



KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated under the Indian Companies Act, 1956)

Tariff & Regulatory Affairs Cell

Vidyuthi Bhavanam Pattom Thiruvananthapuram 695 004 India

Phone (O) +91 471 2514554, 2514319

Fax: +91 471 2448213 E-mail: trac@ksebnet.com

KSEB/TRAC/KSERC/ 2020-21/ 1357

16-2-2021

To


**The Secretary,
Kerala State Electricity Regulatory Commission,
KPFC Bhavanam,
Vellayambalam.**

Sir,

Sub: Petition seeking approval for entering into short term power procurement arrangement – reg:

KSEBL humbly submit herewith a petition seeking approval for entering into short term power procurement arrangement with GMR Energy Trading Ltd (GMRETL), Adani Enterprises Ltd (AEL) and PTC India Ltd (PTC) through DEEP portal for meeting power shortage during April and May 2021 for kind consideration.

Yours faithfully,


Deputy Chief Engineer (Commercial & Planning)
Full powers of Chief Engineer

Acc: Cheque No. 376090
(Original + 5 copies)

AFFIDAVIT VERIFYING THE PETITION

I, Sri. B.Pradeep, son of Sri. P.Balachandran aged 55 years residing at Vipanchika, Anayara P.O., Thiruvananthapuram – residing at Veliyathu, Peringara P.O., Thiruvalla 689108 , do solemnly affirm and say as follows:

I am the Deputy Chief Engineer (Commercial & Planning) with full powers of Chief Engineer of the Kerala State Electricity Board Ltd., Vydyuthi Bhavanam, Pattom, Thiruvananthapuram, and the Petitioner in the above matter and I am duly authorized by the Board to make this affidavit on its behalf. I solemnly affirm at Thiruvananthapuram on this the 16th day of February 2021 that the contents of the above submission are true to my information, knowledge and belief. I believe that no part of it is false and no material has been concealed there from.

Deponent

Deputy Chief Engineer (Commercial & Planning)
With full powers of Chief Engineer
Kerala State Electricity Board Limited
Vydyuthi Bhavanam, Pattom
Thiruvananthapuram – 695 004.

VERIFICATION

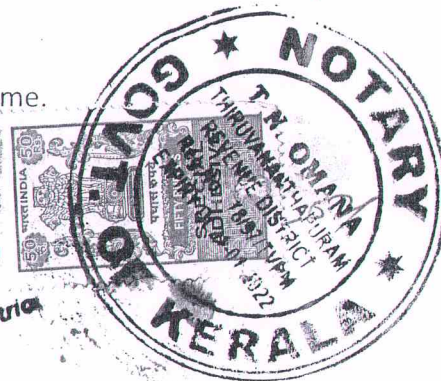
I, the above named deponent, solemnly affirm at Thiruvananthapuram on this, the 16th day of February 2021 that the contents of the affidavit are true to my information, knowledge and belief, that no part of it is false and that no material has been concealed there from.

Deponent

Deputy Chief Engineer (Commercial & Planning)
With full powers of Chief Engineer
Kerala State Electricity Board Limited
Vydyuthi Bhavanam, Pattom
Thiruvananthapuram – 695 004.

Solemnly affirmed and signed before me.

16.2.2021 Advocate and
T.N. OMANA
Advocate & Notary
Thiruvananthapuram Revenue District
Kerala State South India



BEFORE THE HONOURABLE KERALA STATE ELECTRICITY REGULATORY COMMISSION

at its office at C.V. Raman Pillai Road, Vellayambalam, Thiruvananthapuram.

FILING NO

CASE No.

IN THE MATTER OF:

Petition under Regulation 77(3)(f) of the KSERC (Terms and Conditions for Determination of Tariff) Regulations 2018 seeking approval for entering into short term power procurement arrangement with GMR Energy Trading Ltd (GMRETL), Adani Enterprises Ltd (AEL) and PTC India Ltd (PTC) through DEEP portal for meeting power shortage during April and May 2021.

Petitioner : Kerala State Electricity Board Ltd.,
Vydyuthi Bhavanam, Pattom,
Thiruvananthapuram-695 004.

Respondents : 1. PTC India Ltd., New Delhi.
2. GMR Energy Trading Ltd., New Delhi
3. Adani Enterprises Ltd., Ahemadabad.

**BEFORE THE HON'BLE KERALA STATE ELECTRICITY REGULATORY
COMMISSION**

In the matter of : ~~Petition under Regulation 77(3)(f) of the KSERC (Terms and Conditions for Determination of Tariff) Regulations 2018 seeking approval for entering into short term power procurement arrangement with GMR Energy Trading Ltd (GMRETL), Adani Enterprises Ltd (AEL) and PTC India Ltd (PTC) through DEEP portal for meeting power shortage during April and May 2021.~~

Petitioner : Kerala State Electricity Board Limited

Respondents : 1. GMR Energy Trading Ltd (GMRETL),
2. Adani Enterprises Ltd (AEL)
3. PTC India Ltd (PTC),

KSEBL most humbly submit the following:

