



Mr. Syed Safeer Hussain,  
Registrar,  
National Electric Power Regulatory Authority,  
NEPRA Tower, Attaturk Avenue (East),  
Sector G-5/1,  
Islamabad.

Ref No. KE/BPR/NEPRA/2019/693

August 09, 2019

For information only  
— SAT-II  
GPR: ADDU  
— SA (Teh) 17.08.19  
— DG (MSE) 10/8/19 : Chairman  
— ADG (LH) — LA (LTP) VC  
M(T) — m(LA) — m(LH)  
— DROI/DG/MF

**Subject: Monthly Cost Variation for the month of July 2019 under Multi-Year Tariff 2017 – 2023**

Dear Sir,

This is with reference to the mechanism for monthly and quarterly variations provided in the Multi-Year Tariff Determination of K-Electric Limited (KE) dated July 5, 2018 (MYT), notified vide SRO No. 576 (I)/2019 dated May 22, 2019.

In this regard, please find enclosed calculation of monthly variation for the month of July 2019 along with relevant supports, for Authority's approval. Please note that the calculation for the month of July 2019 is based on CPPA-G's fuel cost determined by NEPRA for the month of May 2019 and is subject to adjustment based on the determination for July 2019 to be issued by NEPRA. Further, Oil and Gas Regulatory Authority (OGRA) has increased Natural gas price from Rs. 629/mmbtu to Rs. 824/mmbtu (increase of 31%) notified through SRO dated August 9, 2019 effective from July 1, 2019.

Summary of monthly variations as per the mechanism given in MYT is as follows:

Month	Variation Amount (PKR Million)	Variation per unit (PKR / kWh)
Jul-19	2,113	1.130

#### Economic Dispatch Order

KE dispatches as per Economic Merit Order from its own generating units (with the available fuel resources) and import from external sources. It is also certified that the cost of fuel and power purchase claim does not include any amount of late payment surcharge / mark-up / interest. All the requisite details including generation statistic sheets and invoices are enclosed.

#### Heat Rate

In the MYT, NEPRA has determined provisional Heat rates for KE's generating plants and has directed KE to conduct fresh Heat rate test for its plants, based on which final Heat rates will be determined by NEPRA.

In this regard, Heat rate test for BQPS – II was conducted in June 2018 and Independent Engineer's test report was submitted to NEPRA, based on which NEPRA issued its decision on Heat rate of BQPS – II on May 9, 2019. However, being aggrieved with certain points in the decision, KE filed a motion for review with NEPRA on May 16, 2019.

The attached calculations are based on BQPS – II Heat rates as given in NEPRA's decision dated May 9, 2019 and required adjustment will be submitted to NEPRA after any change in the Heat rate pursuant to the review procedure.

REGISTRAR

Dy. No: 733/  
Dated: 17-08-19

Senior Advisor Tariff

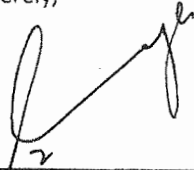
Dy. No: 6766  
Date: 19-8-19

ANGor (Tariff)

Dy. No: 1039  
Date: 19-08-19

Further, Heat rate test of KCCP, KGTPS and SGTPS Plants have been conducted during June and July 2019. Whereas, heat rate test of BQPS-I plant is planned to be conducted in due course and working for required adjustment will be submitted to NEPRA after determination of final Heat rates for these plants based on the test results.

Sincerely,



**Ayaz Jaffar Ahmed**  
**Director – Finance & Regulations**

**Enclosed:**

- Calculation sheet of monthly variation – July 2019
- Supporting Documents for July 2019

**K Electric Limited**

**SUMMARY OF REQUIRED ADJUSTMENT ON ACCOUNT OF VARIATION IN COST OF FUEL AND POWER PURCHASES**

DESCRIPTION		Unit	Jun-19	Jul-19
			Reference	Current
A)	<b>Cost of fuel:</b>			
	Cost of fuel - KE	a	Mill Rs. 13,032.317	15,428.771
	Cost of fuel - Power Purchases		Mill Rs. 6,154.866	5,730.196
	<b>Total</b>		<b>Mill Rs. 19,187.182</b>	<b>21,158.967</b>
B)	<b>Units Sent Out</b>			
	Units Sent Out - KE	b	GWh 1,087.775	1,129.265
	Units - Power purchases		GWh 795.761	740.417
	<b>Total</b>		<b>GWh 1,883.536</b>	<b>1,869.682</b>
C)	<b>Cost per unit</b>			
	Cost of fuel - KE	c = a/b	Rs./kWh 6.919	8.252
	Cost of fuel - Power Purchases		Rs./kWh 3.268	3.065
	<b>Average</b>		<b>Rs./kWh 10.187</b>	<b>11.317</b>
D)	<b>Variation per unit</b>			
	Cost of fuel - KE	d	Rs./kWh	1.333
	Cost of fuel - Power Purchases		Rs./kWh	(0.203)
	<b>Total Fuel Cost Adjustment</b>		<b>Rs./kWh</b>	<b>1.130</b>
E)	<b>Total Fuel Cost Adjustment</b>		<b>Ps/kWh</b>	<b>113.01</b>
F)	<b>Variation amount</b>			
	Cost of fuel - KE	e = d x	Mill Rs.	2,492.314
	Cost of fuel - Power Purchases	b (total)	Mill Rs.	(379.398)
	<b>Total Fuel Cost Adjustment</b>		<b>Mill Rs.</b>	<b>2,112.917</b>

