%
Feb	2920	2960	1.37%	3221	8.82%
Mar	2998	3119	4.04%	3348	7.34%
Max	2998	3119	2.00%	3348	7.34%

Table-3. Comparison of the morning peak demand

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
June	1570	1667	1870	1817	1975	2140	2098
July	1517	1642	1696	1859	1873	1919	2183
August	1619	1759	1886	1838	1954	1947	2167
September	1594	1653	1797	1797	1963	2016	2317
October	1797	1673	1791	1845	2039	2029	2322
November	1797	1777	1879	1886	2041	2045	2415
December	1797	1811	1919	1898	2080	2099	2459
January	1797	1858	1965	1918	2099	2199	2490
February	1797	1944	2029	2070	2231	2242	2520
March	1797	2034	1939	2079	2291	2354	2550
April	1840	1951	1943	2024	2171	2298	
May	1826	1933	1905	2028	2195	2307	

6. Considering the present trend of increase in energy and peak demand, the average energy demand, peak demand and morning peak demand expected for April-2012 and May-2012 are detailed below.

Table-4. Energy and peak demand expected for the months of April & May-2012

Month	Energy demand	Morning peak demand	Peak Demand
	(MU/day)	(MW)	(MW)
Apr-12	59.00	2500	3300
May-12	59.00	2500	3300

7. The energy availability and capacity availability from various sources to meet the emerging energy and peak demand are discussed below.

**(a) Hydel availability**

8. The total storage as on 27-03-2012 was 1681 MU. Considering a 20% reduction in summer inflow during the month of March-2012, the maximum inflow that can be expected for the remaining days of the water year till 31<sup>st</sup> May-2012 would be about 200.00 MU. Considering the necessity for reserving 550 MU storage as on 1<sup>st</sup> of June-2012 to avoid any contingency due to delay of onset of monsoon, the water available for generation till 31<sup>st</sup> May-2012 is about 1331.00 MU and the average hydel generation possible is 20.48MU per day. The details are given in the Table below.

**Table-5. Review of hydel availability**

	Particulars		
1	Storage as on 28-3-2012	1681.00	MU
2	Inflow anticipated from April & May-2012 (considering the short fall in summer rain, the inflow is likely to be further less)	200.00	MU
3	Total (10+(2))	1881.00	MU
4	Balance storage to be kept as on 01-06-2012	550.00	MU
5	Net water available for generation	1331.00	MU
6	Average hydro Generation possible for Apr & May-2012	20.48	MU/day

9. Considering the scheduled maintenance and limited storage facility in the run-off-the river and medium storage plants, the maximum capacity availability during peak hours are detailed below.

Table-6. Capacity available from hydel to meet the peak demand

Month	Capacity available (MW)
Apr-12	1650
May-12	1650

**(b) Allocation from CGS**

10. As on today, KSEB has a total allocation of 1265.60MW from CGS. The details are given below.

Table- 7. Capacity allocation from CGS

No.	Power Plant	Installed Capacity	Allocation	Allocated Capacity to KSEB	Aux Consumption	Target PLF
		(MW)	(%)	(MW)	(%)	(%)
1	TALCHER - Stage II	2000	21.60%	432.0	6.50%	88.00%
2	NLC- Exp- Stage-1	420	16.38%	68.8	9.50%	85.00%
3	NLC-II- Stage-1	630	10.43%	65.7	10.00%	75.00%
4	NLC-II- Stage-2	840	11.14%	93.6	10.00%	75.00%
5	RSPTS Stage I & II	2600	12.45%	323.7	6.50%	89.00%
6	MAPS	440	5.41%	23.8	10.00%	68.50%
7	KAIGA Stg I	440	9.33%	41.1	10.00%	75.00%
8	KAIGA Stg II	440	8.65%	38.1	10.00%	75.00%
11	Simhadri Exp	1000	8.76%	43.8	6.50%	85.00%
10	Farakka STP	1600	3.94%	63.0	6.50%	85.00%
11	Kahalgan	840	3.89%	32.7	6.50%	85.00%
12	Talcher-I	1000	3.94%	39.4	10.50%	82.00%
				<b>1265.6</b>		

11. Considering a higher availability from CGS during April & May-2012 (usually the maintenance are not scheduled during summer months to ensure maximum availability), KSEB expects a capacity availability of 1050 MW and energy availability of about 25.00 MU per day from CGS for the months of April and May-2012.