1. KSEBL has filed a petition before Hon'ble Commission, admitted by Hon'ble Commission as OP6/2021 and scheduled for hearing on 11-2-2021 seeking approval for entering into short term power procurement arrangement through banking transactions during the period from February 2021 to September 2021 with Tata Power Delhi Distribution Ltd. through PTC India Ltd.
2. In the said petition it was submitted that since the requirement of KSEBL during the months of April and May 2021 is not fully met through the proposed banking arrangement, KSEBL proposes to meet the balance quantum through short term bidding through DEEP portal and through day ahead markets. It was also submitted that approval for tie-ups, if any, to be made through transparent competitive process on short term basis under DEEP portal will be sought from the Hon'ble Commission as and when the same is processed. The instant submission is made accordingly.
3. On analysis of the peak and energy availability in the State for the period from February 2021 to May 2021, considerable shortage upto around 500MW during various parts of a day is anticipated. MoP vide letter dated 10-2-2021 has pointed out that the demand of power is increasing rapidly from October 2020 onwards and Distribution companies shall tie-up adequate generation capacity which corresponds to their demand of power. A copy of the letter is enclosed as **Annexure-1**.

4. The banking tender was invited to meet a portion of the expected power deficit during summer 2021 (March 2021 to May 2021) and to manage the expected energy surplus during Monsoon 2021 (Mid June 2021 to Sep-2021), as shown below:

Table A:

Supply period			Return period				
Month	Duration/MW		Month	Duration/ Max MW return possible against each slot			
	RTC	14-24		00:00 to 05:00	05:00 to 08:00	08:00 to 18:00	22:00 to 24:00
Mar-21	50	100	16-06-2021 to 30-06-2021	150	100	70	100
Apr-21	150	130	Jul-21	300	250	100	150
May-21	50	130	Aug-21	300	200	100	150
			Sep-21	100	70	70	100

5. It is submitted that the quantum of supply during March 2021 and May 2021 was limited to match the ability to retain the quantum during subsequent monsoon period.
6. As already submitted in the banking petition, the offer submitted by PTC(trader), the successful bidder is as shown below:

Supply period			Return period			
Month	Duration/MW		Month	Duration/ Max MW return possible against each slot		MWh
	RTC	14-24hrs		0-5 hrs	22 to 24hrs	
Mar-21	50	100	16-06-2021 to 30-06-2021	126	100	12450
Apr-21	50		Jul-21	180	140	36580
			Aug-21	177.9	140	36254.5
			Sep-21	100	100	21000

7. No banking offers was received for the month of May 2021 and for the month of April 2021, PTC had offered only 50MW RTC against the requirement of 150MW RTC and 130MW from 14-24 hrs.
8. Under above circumstances, the LGBs for the month of April and May 2021 shows round the clock deficit and hence firm tie up of the balance quantum of power has to be ensured.
9. The LGB during April and May 2021 after considering the proposed banking transactions in the worst and best scenario i.e. with and without considering 10%

credible outage in respect of Central Generating Stations and LTA generators are as shown below:

Worst scenario:

APRIL 2021							
Sources	00:00 to 05:00	05:00 to 08:30	08:30 to 14:00	14:00 to 17:00	17:00 to 18:30	18:30 to 22:30	22:30 to 24:00
Hydro	907	678	841	1041	904	1548	1287
CGS @ 10% Credible Outage	1260	1260	1260	1260	1260	1260	1260
LTA @ 10% Credible Outage	990	990	990	990	990	990	990
Wind/Solar	10	45	100	120	50	15	10
Swap	50	50	50	50	50	50	50
Total Availability	3217	3023	3241	3461	3254	3863	3597
Demand(Average)	3341	3161	3387	3689	3412	4109	3849
Demand(Max)	3873	3482	3699	3962	3718	4424	4122
Surplus(+)/Deficit(-) with Avg Demand	-124	-138	-146	-228	-158	-246	-252
Surplus(+)/Deficit(-) with MaxDemand	-656	-459	-458	-501	-464	-561	-525

MAY 2021							
Sources	00:00 to 05:00	05:00 to 08:30	08:30 to 14:00	14:00 to 17:00	17:00 to 18:30	18:30 to 22:30	22:30 to 24:00
Hydro	847	678	799	1032	981	1482	1209
CGS (with 10% C Outage)	1350	1350	1350	1350	1350	1350	1350
LTA (With 10% Cr outage)	990	990	990	990	990	990	990
Wind/Solar	10	45	100	120	50	15	10
Swap	0	0	0	0	0	0	0
Total Availability	3197	3063	3239	3492	3371	3837	3559
Demand(Average)	3327	3214	3412	3683	3502	4114	3907
Demand(Max)	3906	3492	3679	3956	3706	4376	4115
Surplus(+)/Deficit(-) with Avg Demand	-130	-151	-173	-191	-131	-277	-348
Surplus(+)/Deficit(-) with Max Demand	-709	-429	-440	-464	-335	-539	-556

Best scenario:

APRIL 2021							
Sources	00:00 to 05:00	05:00 to 08:30	08:30 to 14:00	14:00 to 17:00	17:00 to 18:30	18:30 to 22:30	22:30 to 24:00
Hydro(Idukki full availability during peak hrs)	907	678	841	1041	904	1678	1287
CGS without 10% Credible Outage	1400	1400	1400	1400	1400	1400	1400
LTA without 10% Credible Outage	1100	1100	1100	1100	1100	1100	1100
Wind/Solar	10	45	100	120	50	15	10
Swap	50	50	50	50	50	50	50
Total Availability	3467	3273	3491	3711	3504	4243	3847
Demand(Average)	3341	3161	3387	3689	3412	4109	3849
Demand(Max)	3873	3482	3699	3962	3718	4424	4122
Surplus(+)/Deficit(-) with Avg Demand	126	112	104	22	92	134	-2
Surplus(+)/Deficit(-) with MaxDemand	-406	-209	-208	-251	-214	-181	-275

MAY 2021							
Sources	00:00 to 05:00	05:00 to 08:30	08:30 to 14:00	14:00 to 17:00	17:00 to 18:30	18:30 to 22:30	22:30 to 24:00
Hydro(Idukki full availability during peak hrs)	847	678	799	1032	981	1612	1209
CGS without 10% Credible Outage	1500	1500	1500	1500	1500	1500	1500
LTA without 10% Credible Outage	1100	1100	1100	1100	1100	1100	1100
Wind/Solar	10	45	100	120	50	15	10
Swap	0	0	0	0	0	0	0
Total Availability	3457	3323	3499	3752	3631	4227	3819
Demand	3327	3214	3412	3683	3502	4114	3907
	3906	3492	3679	3956	3706	4376	4115
Surplus(+)/Deficit(-) with Avg Demand	130	109	87	69	129	113	-88
Surplus(+)/Deficit(-) with Max Demand	-449	-169	-180	-204	-75	-149	-296

10. From the above it is observed that even in the best scenario, i.e. by considering the full availability of CGS & LTA quantum and the full availability of machines at Idukki Station, there is power deficit to the tune 180-440MW round the clock during April and May 2021 after taking into account tie up under banking arrangement. The ideal scenario is unlikely to happen as unanticipated forced outages may occur in internal generating stations as well as power tied up from CGS/LTA.

11. Therefore, it was decided to procure 100MW firm power on RTC basis during April and May 2021 and 100 MW during 14-24 hrs through short term market (DEEP portal), since the demand is likely to pick up from afternoon onwards, so that a total of 200MW can be tied up from 14-24hrs through DEEP portal when day ahead market rates are expected to be high in view of increase of demand and assembly elections in major States. Balance deficit from 0-14 hrs may be met from the power exchanges when the rates are noticed to be comparatively less. Contingency management can also be through power exchanges. Therefore, it was decided to purchase short term power through DEEP portal on firm basis as shown below:

Requisition No	Period		Required quantity MW	Duration hrs
	From	To		
1	01-04-2021	30-04-2021	100	RTC
2	01-04-2021	30-04-2021	100	14-24
3	01-05-2021	31-05-2021	100	RTC
4	01-05-2021	31-05-2021	100	14-24

12. Accordingly, short term tender was uploaded in DEEP portal on 28-01-2021 as per table A below as per the terms and conditions of the RfP followed as per MoP guidelines for short term power procurement notified vide Resolution No. 23/25/2011-R&R (Vol-III) dtd. 30-3-2016, by giving wide publicity.

Table A (Period and Quantum of Power required)

Requisition No	Period		Required quantity MW	Duration hrs	Minimum Bid quantity MW
	From	To			
1	01-04-2021	15-04-2021	100	RTC	25
2	01-04-2021	15-04-2021	100	14-24	25
3	16-04-2021	30-04-2021	100	RTC	25
4	16-04-2021	30-04-2021	100	14-24	25
5	01-05-2021	15-05-2021	100	RTC	25
6	01-05-2021	15-05-2021	100	14-24	25
7	16-05-2021	31-05-2021	100	RTC	25
8	16-05-2021	31-05-2021	100	14-24	25

The minimum bid quantum for participation was 25 MW and the delivery point was Kerala Periphery.

13. The technical bids were opened on 11-02-2021. The quantum of power offered by the bidders through 11 bids against the requisitions floated by KSEBL is as shown below:

Bidders (Traders/Generators)	Quantum offered against				
	April-2021		May-2021		
	RTC	14-24	RTC May 1 st half	RTC May 2 nd half	14-24
Tata Power Trading Co Ltd (TPTCL- 2 bids)	80		130	130	
PTC India Ltd (PTC- 6 bids)	325	325	425	475	425
GMR Energy Trading Ltd (GMRETL- 1 bid)	100	100	100	100	100
Adani Enterprises Ltd (AEL-2 bids)	100	100	100	100	100
TOTAL (11 bids)	605	525	755	805	625

The existing standing committee constituted vide B.O.dated 11-04-2016, for evaluating all future short term power procurement through DEEP e-bidding portal made the following observations on the 11 bids submitted by the bidders as shown below:

- All the bidders have accepted the terms and conditions of the RfP dated 28-01-2021 floated by KSEBL
- The original BGs against the required EMD were also received from these bidders.
- The technical bids submitted were in line with terms and conditions of the RfP floated by KSEB Ltd and hence acceptable.