Work Sheet- Generation Fuel Cost Variation

DESCRIPTION		Jun-19	Jul-19
		Reference	Current
<b>1</b>	<b>UNITS SENT OUT</b>		
<b>1a</b>	<b>UNITS SENT OUT ON FURNACE OIL</b>		
i	<u>Bin Qasim - I</u>		
	Unit 1	GWh 87.048	84.197
	Unit 2	GWh 61.259	84.699
	Unit 3	GWh 69.023	68.712
	Unit 4	GWh 53.880	67.310
	Unit 5	GWh 41.595	65.243
	Unit 6	GWh 78.170	75.777
	Total units sent out on furnace oil - Bin Qasim - I	GWh 390.975	445.938
<b>1b</b>	<b>UNITS SENT OUT ON GAS</b>		
i	<u>Bin Qasim - I</u>		
	Unit 1	GWh 8.014	10.525
	Unit 2	GWh 8.175	14.333
	Unit 3	GWh 0.398	0.787
	Unit 4	GWh 5.086	7.345
	Unit 5	GWh 44.568	24.849
	Unit 6	GWh 17.197	16.392
	Total units sent out on gas - Bin Qasim - I	GWh 83.439	74.230
	ii Bin Qasim II - 560 MW	GWh 238.087	231.152
	iii Korangi Town Gas Turbine II	GWh 39.091	31.034
	iv Site Gas Turbine II	GWh 39.332	34.960
	v Korangi CCPP	GWh 89.792	95.684
	Total units sent out on gas - KE	GWh 489.740	467.061
<b>1c</b>	<b>UNITS SENT OUT ON LNG</b>		
i	<u>Bin Qasim - I</u>		
	Unit 1	GWh 3.328	4.647
	Unit 2	GWh 3.395	6.328
	Unit 3	GWh 0.165	0.348
	Unit 4	GWh 2.112	3.243
	Unit 5	GWh 18.508	10.971
	Unit 6	GWh 7.142	7.237
	Total units sent out on LNG - Bin Qasim - I	GWh 34.650	32.774
	ii Bin Qasim II - 560 MW	GWh 101.224	108.129
	iii Korangi Town Gas Turbine II	GWh 16.539	14.320
	iv Site Gas Turbine II	GWh 16.629	16.233
	v Korangi CCPP	GWh 38.017	44.810
	Total units sent out on LNG - KE	GWh 207.060	216.266
	Total units sent out KE	GWh 1,087.775	1,129.265
<b>2</b>	<b>HEAT RATE AT BUS BAR</b>		
i	<u>Bin Qasim - I</u>		
	Unit 1	Btu/kWh 10,802	10,802
	Unit 2	Btu/kWh 10,650	10,650
	Unit 3	Btu/kWh 10,996	10,996
	Unit 4	Btu/kWh 10,899	10,899
	Unit 5	Btu/kWh 10,304	10,304
	Unit 6	Btu/kWh 10,249	10,249
	ii Bin Qasim II - 560 MW	Btu/kWh 8,358	8,358
	iii Korangi Town Gas Turbine II	Btu/kWh 8,738	8,738
	iv Site Gas Turbine II	Btu/kWh 8,746	8,746
	v Korangi CCPP	Btu/kWh 8,497	8,497

Work Sheet- Generation Fuel Cost Variation

DESCRIPTION		Jun-19	Jul-19	
		Reference	Current	
3	<u>Calorific Value - Furnace Oil</u>	Btu/kg	40,351	40,351
4	<u>FUEL PRICES</u>			
4a	Fuel Price - Gas	Rs./MMBTU	629	824
4b	Fuel Price - Furnace Oil	Rs./Mton	70,129	73,128
4c	Fuel Price - Furnace Oil	Rs./MMBTU	1,738	1,812
4d	Fuel Price - LNG	Rs./MMBTU	1,691	1,816
5	<u>COST OF FUEL</u>			
5a	<u>Furnace oil</u>			
i	<u>Bin Qasim - I</u>			
	Unit 1	Mill Rs.	1,634.198	1,648.284
	Unit 2	Mill Rs.	1,133.878	1,634.780
	Unit 3	Mill Rs.	1,319.087	1,369.302
	Unit 4	Mill Rs.	1,020.614	1,329.528
	Unit 5	Mill Rs.	744.883	1,218.353
	Unit 6	Mill Rs.	1,392.397	1,407.505
	Total Cost of Furnace Oil - Bin Qasim - I	Mill Rs.	7,245.058	8,607.752
5b	<u>Gas</u>			
i	<u>Bin Qasim - I</u>			
	Unit 1	Mill Rs.	54.451	93.683
	Unit 2	Mill Rs.	54.762	125.777
	Unit 3	Mill Rs.	2.755	7.132
	Unit 4	Mill Rs.	34.868	65.967
	Unit 5	Mill Rs.	288.854	210.976
	Unit 6	Mill Rs.	110.864	138.431
	Total Cost of Gas - Bin Qasim - I	Mill Rs.	546.555	641.966
	ii Bin Qasim II - 560 MW	Mill Rs.	1,251.735	1,592.029
	iii Korangi Town Gas Turbine II	Mill Rs.	214.854	223.448
	iv Site Gas Turbine II	Mill Rs.	216.373	251.947
	v Korangi CCPP	Mill Rs.	479.902	669.934
	Total Cost of Gas - KE	Mill Rs.	2,709.418	3,379.323
5c	<u>LNG</u>			
i	<u>Bin Qasim - I</u>			
	Unit 1	Mill Rs.	60.797	91.138
	Unit 2	Mill Rs.	61.145	122.360
	Unit 3	Mill Rs.	3.077	6.938
	Unit 4	Mill Rs.	38.932	64.175
	Unit 5	Mill Rs.	322.523	205.245
	Unit 6	Mill Rs.	123.787	134.670
	Total Cost of LNG - Bin Qasim - I	Mill Rs.	610.262	624.526
	ii Bin Qasim II - 560 MW	Mill Rs.	1,430.890	1,640.924
	iii Korangi Town Gas Turbine II	Mill Rs.	244.402	227.190
	iv Site Gas Turbine II	Mill Rs.	245.971	257.770
	v Korangi CCPP	Mill Rs.	546.316	691.287
	Total Cost of LNG - KE	Mill Rs.	3,077.841	3,441.696
	Total cost of fuel - KE	a Mill Rs.	13,032.317	15,428.771
6	<u>Variation in Cost of Fuel - KE</u>			
6a	Units Sent Out - KE	GWh	1,087.775	1,129.265
6b	Units - Power Purchases	GWh	795.761	740.417
	Total Units Sent Out	b GWh	1,883.536	1,869.682
6c	Cost per unit	c = a/b Rs./kWh	6.919	8.252
6d	Variation per unit (Cost of Fuel - KE)	Rs./kWh		1.333
6e	Variation amount (Cost of Fuel - KE)	Mill Rs.		2,492.314