**(c) Small IPPs including Wind, Ullumakal, MP steel etc.**

12. KSEB expect an average energy availability of 0.39MU per day from small IPPS and capacity of 23 MW for the months of April-2012 and May-2012.

**(d) Energy arranged through traders and open access received for April-2012 and May-2012.**

13. Anticipating the energy shortage and peak shortage for the months of April-2012 to June-2012, KSEB has issued LOI for procuring about 350MW @ 8.4 MU/day for the month of April-2012 and 348 MW @8.20 MU/day for the month of May-2012. However, the open access was been received only for a maximum capacity of 80MW @0.73 MU/day for April -2012 and about 150 MW @1.44 MU/day for May-2012. The details are given below.

**Table -8. Details of the open access requested and received**

Month	Trader/ Source	Date of requisition	Tie up/ Open access requested		Period of requisition	Open Access received		Remarks	Appl No.
			MW	MU		MW	MU		
<b>Apr-12</b>									
	JSW PTC		100	72					
	PTC	APP No.14223 dtd25.01.2012	200	144.00	01/04/12 to 30/04/12	50	15	Curtailed approval due to non availability of link margin	8207 A
	WARDHA Power	APP No.KSEB 8 dtd 24.01.2012	50	36.00	01/04/12 to 30/04/12	30.52 & 19	6.984	Curtailed approval due to non availability of link margin	8202 A
<b>May-12</b>									
	PTC	APP No.14368 dtd 27.02.2012	200	148.80	01/05/12 to 31/05/12	100 & 65	24.49	Curtailed approval due to non availability of link margin	8289 A
		APP No.14407 dtd 27.02.2012	97.7	72.69	01/05/12 to 31/05/12	56.2 & 3 4.4	13.367	Curtailed approval due to non availability of link margin	8280 A
	WARDHA Power	APP No.KSEB 9 dtd 22.02.2012	50	37.20	01/05/12 to 31/05/12	28.8 & 17.6	6.8448	Curtailed approval due to non availability of link margin	8284 A

14. It is further submitted before the Hon'ble Commission that, the open access received for the months of February-2012 and March-2012 was only about 20% of the requisition. The details are given as Annexure-1.

15. It is further submitted, during the coming months, there is a very remote chance to procure additional power through traders from outside the State due to the following.

- (i) all the southern states and most of the other states are facing acute power shortages
- (ii) There are limitations in importing power from other regions to the southern region.
- (iii) Intervention of the Hon'ble High Court of Andhra Pradesh with regard to Open Access.
- (iv) Ban imposed by the Karnataka State Government on the generators and traders on sale of power outside the State.

**(e) Energy availability from energy exchanges**

16. The hourly details of the capacity and rates quoted at energy exchanges IEX and PXIL during the last two weeks from 14-03-2012 are given as Annexure-2(a) to 2(o). The summary of the details are given below.

Table-9. Summary of the quantity quoted and received from energy exchanges

Sl No.	Date	Quantity quoted	Quantity	Amount	Avg. Rate
		(MU)	(MU)	(Rs.Cr)	(Rs/kWh)
1	14-Mar-2012	12.80	1.31	1.30	9.95
2	15-Mar-2012	14.50	0.25	0.36	14.19
3	16-Mar-2012	13.00	0.41	0.39	9.49
4	17-Mar-2012	13.00	0.88	0.87	9.86
5	18-Mar-2012	14.50	0.55	0.49	8.84
6	19-Mar-2012	15.00	0.86	0.85	9.88
7	20-Mar-2012	14.25	0.77	0.70	9.08
8	21-Mar-2012	15.30	0.94	0.83	8.80
9	22-Mar-2012	13.68	0.76	0.76	10.02
10	23-Mar-2012	10.76	0.75	0.77	10.28
11	24-Mar-2012	10.67	0.08	0.10	12.15
12	25-Mar-2012	11.03	0.16	0.20	12.15
13	26-Mar-2012	11.00	0.36	0.35	9.71
14	27-Mar-2012	11.13	0.07	0.04	6.76
15	28-Mar-2012	11.23	0.14	0.18	13.00
	Total	191.85	8.29	8.19	9.87
	Average	12.79	0.55	0.55	9.87
	Quantity received as (%) of quantity quoted		4.32		

17. As detailed above, the average energy procured from energy exchanges was 0.55 MU/day only, even at the excessive average rate of Rs 9.87 per unit. It is further submitted that, the quantity received was about 4.32% of the quantity requisitioned by KSEB.