14. The Initial Price Offers submitted by the bidders were opened on 12-02-2021, followed by e RA auction.

eRA Result:

On completion of the bid process the following rates were discovered through bucket filling, in DEEP portal:

Period		Bid Qtm MW	Duration hrs	Offered Qtm MW	Price discovered Rs/kwh	Trader
From	To					
01-04-2021	15-04-2021	100	RTC	50	3.04	GMRETL

				50	3.04	AEL
01-04-2021	15-04-2021	100	14-24	50	3.40	GMRETL
				50	3.41	PTC
16-04-2021	30-04-2021	100	RTC	50	3.04	GMRETL
				50	3.04	AEL
16-04-2021	30-04-2021	100	14-24	50	3.42	GMRETL
				50	3.43	PTC
01-05-2021	15-05-2021	100	RTC	50	3.04	GMRETL
				50	3.04	AEL
01-05-2021	15-05-2021	100	14-24	50	3.47	GMRETL
				50	3.48	PTC
16-05-2021	31-05-2021	100	RTC	50	3.04	GMRETL
				50	3.04	AEL
16-05-2021	31-05-2021	100	14-24	50	3.47	GMRETL
				50	3.48	PTC

15. Based on the above, the Standing Committee for short term power procurement had a detailed discussion on 12-02-2021 and the following observations and decisions were made:

- There is fair participation in the tender and a total of 11 bids were received against the requisitions during April 2021 and May 2021.
- It is also noticed that the average price discovered in the power exchange in S3 region for RTC power and from 14-24 hrs during April and May of 2017 to 2019 (period during 2020 not considered since the rates do not indicate the normal demand due to lockdown restrictions in view of n-covid 19 pandemic prevailing all over the country) is more than the price discovered in this tender. In addition losses at regional periphery are applicable for power drawn from exchange. Hence the prices discovered at Kerala Periphery are comparable. The details are as shown below:

Month	IEX S3 rates					
	RTC power			14-24 hrs		
	2017	2018	2019	2017	2018	2019
April	3.156	3.99	3.456	3.447	4.466	3.921
May	2.964	4.573	3.351	3.319	5.358	3.842

- In the recent bids invited by APPCC (Andhra Pradesh), PFCCL (NMDC periphery) and TANGENCO(Tamil Nadu) in DEEP portal the price discovered for RTC power during

April 2021 and May 2021 is ranging from Rs.3.29/kwh to Rs.3.59/kwh. Similarly the rate of power in the above bids for different time slots is comparatively high.

- The trend of peak demand during April and May 2021 is expected to be high in view of summer season and upcoming Assembly Elections. Entering into contracts for additional power i.e. 100 MW RTC and 100MW MW from 14-24 hrs on firm basis through DEEP portal is essential to meet the demand. Hence procuring firm power on short term basis based at the price discovered in DEEP portal on 12-02-2021 will provide more flexibility during summer 2021 in market operations, for meeting the balance power deficit.

A copy of the committee report is enclosed as **Annexure-2**.

The bid validity period of the tender is 30 days from the date of e Reverse Auction i.e. upto 13-03-2021.

16. After considering the banking arrangements already made and the offers received in the short term tender, the total quantum of firm power available for meeting the expected power deficit from February 2020 to May 2020 is as shown below:

Month	Duration	Quantum (MW)
01-03-2021 to 31-03-2021	RTC	50
	14-24	100
01-04-2021 To 30-04-2021	RTC	150
	14-24	100
01-05-2021 to 31-05-2021	RTC	100
	14-24	100

17. Under above circumstances, since the price discovered for the month of April and May 2021 in DEEP portal are reasonable, when compared to the market rates discovered during these months in the previous three years and only the portion of the expected power deficit is proposed to be met on firm basis, it is decided to issue Letter of Award (LoA) for short term power procurement arrangement with GMR Energy Trading Ltd (GMRETL), Adani Enterprises Ltd (AEL) and PTC India Ltd (PTC) as per the price discovered in the DEEP portal as shown below, subject to approval of Hon'ble Commission. (Annexure-3,4,5)

Table 1 : Letter of Award to Adani Enterprises Ltd (AEL)

Period	Duration Hrs	Quantum (MW) on Firm basis	Rate at Delivery Point i.e. Kerala Periphery	Source of Power
01.04.2021 to 30.04.2021	RTC	50	Rs. 3.04/- (Rupees Three and four paise Only) per kWh	Raipur Energen Ltd, Chhattisgarh in the Western Region.
01.05.2021 to 31.05.2021	RTC	50	Rs. 3.04/- (Rupees Three and four paise Only) per kWh	