Work Sheet- Power Purchase Cost Variation

DESCRIPTION		Jun-19	Jul-19
		Reference	Current
<b>1 POWER PURCHASES</b>			
a KANUPP	GWh	25.483	11.243
b TAPAL	GWh	74.538	80.559
c GUL AHMED	GWh	83.486	74.365
d CPPA-G	GWh	466.630	386.871
e ANOUD POWER	GWh	4.551	5.201
f INT IND (IIL)	GWh	5.734	5.249
g FFBL	GWh	39.128	39.080
h SNPC	GWh	68.024	61.090
i OURSUN	GWh	7.760	6.986
j CPPA-G - 150 MW	GWh	20.426	69.772
<b>TOTAL</b>	<b>GWh</b>	<b>795.761</b>	<b>740.417</b>
<b>2 COST OF POWER PURCHASES - FUEL COST - Note</b>			
a KANUPP	Mill Rs.	324.572	161.089
b TAPAL	Mill Rs.	1,157.457	1,202.357
c GUL AHMED	Mill Rs.	1,354.128	1,127.747
d CPPA-G	Mill Rs.	2,401.091	1,990.683
e ANOUD POWER	Mill Rs.	56.750	70.790
f INT IND (IIL)	Mill Rs.	43.879	52.565
g FFBL	Mill Rs.	318.279	317.888
h SNPC	Mill Rs.	393.603	448.057
i OURSUN	Mill Rs.	-	-
j CPPA-G - 150 MW	Mill Rs.	105.105	359.019
<b>TOTAL</b>	<b>Mill Rs.</b>	<b>6,154.866</b>	<b>5,730.196</b>
<b>3 FUEL COST / UNIT</b>			
a KANUPP	Rs./kwh	12.737	14.328
b TAPAL	Rs./kwh	15.528	14.925
c GUL AHMED	Rs./kwh	16.220	15.165
d CPPA-G	Rs./kwh	5.146	5.146
e ANOUD POWER	Rs./kwh	12.469	13.611
f INT IND (IIL)	Rs./kwh	7.653	10.014
g FFBL	Rs./kwh	8.134	8.134
h SNPC	Rs./kwh	5.786	7.334
i OURSUN	Rs./kwh	-	-
j CPPA-G - 150 MW	Rs./kwh	5.146	5.146
<b>4 VARIATION IN COST OF FUEL - POWER PURCHASES</b>			
<b>4a Cost of Fuel - Power Purchases</b>	<b>a</b> Mill Rs.	<b>6,154.866</b>	<b>5,730.196</b>
<b>Units Sent out:</b>			
Units Sent Out - KE	GWh	1,087.775	1,129.265
Units - Power Purchases	GWh	795.761	740.417
<b>4b Total Units Sent Out</b>	<b>b</b> GWh	<b>1,883.536</b>	<b>1,869.682</b>
<b>4c Cost per unit</b>	<b>c = a/b</b> Rs./kwh	<b>3.268</b>	<b>3.065</b>
<b>4d Variation per unit (Cost of Fuel - Power Purchases)</b>	Rs./kwh		<b>(0.203)</b>
<b>4e Variation amount (Cost of Fuel - Power Purchases)</b>	Mill Rs.		<b>(379.398)</b>

Note: - Kanupp's fuel cost is provisional as the invoice is yet to be received.

- CPPA-G's fuel cost is based on NEPRA's determination of fuel cost for the month of May 2019 as the fuel cost for the month of July 2019 is yet to be determined.

Mr. Syed Safeer Hussain,  
Registrar,  
National Electric Power Regulatory Authority,  
NEPRA Tower, Attaturk Avenue (East),  
Sector G-5/1,  
Islamabad.

Ref. No. KE/BPR/NEPRA/2019/802

September 13, 2019

AD Clait  
For information  
SAT-II  
170919  
— SAC (red) — DG (M&E) C: Chaima — VC  
— ADG (H) — LA (RIP) mtr) — m (en)  
— mf — m (en)

**Subject: Monthly Cost Variation for the month of August 2019 under Multi-Year Tariff 2017 – 2023**

Dear Sir,

This is with reference to the mechanism for monthly and quarterly variations provided in the Multi-Year Tariff Determination of K-Electric Limited (KE) dated July 5, 2018 (MYT), notified vide SRO No. 576 (I)/2019 dated May 22, 2019.

In this regard, please find enclosed calculation of monthly variation for the month of August 2019 along with relevant supports, for Authority's approval. Please note that the calculation for the month of August 2019 is based on CPPA-G's latest fuel cost determined by NEPRA for the month of May 2019 and is subject to adjustment based on the determination for August 2019 to be issued by NEPRA. Further, Oil and Gas Regulatory Authority (OGRA) has increased Natural gas price from Rs. 629/mmbtu to Rs. 824/mmbtu (increase of 31%) notified through SRO dated August 9, 2019 effective from July 1, 2019.

Summary of monthly variation as per the mechanism given in MYT is as follows:

Month	Variation Amount (PKR Million)	Variation per unit (PKR / kWh)
Aug-19	1,322	0.781

#### Economic Dispatch Order

KE dispatches as per Economic Merit Order from its own generating units (with the available fuel resources) and import from external sources. It is also certified that the cost of fuel and power purchase claim does not include any amount of late payment surcharge / mark-up / interest. All the requisite details including generation statistic sheets and invoices are enclosed.