18. Considering the energy shortage in southern regions and also due to the likely further increase in energy demand during April and May-2012 due to extreme summer, KSEB could not depend on energy exchanges to meet the energy requirement.

**(f) Summary of the energy availability from Hydel, CGS, small IPPs and traders.**

19. The energy shortage and peak power shortage expected for the month of April and May-2012 after considering the availability from hydel, CGS, small IPPs, traders etc are detailed below.

Table-10. Energy demand and Supply availability

Month	Energy Demand	Hydel	CGS	Small IPS	Traders and short-term purchase	Total	Short fall to be met from liquid fuel stations	Shortage as a (%) of total demand
	(MU/day)	(MU/day)	(MU/day)	(MU/day)	(MU/day)	(MU/day)	(MU/day)	(%)
Apr-12	59.00	20.48	25.00	0.39	1.00	46.87	12.13	21%
May-12	59.00	20.48	25.00	0.39	1.44	47.31	11.69	20%

Table-11. Peak demand and Supply availability

Month	Peak demand	Hydel	CGS	Small IPS	Purchase / swap return (already made)	Total	Short fall to be met through traders/ short term market	Shortage as a (%) of total demand
	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(%)
Apr-12	3300	1650	1050	23	80	2803	497	15.1%
May-12	3300	1650	1050	23	150	2873	427	12.9%

20. KSEB expects an energy shortage of about 21% and capacity shortage of upto 15.10% during the coming months. As detailed above, the options available with KSEB are either to reduce the consumption through appropriate restrictive measures or to schedule power from liquid fuel stations.

**(g) Price of the energy availability liquid fuel stations**

21. The price of the energy available from liquid fuel stations BDPP, KDPP, RGCCPP - Kayamkulam, BSES and KPCL are detailed below.

Table-10. Energy price of liquid fuel stations

Sl.No.	Station	Energy in MU	Rate (Rs./ kWh)
		Availability	
1	RGCCPP	8.11	11.45
2	BSES	3.77	11.20
3	KPCL	0.35	11.59
4	BDPP	1.00	11.45
5	KDPP	1.00	11.18

For scheduling the entire additional energy requirement of about 12.00 MU per day @ Rs 11.50 per unit, KSEB has to incur an additional amount of Rs 13.80 crore daily. It is further submitted that, considering the average revenue from tariff of Rs 3.40 per unit and the average T&D loss of 16%, the additional liability on KSEB for scheduling power from liquid fuel stations and supply to the consumers would incur an additional liability of Rs 10.37 crore per day. However, the present financial situation of the Board does not permit to incur such a huge additional financial liability.

22. In order to tide over the critical power situation expected for April and May-2012, KSEB proposes the following restrictive measures on power usage w.e.f 1<sup>st</sup> April-2012 to 30<sup>th</sup> June-2012 or till the power position improves.

- (i) Impose ½ hour cyclic load shedding on all 11 kV feeders during the period between 6:30 pm to 10:30 pm.



KSEB expects a reduction to the extent of 350MW on peak demand and 1.2 MU per day on energy consumption by imposing the cyclic load shedding as above.

- (ii) The electricity usage to all HT and EHT consumers and Bulk Licensees at normal tariff may be limited to 80% of the previous one year average consumption. The excess consumption over the limit may be charged @ Rs 11.00 per unit, which is the average marginal cost of sourcing power from liquid fuel stations.
23. The daily consumption of the HT&EHT consumers including licensees is about 12.69 MU per day. By limiting the normal usage as 80% of the previous one year consumption, the reduction in energy consumption at consumer end is 2.53 MU per day and the reduction on energy consumption at purchaser end is about 2.80 MU/day.
24. Thus the total energy reduction through the proposed measures would be about 4.00 MU per day and reduction in peak demand would be 350 MW.

Hon'ble Commission may be pleased to approve the restrictive measures proposed for reducing the dependency on liquid fuel stations and to tide over the present energy and financial crisis.

#### **Prayer**

In view of the facts and circumstances as explained above, KSEB most humbly prays that the Hon'ble Commission may be pleased to approve the following restrictive measures on electricity usage w.e.f 01-04-2012 to 30-06-2012 or till the power position of the State improves:

- (1) Impose ½ hour cyclic load shedding on all 11 kV feeders during the period between 6:30 pm to 10:30 pm.
- (2) The electricity usage of all the HT and EHT consumers and Bulk Licensees at normal tariff may be limited to 80% of the previous one year average consumption. The excess consumption over the said limit may be allowed to be charged @ Rs 11.00 per unit.

CHAIRMAN