Table 2 : Letter of Award to GMR Energy Trading Ltd (GMRETL),

Period	Duration Hrs	Quantum (MW) on Firm basis	Rate at Delivery Point i.e. Kerala Periphery	Source of Power
01.04.2021 to 30.04.2021	RTC	50	Rs. 3.04/- (Rupees Three and four paise Only) per kWh	DB Power Ltd, Chhattisgarh in the Western Region.
01.05.2021 to 31.05.2021	RTC	50	Rs. 3.04/- (Rupees Three and four paise Only) per kWh	
01.04.2021 to 15.04.2021	14:00 to 24:00	50	Rs. 3.40/- (Rupees Three and forty paise Only) per kWh	
16.04.2021 to 30.04.2021	14:00 to 24:00	50	Rs. 3.42/- (Rupees Three and forty two paise Only) per kWh	
01.05.2021 to 31.05.2021	14:00 to 24:00	50	Rs. 3.47/- (Rupees Three and forty seven paise Only) per kWh	


Table 3 : Letter of Award to PTC India Ltd (PTC)

Period	Duration Hrs	Quantum (MW) on Firm basis	Rate at Delivery Point i.e. Kerala Periphery	Source of Power
01.04.2021 to 15.04.2021	14:00 to 24:00	50	Rs. 3.41/- (Rupees Three and forty paise Only) per kWh	Jindal Power Ltd, Madhya Pradesh
16.04.2021 to 30.04.2021	14:00 to 24:00	50	Rs. 3.43/- (Rupees Three and forty two paise Only) per kWh	
01.05.2021 to 31.05.2021	14:00 to 24:00	50	Rs. 3.48/- (Rupees Three and forty eight paise Only) per kWh	

18. KSEBL humbly request approval of Hon'ble Commission to adopt the tariff discovered in accordance with section 63 of the Act and to enter into short term power procurement arrangement with GMR Energy Trading Ltd (GMRETL), Adani Enterprises Ltd (AEL) and PTC India Ltd (PTC) as per the details submitted under paragraph 13 above.

Prayer

Considering the submissions made above, KSEBL humbly request approval of Hon'ble Commission to adopt the tariff discovered in accordance with section 63 of the Act and for entering into short term power procurement arrangement with GMR Energy Trading Ltd (GMRETL), Adani Enterprises Ltd (AEL) and PTC India Ltd (PTC) as per the price submitted under paragraph 13 above.


Deputy Chief Engineer(Commercial & Planning)
With full powers of Chief Engineer

Shram Shakti Bhawan, Rafi Marg,
New Delhi, 10th February, 2021

To Principal Secretaries/Secretaries, Energy/Power Dept., All State Government/
UTs, CMDs of DISCOMs.

Sir,

You are aware that the demand of power is increasing rapidly from October, 2020 onwards. In order to maintain 24x7 reliable supply to all the consumers, it is necessary that the distribution companies tie-up adequate generation capacity which corresponds to their demand of power.

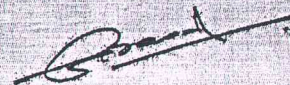
As per the information available with Central Electricity Authority (CEA) almost all the States except Punjab and Chandigarh are having capacity more than their demand. The installed generation capacity is gross capacity, the net available capacity will be less than the capacity mentioned in the list. This will further depend on the portfolio of power to be purchased from different sources.

All the States are requested to send DISCOM-wise details of the capacity which has been tied-up under PPA, projected peak demand for 2021 and in case of short-fall, if any, plan to meet the electricity demand of the States.

Due to increase in demand, it has been experienced that the prices in the power market has started increasing. This is mainly because the depth of market is very small at present. In order to meet the demand from power exchange adequate capacity in power exchange will also be required otherwise with increase in demand the price in the power market will go up. The States, who are having surplus capacity may also consider to sell their surplus power in the power exchange so that the States who are in deficit are able to meet their requirements from power exchanges.

In view of the above, it is requested to kindly send the information as per the enclosed format by 24th February, 2021 through email on npmc.mop.delhi@gmail.com, gmcea@nic.in, cegmcea1@gmail.com,

Yours faithfully



(Ghanshyam Prasad)
Joint Secretary to the Government of India
Ph: 011-2371 0380

Encls: As Above

Tied-up Generation Capacity as per PPA

(All Figures in MW)