#### Heat Rate

In the MYT, NEPRA has determined provisional Heat rates for KE's generating plants and has directed KE to conduct fresh Heat rate test for its plants, based on which final Heat rates will be determined by NEPRA.

In this regard, Heat rate test for BQPS – II was conducted in June 2018 and Independent Engineer's test report was submitted to NEPRA, based on which NEPRA issued its decision on Heat rate of BQPS – II on May 9, 2019. However, being aggrieved with certain points in the decision, KE filed a motion for review with NEPRA on May 16, 2019.

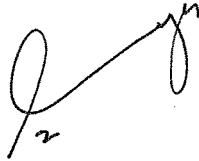
The attached calculations are based on BQPS – II Heat rates as given in NEPRA's decision dated May 9, 2019 and required adjustment will be submitted to NEPRA after any change in the Heat rate pursuant to the review procedure.

Received along with a folder.  
Date: 18-9-19  
Dy. No: 7752  
Senior Advisor Tariff-I  
Date: 19-9-19  
Dy. No: 8478  
REGISTRAR

ADG (Tariff) 1303  
Dy. No: 1303  
Date: 19-09-19

Further, Heat rate test of KCCP, KGTPS and SGTPS Plants have been conducted during June and July 2019. Whereas, heat rate test of BQPS-I plant is planned to be conducted in due course and working for required adjustment will be submitted to NEPRA after determination of final Heat rates for these plants based on the test results.

Sincerely,



**Ayaz Jaffar Ahmed**  
**Director – Finance & Regulations**

**Enclosed:**

- Calculation sheet of monthly variation – August 2019
- Supporting Documents for August 2019



**K Electric Limited**

**SUMMARY OF REQUIRED ADJUSTMENT ON ACCOUNT OF VARIATION IN COST OF FUEL AND POWER PURCHASES**

DESCRIPTION		Unit	Jun-19 Reference	Aug-19 Current
<b>A) Cost of fuel:</b>				
Cost of fuel - KE	a	Mill Rs.	13,032.317	13,462.642
Cost of fuel - Power Purchases		Mill Rs.	6,154.866	5,114.548
<b>Total</b>		<b>Mill Rs.</b>	<b>19,187.182</b>	<b>18,577.190</b>
<b>B) Units Sent Out</b>				
Units Sent Out - KE	b	GWh	1,087.775	1,003.320
Units - Power purchases		GWh	795.761	690.533
<b>Total</b>		<b>GWh</b>	<b>1,883.536</b>	<b>1,693.853</b>
<b>C) Cost per unit</b>				
Cost of fuel - KE	c = a/b	Rs./kWh	6.919	7.948
Cost of fuel - Power Purchases		Rs./kWh	3.268	3.019
<b>Average</b>		<b>Rs./kWh</b>	<b>10.187</b>	<b>10.967</b>
<b>D) Variation per unit</b>				
Cost of fuel - KE	d	Rs./kWh		1.029
Cost of fuel - Power Purchases		Rs./kWh		(0.248)
<b>Total Fuel Cost Adjustment</b>		<b>Rs./kWh</b>		<b>0.781</b>
<b>E) Total Fuel Cost Adjustment</b>		<b>Ps/kWh</b>		<b>78.063</b>
<b>F) Variation amount</b>				
Cost of fuel - KE	e = d x b (total)	Mill Rs.		1,742.761
Cost of fuel - Power Purchases		Mill Rs.		(420.484)
<b>Total Fuel Cost Adjustment</b>		<b>Mill Rs.</b>		<b>1,322.276</b>

Work Sheet- Generation Fuel Cost Variation

DESCRIPTION		Jun-19	Aug-19
		Reference	Current
<b>1</b>	<b><u>UNITS SENT OUT</u></b>		
	<b><u>1a UNITS SENT OUT ON FURNACE OIL</u></b>		
i	<b><u>Bin Qasim - I</u></b>		
	Unit 1	GWh 87.048	63.543
	Unit 2	GWh 61.259	56.107
	Unit 3	GWh 69.023	57.456
	Unit 4	GWh 53.880	57.706
	Unit 5	GWh 41.595	53.647
	Unit 6	GWh 78.170	57.577
	Total units sent out on furnace oil - Bin Qasim - I	GWh 390.975	346.036
	<b><u>1b UNITS SENT OUT ON GAS</u></b>		
i	<b><u>Bin Qasim - I</u></b>		
	Unit 1	GWh 8.014	8.849
	Unit 2	GWh 8.175	18.776
	Unit 3	GWh 0.398	1.147
	Unit 4	GWh 5.086	6.436
	Unit 5	GWh 44.568	25.439
	Unit 6	GWh 17.197	12.032
	Total units sent out on gas - Bin Qasim - I	GWh 83.439	72.680
	ii Bin Qasim II - 560 MW	GWh 238.087	229.317
	iii Korangi Town Gas Turbine II	GWh 39.091	19.363
	iv Site Gas Turbine II	GWh 39.332	33.311
	v Korangi CCPP	GWh 89.792	87.266
	Total units sent out on gas - KE	GWh 489.740	441.937
	<b><u>1c UNITS SENT OUT ON LNG</u></b>		
i	<b><u>Bin Qasim - I</u></b>		
	Unit 1	GWh 3.328	4.054
	Unit 2	GWh 3.395	8.602
	Unit 3	GWh 0.165	0.525
	Unit 4	GWh 2.112	2.949
	Unit 5	GWh 18.508	11.654
	Unit 6	GWh 7.142	5.512
	Total units sent out on LNG - Bin Qasim - I	GWh 34.650	33.296
	ii Bin Qasim II - 560 MW	GWh 101.224	114.455
	iii Korangi Town Gas Turbine II	GWh 16.539	8.407
	iv Site Gas Turbine II	GWh 16.629	16.209
	v Korangi CCPP	GWh 38.017	42.981
	Total units sent out on LNG - KE	GWh 207.060	215.347
	Total units sent out KE	GWh 1,087.775	1,003.320
<b>2</b>	<b><u>HEAT RATE AT BUS BAR</u></b>		
i	<b><u>Bin Qasim - I</u></b>		
	Unit 1	Btu/kWh 10,802	10,802
	Unit 2	Btu/kWh 10,650	10,650
	Unit 3	Btu/kWh 10,996	10,996
	Unit 4	Btu/kWh 10,899	10,899
	Unit 5	Btu/kWh 10,304	10,304
	Unit 6	Btu/kWh 10,249	10,249
	ii Bin Qasim II - 560 MW	Btu/kWh 8,358	8,358
	iii Korangi Town Gas Turbine II	Btu/kWh 8,738	8,738
	iv Site Gas Turbine II	Btu/kWh 8,746	8,746
	v Korangi CCPP	Btu/kWh 8,497	8,497

# Work Sheet- Generation Fuel Cost Variation

DESCRIPTION		Jun-19	Aug-19
		Reference	Current
3	<b>Calorific Value - Furnace Oil</b>		
	Btu/kg	40,351	40,351
4	<b>FUEL PRICES</b>		
4a	Fuel Price - Gas	Rs./MMBTU	629
4b	Fuel Price - Furnace Oil	Rs./Mton	70,129
4c	Fuel Price - Furnace Oil	Rs./MMBTU	1,738
4d	Fuel Price - LNG	Rs./MMBTU	1,691
5	<b>COST OF FUEL</b>		
5a	<b>Furnace oil</b>		
i	<b>Bin Qasim - I</b>		
	Unit 1	Mill Rs.	1,634.198
	Unit 2	Mill Rs.	1,133.878
	Unit 3	Mill Rs.	1,319.087
	Unit 4	Mill Rs.	1,020.614
	Unit 5	Mill Rs.	744.883
	Unit 6	Mill Rs.	1,392.397
	<b>Total Cost of Furnace Oil - Bin Qasim - I</b>	Mill Rs.	7,245.058
5b	<b>Gas</b>		
i	<b>Bin Qasim - I</b>		
	Unit 1	Mill Rs.	54.451
	Unit 2	Mill Rs.	54.762
	Unit 3	Mill Rs.	2.755
	Unit 4	Mill Rs.	34.868
	Unit 5	Mill Rs.	288.854
	Unit 6	Mill Rs.	110.864
	<b>Total Cost of Gas - Bin Qasim - I</b>	Mill Rs.	546.555
	ii Bin Qasim II - 560 MW	Mill Rs.	1,251.735
	iii Korangi Town Gas Turbine II	Mill Rs.	214.854
	iv Site Gas Turbine II	Mill Rs.	216.373
	v Korangi CCPP	Mill Rs.	479.902
	<b>Total Cost of Gas - KE</b>	Mill Rs.	2,709.418
5c	<b>LNG</b>		
i	<b>Bin Qasim - I</b>		
	Unit 1	Mill Rs.	60.797
	Unit 2	Mill Rs.	61.145
	Unit 3	Mill Rs.	3.077
	Unit 4	Mill Rs.	38.932
	Unit 5	Mill Rs.	322.523
	Unit 6	Mill Rs.	123.787
	<b>Total Cost of LNG - Bin Qasim - I</b>	Mill Rs.	610.262
	ii Bin Qasim II - 560 MW	Mill Rs.	1,430.890
	iii Korangi Town Gas Turbine II	Mill Rs.	244.402
	iv Site Gas Turbine II	Mill Rs.	245.971
	v Korangi CCPP	Mill Rs.	546.316
	<b>Total Cost of LNG - KE</b>	Mill Rs.	3,077.841
	<b>Total cost of fuel - KE</b>	Mill Rs.	13,032.317
6	<b>Variation in Cost of Fuel - KE</b>		
6a	Units Sent Out - KE	GWh	1,087.775
6b	Units - Power Purchases	GWh	795.761
	<b>Total Units Sent Out</b>	GWh	1,883.536
6c	Cost per unit	c = a/b	Rs./kWh
			6.919
6d	Variation per unit (Cost of Fuel - KE)		Rs./kWh
			1.029
6e	Variation amount (Cost of Fuel - KE)		Mill Rs.
			1,742.761

Work Sheet- Power Purchase Cost Variation

DESCRIPTION		Jun-19	Aug-19
		Reference	Current
<b>1 POWER PURCHASES</b>			
a	KANUPP	GWh	25.483
b	TAPAL	GWh	74.538
c	GUL AHMED	GWh	83.486
d	CPPA-G	GWh	466.630
e	ANOUD POWER	GWh	4.551
f	INT IND (IIL)	GWh	5.734
g	FFBL	GWh	39.128
h	SNPC	GWh	68.024
i	OURSUN	GWh	7.760
j	CPPA-G - 150 MW	GWh	20.426
<b>TOTAL</b>		<b>GWh</b>	<b>795.761 690.533</b>
<b>2 COST OF POWER PURCHASES - FUEL COST</b>			
a	KANUPP	Mill Rs.	324.572
b	TAPAL	Mill Rs.	1,157.457
c	GUL AHMED	Mill Rs.	1,354.128
d	CPPA-G - Note	Mill Rs.	2,401.091
e	ANOUD POWER	Mill Rs.	56.750
f	INT IND (IIL)	Mill Rs.	43.879
g	FFBL	Mill Rs.	318.279
h	SNPC	Mill Rs.	393.603
i	OURSUN	Mill Rs.	-
j	CPPA-G - 150 MW	Mill Rs.	105.105
<b>TOTAL</b>		<b>Mill Rs.</b>	<b>6,154.866 5,114.548</b>
<b>3 FUEL COST / UNIT</b>			
a	KANUPP	Rs./kwh	12.737
b	TAPAL	Rs./kwh	15.528
c	GUL AHMED	Rs./kwh	16.220
d	CPPA-G	Rs./kwh	5.146
e	ANOUD POWER	Rs./kwh	12.469
f	INT IND (IIL)	Rs./kwh	7.653
g	FFBL	Rs./kwh	8.134
h	SNPC	Rs./kwh	5.786
i	OURSUN	Rs./kwh	-
j	CPPA-G - 150 MW	Rs./kwh	5.146
<b>4 VARIATION IN COST OF FUEL - POWER PURCHASES</b>			
4a	Cost of Fuel - Power Purchases	a	Mill Rs. 6,154.866 5,114.548
<b>Units Sent out:</b>			
	Units Sent Out - KE	GWh	1,087.775 1,003.320
	Units - Power Purchases	GWh	795.761 690.533
4b	Total Units Sent Out	b	GWh 1,883.536 1,693.853
4c	Cost per unit	c = a/b	Rs./kwh 3.268 3.019
4d	Variation per unit (Cost of Fuel - Power Purchases)		Rs./kwh (0.248)
4e	Variation amount (Cost of Fuel - Power Purchases)		Mill Rs. (420.484)