Sl. No.	Region / State	Discom	State owned Capacity	Private Sector		Allocated Capacity from Central Generating Stations: (As on 31.12.2020)	Net Available Capacity to meet the Peak Demand	Peak Demand Met during 2020-21 (Upto Jan.)	Projected Peak Demand for 2021-22	Surplus (+) / Shortfall (-)	Plan to meet the Shortfall
				Inter State	Intra State						
1	2	3	4	5	6	7	8=4+5+6+7	9	10	11=8-10	12
1	Chandigarh					239		383			
2	Delhi					4,590		6,314			
3	Haryana					2,903		10,982			
4	Himachal Pradesh					1,482		1,932			
5	Jammu & Kashmir					2,958		2,680			
6	Punjab					2,903		13,148			
7	Rajasthan					3,441		14,364			
8	Uttar Pradesh					7,619		23,747			
9	Uttarakhand					1,117		2,372			
	Northern Region					27,513		67,806			
10	Chhattisgarh					2,536		4,569			
11	Gujarat					4,549		17,305			
12	Madhya Pradesh					7,173		15,668			
13	Maharashtra					8,403		24,058			
14	Daman & Diu					369		352			
15	D.N.Haveli					1,243		854			
16	Goa					633		598			
	Western Region					25,111		61,685			
17	Andhra Pradesh					1,941		10,101			
18	Telangana					2,599		13,252			
19	Karnataka					5,086		12,795			
20	Kerala					2,267		3,775			
21	Tamil Nadu					6,782		15,064			
22	Pondicherry					587		422			
23	Lakshadweep					-		11			
	Southern Region					19,415		53,839			
24	Bihar					5,022		5,938			
25	DVC					3,771		3,283			
26	Jharkhand					1,667		1,602			
27	Orissa					2,240		4,973			
28	West Bengal					2,499		8,681			
29	Sikkim					186		122			
30	Andaman-Nicobar					-		54			
	Eastern Region					15,600		23,563			
31	Arunachal Pradesh					261		149			
32	Assam					1,642		1,987			
33	Manipur					249		249			
34	Meghalaya					344		384			
35	Mizoram					205		128			
36	Nagaland					156		155			
36	Tripura					482		315			
	North-Eastern					3,341		3,107			
	All India					90,979		1,89,644			



KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated under the Indian Companies Act, 1956) CIN:U40100KL2011SGC027424

Office of the Chief Engineer (Commercial & Planning)

8th Floor, Vidyuthi Bhavanam, Pattom, Thiruvananthapuram - 695 004, Kerala.

Telephone: +91 471 2514366, E-mail: dce.cp@kseb.in

Handwritten: HANUMANTH

Certification of conformity of the Bid Process

(DEEP portal reference no. KSEBL/short/20-21/ET-83/28-01-2021)

KSEB Ltd had invited bids for the short term procurement of power from 0-24hrs (RTC) and from 14-24hrs for the period from 01-04-2021 to 31-05-2021 on firm and short term basis from any Sources, as per timelines provided in the RfP floated on 28-01-2021 in DEEP e-bidding portal of MoP.

It is hereby certified by the Standing Committee constituted for the evaluation of RfP bids that, the bid process evaluation of the aforesaid tender is according to the provisions of the RfP document and as notified in para 7.4 of MoP guidelines issued on 30-03-2016 in this regard.

Sl.No.	Standing Committee Members	Signature
1	Deputy Chief Engineer (Commercial & Planning) with full powers of Chief Engineer- Chairperson of the Committee	
2	Chief Engineer(Transmission-System Operation)	
3	Deputy Chief Engineer (Trac)	
4	Deputy Chief Engineer (Grid), O/o The Chief Engineer (Transmission-Sys. Operation), Kalamassery	
5	Executive Engineer II(Commercial)	
6	Finance Officer (Tender Section), O/o Financial Advisor	
7	Divisional Accountant (Power Purchase-Audit), O/o The Chief Internal Auditor	
8	Law Officer II, LA Section, O/o The Legal Advisor & Disciplinary Enquiry Officer - Member	sd/-
9	Asst. Executive Engineer VIII (Commercial)	
10	Asst. Executive Engineer IX (Commercial)	



PHYSICS DEPARTMENT

PHYSICS 551

LECTURE 10

1. The first part of the lecture discusses the concept of a vector field and how it is used to describe the motion of particles in a fluid. It introduces the idea of a velocity field and how it is related to the streamlines of the flow.

2. The second part of the lecture discusses the concept of a scalar field and how it is used to describe the potential energy of a system. It introduces the idea of a potential function and how it is related to the forces acting on a particle.

3. The third part of the lecture discusses the concept of a tensor field and how it is used to describe the stress and strain in a material. It introduces the idea of a stress tensor and how it is related to the forces acting on a surface.

4. The fourth part of the lecture discusses the concept of a vector potential and how it is used to describe the magnetic field. It introduces the idea of a vector potential function and how it is related to the magnetic field lines.

5. The fifth part of the lecture discusses the concept of a scalar potential and how it is used to describe the electric field. It introduces the idea of a scalar potential function and how it is related to the electric field lines.

6. The sixth part of the lecture discusses the concept of a vector potential and how it is used to describe the gravitational field. It introduces the idea of a vector potential function and how it is related to the gravitational field lines.

7. The seventh part of the lecture discusses the concept of a scalar potential and how it is used to describe the pressure field. It introduces the idea of a scalar potential function and how it is related to the pressure field lines.

8. The eighth part of the lecture discusses the concept of a vector potential and how it is used to describe the vorticity field. It introduces the idea of a vector potential function and how it is related to the vorticity field lines.

9. The ninth part of the lecture discusses the concept of a scalar potential and how it is used to describe the temperature field. It introduces the idea of a scalar potential function and how it is related to the temperature field lines.

10. The tenth part of the lecture discusses the concept of a vector potential and how it is used to describe the velocity field. It introduces the idea of a vector potential function and how it is related to the velocity field lines.



KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated under the Indian Companies Act, 1956) CIN:U40100KL2011SGC027424

Office of the Chief Engineer (Commercial & Planning)

8th Floor, Vidyuthi Bhavanam, Pattom, Thiruvananthapuram - 695 004, Kerala.

Telephone: +91 471 2514366, E-mail: dce.cp@kseb.in

Hareendran S

No.CE(C&T)/CML/EE-2/STP/e-tender-7/2020-21/338

Dated 15-02-2021

To

Mr. Arshad Moin,

GMR Energy Trading Ltd, New Shakti Bhavan,

Terminal 3, Opp.ATS Complex,

International terminal, Indira Gandhi International Airport,

New Delhi - 110037

Sir,

Sub: Purchase of power from 01-04-2021 to 31-05-2021 on firm and short term basis from any Sources, through e-bidding portal (DEEP) only - Letter of Award - reg.

- Ref: 1. KSEB Ltd- RfP/ e-Tender Notice - 7 /2020-21 dtd 28-01-2021 with Deep portal Event Ref: No.KSEBL/Short/2020-21/ET/83
2. Your Non Financial Technical Bid opened on 11-02-2021
3. DEEP Portal Event Ref. No : KSEBL/Short/20-21/RA/78 dtd 12-02-2021

This is to inform you that you have been declared as the Successful Bidder against all Requisitions (8 Nos) in the Bid invited by KSEB Ltd vide reference 1 above. Your offer as shown below, submitted vide reference 3 above, is hereby accepted.

Period	Duration (Hrs)	Quantum (MW) on Firm basis	Rate at Delivery Point i.e. Kerala Periphery	Source of Power
01.04.2021 to 15.04.2021	RTC	50	Rs. 3.04/-(Rupees Three and four paise only) per kWh	DB Power Ltd, Chhattisgarh in the Western Region.
16.04.2021 to 30.04.2021	RTC	50	Rs. 3.04/-(Rupees Three and four paise only) per kWh	
01.05.2021 to 15.05.2021	RTC	50	Rs. 3.04/-(Rupees Three and four paise only) per kWh	
16.05.2021 to 31.05.2021	RTC	50	Rs. 3.04/-(Rupees Three and four paise only) per kWh	
01.04.2021 to 15.04.2021	14:00 to 24:00	50	Rs. 3.40/-(Rupees Three and forty paise only) per kWh	

Registered Office : Vidyuthi Bhavanam, Pattom, Thiruvananthapuram - 695 004. Website : www.kseb.in

16.04.2021 to 30.04.2021	14:00 to 24:00	50	Rs. 3.42/- (Rupees Three and forty two paise only) per kWh
01.05.2021 to 15.05.2021	14:00 to 24:00	50	Rs. 3.47/- (Rupees Three and forty seven paise only) per kWh
16.05.2021 to 31.05.2021	14:00 to 24:00	50	Rs. 3.47/- (Rupees Three and forty seven paise only) per kWh

This Letter of Award (LoA) is being issued to you in accordance with clause 4.16 of the RfP document and for applying for short-term open access (STOA) for commencement of power supply from 01-04-2021 onwards, subject to terms and conditions specified in the RfP.

This Letter of Award (LoA) is subject to the approval from Kerala State Electricity Regulatory Commission in the petition filed by KSEBL for adoption of tariff and approval of power procurement.

It is requested that the unconditional acceptance of the soft copy of this LoA may be communicated to KSEBL on or before 22-02-2021 by email. Please record "Accepted Unconditionally" and duly sign and return the duplicate copy of this LoA within 7 days of receipt.

Thanking you,

Yours faithfully,


Dy. Chief Engineer (Commercial & Planning)
 With full Powers of Chief Engineer

Copy to:

The Chief Engineer (Trans-System Operations),
 Load Despatch Centre,
 Kalamassery,
 Kochi, Kerala.



KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated under the Indian Companies Act, 1956) CIN:U40100KL2011SGC027424
Office of the Chief Engineer (Commercial & Planning)
8th Floor, Vidyuthi Bhavanam, Pattom, Thiruvananthapuram - 695 004, Kerala.
Telephone: +91 471 2514366, E-mail: dce.cp@kseb.in

Annexure 4

No.CE(C&T)/CML/EE-2/STP/e-tender-7/2020-21 | 344

Dated 15-02-2021

To

Mr.Ankit Rabadia,
Adani Enterprises Ltd,
Adani Corporate House,
Shantigram, SG highway,
Ahmedabad-382421

Sir,

Sub: Purchase of power from 01-04-2021 to 31-05-2021 on firm and short term basis from any Sources, through e-bidding portal (DEEP) only - Letter of Award - reg.

- Ref: 1. KSEB Ltd- RfP/ e-Tender Notice - 7 /2020-21 dtd 28-01-2021
with Deep portal Event Ref: No.KSEBL/Short/2020-21/ET/83
2. Your Non Financial Technical Bid opened on 11-02-2021
3. DEEP Portal Event Ref. No : KSEBL/Short/20-21/RA/78/12-02-2021

This is to inform that you have been declared as the Successful Bidder against Requisitions 1, 3, 5 and 7 in the Bid invited by KSEB Ltd vide reference 1 above. Your offer as shown below, submitted vide reference 3 above, is hereby accepted.