Note: CPPA-G's fuel cost is based on NEPRA's determination of fuel cost for the month of May 2019 as the fuel cost for the months of June-2019 and August 2019 is yet to be determined.

For information & n.a. Please

- SA(Tariff)
- Copy to:
- DG (M&E)
- SA (Tech)
- ADG (L&I)
- M.F.

CC: Chairman  
- M (Tariff)

- VC  
- m(CA)  
- m(L&I)

Mr. Syed Safeer Hussain,  
Registrar,  
National Electric Power Regulatory Authority,  
NEPRA Tower, Attaturk Avenue (East),  
Sector G-5/1,  
Islamabad.

Ref No. KE/BPR/NEPRA/2019/949

October 10, 2019

**Subject: Monthly Cost Variation for the month of September 2019 under Multi-Year Tariff 2017 – 2023**

Dear Sir,

This is with reference to the mechanism for monthly and quarterly variations provided in the Multi-Year Tariff Determination of K-Electric Limited (KE) dated July 5, 2018 (MYT), notified vide SRO No. 576 (I)/2019 dated May 22, 2019.

In this regard, please find enclosed calculation of monthly variation for the month of September 2019 along with relevant supports, for Authority's approval. Please note that the calculation for the month of September 2019 is based on CPPA-G's latest fuel cost determined by NEPRA for the month of July 2019 and it is subject to adjustment based on the determination for September 2019 to be issued by NEPRA. Further, please note that Oil and Gas Regulatory Authority (OGRA) has increased Natural gas price from Rs. 629/mmbtu to Rs. 824/mmbtu (increase of 31%) notified through SRO dated August 9, 2019 effective from July 1, 2019.

Summary of monthly variation as per the mechanism given in MYT is as follows:

Month	Variation Amount (PKR Million)	Variation per unit (PKR / kWh)
Sep-19	722	0.404

#### Economic Dispatch Order

KE dispatches as per Economic Merit Order from its own generating units (with the available fuel resources) and import from external sources. It is also certified that the cost of fuel and power purchase claim does not include any amount of late payment surcharge / mark-up / interest. All the requisite details including generation statistic sheets and invoices are enclosed.

#### Heat Rate

In the MYT, NEPRA has determined provisional Heat rates for KE's generating plants and has directed KE to conduct fresh Heat rate test for its plants, based on which final Heat rates will be determined by NEPRA.

In this regard, Heat rate test for BQPS -- II was conducted in June 2018 and Independent Engineer's test report was submitted to NEPRA, based on which NEPRA issued its decision on Heat rate of BPQS -- II on May 9, 2019. However, being aggrieved with certain points in the decision, KE filed a motion for review with NEPRA on May 16, 2019.

REGISTRAR  
Dy. No. 9953  
Dated: 14-10-19

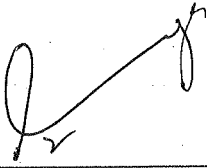
Senior Registrar  
Dy. No. 8690  
Dated: 15-10-19

15/11  
Dy. No. 151  
Date: 16-10-19

The attached calculations are based on BQPS – II Heat rates as given in NEPRA's decision dated May 9, 2019 and required adjustment will be submitted to NEPRA after any change in the Heat rate pursuant to the review procedure.

Further, Heat rate test of KCCP, KGTPS and SGTPS Plants have been conducted during June and July 2019. Whereas, heat rate test of BQPS-I plant is planned to be conducted in due course and working for required adjustment will be submitted to NEPRA after determination of final Heat rates for these plants based on the test results.

Sincerely,



**Ayaz Jaffar Ahmed**  
**Director – Finance & Regulations**

**Enclosed:**

- Calculation sheet of monthly variation – September 2019
- Supporting Documents for September 2019

## SUMMARY OF REQUIRED ADJUSTMENT ON ACCOUNT OF VARIATION IN COST OF FUEL AND POWER PURCHASES

DESCRIPTION		Unit	Jun-19 Reference	Sep-19 Current
A)	<b>Cost of fuel:</b>			
	Cost of fuel - KE	a	Mill Rs. 13,032.317	13,282.926
	Cost of fuel - Power Purchases	a	Mill Rs. 6,154.866	5,648.981
	<b>Total</b>		<b>Mill Rs. 19,187.182</b>	<b>18,931.907</b>
B)	<b>Units Sent Out</b>			
	Units Sent Out - KE	b	GWh 1,087.775	1,046.814
	Units - Power purchases	b	GWh 795.761	740.771
	<b>Total</b>		<b>GWh 1,883.536</b>	<b>1,787.585</b>
C)	<b>Cost per unit</b>			
	Cost of fuel - KE	c = a/b	Rs./kWh 6.919	7.431
	Cost of fuel - Power Purchases	c = a/b	Rs./kWh 3.268	3.160
	<b>Average</b>		<b>Rs./kWh 10.187</b>	<b>10.591</b>
D)	<b>Variation per unit</b>			
	Cost of fuel - KE	d	Rs./kWh	0.512
	Cost of fuel - Power Purchases	d	Rs./kWh	(0.108)
	<b>Total Fuel Cost Adjustment</b>		<b>Rs./kWh</b>	<b>0.404</b>
E)	<b>Total Fuel Cost Adjustment</b>		<b>Ps/kWh</b>	<b>40.399</b>
F)	<b>Variation amount</b>			
	Cost of fuel - KE	e = d x	Mill Rs.	914.505
	Cost of fuel - Power Purchases	b (total)	Mill Rs.	(192.342)
	<b>Total Fuel Cost Adjustment</b>		<b>Mill Rs.</b>	<b>722.162</b>

# Work Sheet- Generation Fuel Cost Variation

DESCRIPTION		Jun-19	Sep-19
		Reference	Current
<b>1</b>	<b>UNITS SENT OUT</b>		
<b>1a</b>	<b>UNITS SENT OUT ON FURNACE OIL</b>		
i	<b>Bin Qasim - I</b>		
	Unit 1	GWh 87.048	67.409
	Unit 2	GWh 61.259	78.445
	Unit 3	GWh 69.023	60.425
	Unit 4	GWh 53.880	57.492
	Unit 5	GWh 41.595	52.705
	Unit 6	GWh 78.170	71.235
	Total units sent out on furnace oil - Bin Qasim - I	GWh 390.975	387.711
<b>1b</b>	<b>UNITS SENT OUT ON GAS</b>		
i	<b>Bin Qasim - I</b>		
	Unit 1	GWh 8.014	10.868
	Unit 2	GWh 8.175	6.991
	Unit 3	GWh 0.398	0.654
	Unit 4	GWh 5.086	4.894
	Unit 5	GWh 44.568	31.440
	Unit 6	GWh 17.197	23.702
	Total units sent out on gas - Bin Qasim - I	GWh 83.439	78.550
	ii Bin Qasim II - 560 MW	GWh 238.087	219.340
	iii Korangi Town Gas Turbine II	GWh 39.091	23.177
	iv Site Gas Turbine II	GWh 39.332	30.289
	v Korangi CCPP	GWh 89.792	72.594
	Total units sent out on gas - KE	GWh 489.740	423.950
<b>1c</b>	<b>UNITS SENT OUT ON LNG</b>		
i	<b>Bin Qasim - I</b>		
	Unit 1	GWh 3.328	6.378
	Unit 2	GWh 3.395	4.103
	Unit 3	GWh 0.165	0.384
	Unit 4	GWh 2.112	2.872
	Unit 5	GWh 18.508	18.451
	Unit 6	GWh 7.142	13.910
	Total units sent out on LNG - Bin Qasim - I	GWh 34.650	46.097
	ii Bin Qasim II - 560 MW	GWh 101.224	120.124
	iii Korangi Town Gas Turbine II	GWh 16.539	12.576
	iv Site Gas Turbine II	GWh 16.629	16.541
	v Korangi CCPP	GWh 38.017	39.814
	Total units sent out on LNG - KE	GWh 207.060	235.153
	Total units sent out KE	GWh 1,087.775	1,046.814
<b>2</b>	<b>HEAT RATE AT BUS BAR</b>		
i	<b>Bin Qasim - I</b>		
	Unit 1	Btu/kWh 10,802	10,802
	Unit 2	Btu/kWh 10,650	10,650
	Unit 3	Btu/kWh 10,996	10,996
	Unit 4	Btu/kWh 10,899	10,899
	Unit 5	Btu/kWh 10,304	10,304
	Unit 6	Btu/kWh 10,249	10,249
	ii Bin Qasim II - 560 MW	Btu/kWh 8,358	8,358
	iii Korangi Town Gas Turbine II	Btu/kWh 8,738	8,738
	iv Site Gas Turbine II	Btu/kWh 8,746	8,746
	v Korangi CCPP	Btu/kWh 8,497	8,497



Work Sheet- Generation Fuel Cost Variation

DESCRIPTION		Jun-19	Sep-19	
		Reference	Current	
3	<u>Calorific Value - Furnace Oil</u>	Btu/kg	40,351	40,351
4	<u>FUEL PRICES</u>			
4a	Fuel Price - Gas	Rs./MMBTU	629	824
4b	Fuel Price - Furnace Oil	Rs./Mton	70,129	67,766
4c	Fuel Price - Furnace Oil	Rs./MMBTU	1,738	1,679
4d	Fuel Price - LNG	Rs./MMBTU	1,691	1,575
5	<u>COST OF FUEL</u>			
5a	<u>Furnace oil</u>			
i	<u>Bin Qasim - I</u>			
	Unit 1	Mill Rs.	1,634.198	1,222.872
	Unit 2	Mill Rs.	1,133.878	1,403.049
	Unit 3	Mill Rs.	1,319.087	1,115.852
	Unit 4	Mill Rs.	1,020.614	1,052.334
	Unit 5	Mill Rs.	744.883	912.052
	Unit 6	Mill Rs.	1,392.397	1,226.115
	Total Cost of Furnace Oil - Bin Qasim - I	Mill Rs.	7,245.058	6,932.273
5b	<u>Gas</u>			
i	<u>Bin Qasim - I</u>			
	Unit 1	Mill Rs.	54.451	96.738
	Unit 2	Mill Rs.	54.762	61.353
	Unit 3	Mill Rs.	2.755	5.927
	Unit 4	Mill Rs.	34.868	43.953
	Unit 5	Mill Rs.	288.854	266.941
	Unit 6	Mill Rs.	110.864	200.167
	Total Cost of Gas - Bin Qasim - I	Mill Rs.	546.555	675.079
	ii Bin Qasim II - 560 MW	Mill Rs.	1,251.735	1,510.677
	iii Korangi Town Gas Turbine II	Mill Rs.	214.854	166.876
	iv Site Gas Turbine II	Mill Rs.	216.373	218.280
	v Korangi CCPP	Mill Rs.	479.902	508.271
	Total Cost of Gas - KE	Mill Rs.	2,709.418	3,079.183
5c	<u>LNG</u>			
i	<u>Bin Qasim - I</u>			
	Unit 1	Mill Rs.	60.797	108.482
	Unit 2	Mill Rs.	61.145	68.802
	Unit 3	Mill Rs.	3.077	6.646
	Unit 4	Mill Rs.	38.932	49.289
	Unit 5	Mill Rs.	322.523	299.348
	Unit 6	Mill Rs.	123.787	224.467
	Total Cost of LNG - Bin Qasim - I	Mill Rs.	610.262	757.034
	ii Bin Qasim II - 560 MW	Mill Rs.	1,430.890	1,580.943
	iii Korangi Town Gas Turbine II	Mill Rs.	244.402	173.033
	iv Site Gas Turbine II	Mill Rs.	245.971	227.791
	v Korangi CCPP	Mill Rs.	546.316	532.668
	Total Cost of LNG - KE	Mill Rs.	3,077.841	3,271.469
	Total cost of fuel - KE	a Mill Rs.	13,032.317	13,282.926
6	<u>Variation in Cost of Fuel - KE</u>			
6a	Units Sent Out - KE	GWh	1,087.775	1,046.814
6b	Units - Power Purchases	GWh	795.761	740.771
	Total Units Sent Out	b GWh	1,883.536	1,787.585
6c	Cost per unit	c = a/b Rs./kWh	6.919	7.431
6d	Variation per unit (Cost of Fuel - KE)	Rs./kWh		0.512
6e	Variation amount (Cost of Fuel - KE)	Mill Rs.		914.505