Period	Duration Hrs	Quantum (MW) on Firm basis	Rate at Delivery Point i.e. Kerala Periphery	Source of Power
01.04.2021 to 15.04.2021	RTC	50	Rs. 3.04/-(Rupees Three and four paise Only) per kWh	Raipur Energen Ltd, Chhattisgarh in the Western Region.
16.04.2021 to 30.04.2021	RTC	50	Rs. 3.04/-(Rupees Three and four paise Only) per kWh	
01.05.2021 to 15.05.2021	RTC	50	Rs. 3.04/-(Rupees Three and four paise Only) per kWh	
16.05.2021 to 31.05.2021	RTC	50	Rs. 3.04/-(Rupees Three and four paise Only) per kWh	

This Letter of Award (LoA) is being issued to you in accordance with clause 4.16 of the RfP document and for applying for short-term open access (STOA) for


commencement of power supply from 01-04-2021 onwards, subject to terms and conditions specified in the RfP.

This Letter of Award (LoA) is subject to the approval from Kerala State Electricity Regulatory Commission in the petition filed by KSEBL for adoption of tariff and approval of power procurement.

It is requested that the unconditional acceptance of the soft copy of this LoA may be communicated to KSEBL on or before 22-02-2021 by email. Please record "Accepted Unconditionally" and duly sign and return the duplicate copy of this LoA within 7 days of receipt.

Thanking you,

Yours faithfully,


Dy. Chief Engineer (Commercial & Planning)
With full Powers of Chief Engineer

Copy to:

The Chief Engineer(Trans-System Operations),
Load Despatch Centre,
Kalamassery,
Kochi, Kerala.



KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated under the Indian Companies Act, 1956) CIN:U40100KL2011SGC027424
Office of the Chief Engineer (Commercial & Planning)
8th Floor, Vydyuthi Bhavanam, Pattom, Thiruvananthapuram - 695 004, Kerala.
Telephone: +91 471 2514366, E-mail: dce.cp@kseb.in

Amman-S

No.CE(C&T)/CML/EE-2/STP/e-tender-7/2020-21/ 339

Dated 15-02-2021

To

Mr. Harish Saran,
Executive Director (Marketing),
M/s PTC India Ltd,
2nd Floor, NBCC Tower,
15 Bhikaji Cama Place, New Delhi 110 066.

Sir,

Sub: Purchase of power from 01-04-2021 to 31-05-2021 on firm and short term basis from any Sources, through e-bidding portal (DEEP) only - Letter of Award - reg.

- Ref: 1. KSEB Ltd- RfP/ e-Tender Notice - 7 /2020-21 dtd 28-01-2021
with Deep portal Event Ref: No.KSEBL/Short/2020-21/ET/83
2. Your Non Financial Technical Bid opened on 11-02-2021
3. DEEP Portal Event Ref. No : KSEBL/Short/20-21/RA/78 dtd 12-02-2021

This is to inform you that you have been declared as the Successful Bidder against Requisitions 2, 4, 6 and 8 in the Bid invited by KSEB Ltd vide reference 1 above. Your offer as shown below, submitted vide reference 3 above, is hereby accepted.

Period	Duration Hrs	Quantum (MW) on Firm basis	Rate at Delivery Point i.e. Kerala Periphery	Source of Power
01.04.2021 to 15.04.2021	14:00 to 24:00	50	Rs. 3.41/- (Rupees Three and forty one paise only) per kWh	Jindal Power Ltd, Chattisgarh
16.04.2021 to 30.04.2021	14:00 to 24:00	50	Rs. 3.43/- (Rupees Three and forty three paise only) per kWh	
01.05.2021 to 15.05.2021	14:00 to 24:00	50	Rs. 3.48/- (Rupees Three and forty eight paise only) per kWh	
16.05.2021 to 31.05.2021	14:00 to 24:00	50	Rs. 3.48/- (Rupees Three and forty eight paise only) per kWh	

Registered Office : Vydyuthi Bhavanam, Pattom, Thiruvananthapuram - 695 004. Website :
www.kseb.in

This Letter of Award (LoA) is being issued to you in accordance with clause 4.16 of the RfP document and for applying for short-term open access (STOA) for commencement of power supply from 01-04-2021 onwards, subject to terms and conditions specified in the RfP.

This Letter of Award (LoA) is subject to the approval from Kerala State Electricity Regulatory Commission in the petition filed by KSEBL for adoption of tariff and approval of power procurement.

It is requested that the unconditional acceptance of the soft copy of this LoA may be communicated to KSEBL on or before 22-02-2021 by email. Please record "Accepted Unconditionally" and duly sign and return the duplicate copy of this LoA within 7 days of receipt.

Thanking you,

Yours faithfully,


Dy. Chief Engineer (Commercial & Planning)
With full Powers of Chief Engineer

Copy to:

The Chief Engineer(Trans-System Operations),
Load Despatch Centre,
Kalamassery,
Kochi, Kerala.