Work Sheet- Power Purchase Cost Variation

DESCRIPTION			Jun-19	Sep-19	
			Reference	Current	
1 POWER PURCHASES					
a	KANUPP	GWh	25.483	-	
b	TAPAL	GWh	74.538	76.567	
c	GUL AHMED	GWh	83.486	78.337	
d	CPPA-G	GWh	466.630	444.965	
e	ANOUD POWER	GWh	4.551	3.982	
f	INT IND (IIL)	GWh	5.734	4.346	
g	FFBL	GWh	39.128	32.840	
h	SNPC	GWh	68.024	68.509	
i	OURSUN	GWh	7.760	6.999	
j	CPPA-G - 150 MW	GWh	20.426	24.227	
TOTAL		GWh	795.761	740.771	
2 COST OF POWER PURCHASES - FUEL COST					
a	KANUPP	Mill Rs.	324.572	-	
b	TAPAL	Mill Rs.	1,157.457	1,103.532	
c	GUL AHMED	Mill Rs.	1,354.128	1,235.632	
d	CPPA-G - Note	Mill Rs.	2,401.091	2,368.059	
e	ANOUD POWER	Mill Rs.	56.750	51.115	
f	INT IND (IIL)	Mill Rs.	43.879	43.509	
g	FFBL	Mill Rs.	318.279	215.746	
h	SNPC	Mill Rs.	393.603	502.455	
i	OURSUN	Mill Rs.	-	-	
j	CPPA-G - 150 MW	Mill Rs.	105.105	128.934	
TOTAL		Mill Rs.	6,154.866	5,648.981	
3 FUEL COST / UNIT					
a	KANUPP	Rs./kwh	12.737	-	
b	TAPAL	Rs./kwh	15.528	14.413	
c	GUL AHMED	Rs./kwh	16.220	15.773	
d	CPPA-G	Rs./kwh	5.146	5.322	
e	ANOUD POWER	Rs./kwh	12.469	12.838	
f	INT IND (IIL)	Rs./kwh	7.653	10.012	
g	FFBL	Rs./kwh	8.134	6.570	
h	SNPC	Rs./kwh	5.786	7.334	
i	OURSUN	Rs./kwh	-	-	
j	CPPA-G - 150 MW	Rs./kwh	5.146	5.322	
4 VARIATION IN COST OF FUEL - POWER PURCHASES					
4a Cost of Fuel - Power Purchases		a	Mill Rs.	6,154.866	5,648.981
Units Sent out:					
Units Sent Out - KE			GWh	1,087.775	1,046.814
Units - Power Purchases			GWh	795.761	740.771
4b Total Units Sent Out		b	GWh	1,883.536	1,787.585
4c Cost per unit		c = a/b	Rs./kwh	3.268	3.160
4d Variation per unit (Cost of Fuel - Power Purchases)			Rs./kwh		(0.108)
4e Variation amount (Cost of Fuel - Power Purchases)			Mill Rs.		(192.342)

Note: CPPA-G's fuel cost for the month of September 2019 is based on NEPRA's determination of fuel cost for the month of July 2019 as the fuel cost for the month of September 2019 is yet to be determined.

For perusal & signature  
 — SAT-II —  
 Gali ADDG  
 — SAT (Pah) —  
 — ADG (L-4) —  
 — LAC (KCP) —  
 — MF —  
 11/8/19  
 VC  
 MGT  
 MCA - M(L-1)

Mr. Syed Safeer Hussain,  
 Registrar,  
 National Electric Power Regulatory Authority,  
 NEPRA Tower, Attaturk Avenue (East),  
 Sector G-5/1,  
 Islamabad.

Ref No. KE/BPR/NEPRA/2019/1182  
 November 13, 2019

**Subject: Monthly Cost Variation for the month of October 2019 under Multi-Year Tariff 2017 – 2023**

Dear Sir,

This is with reference to the mechanism for monthly and quarterly variations provided in the Multi-Year Tariff Determination of K-Electric Limited (KE) dated July 5, 2018 (MYT), notified vide SRO No. 576 (I)/2019 dated May 22, 2019.

In this regard, please find enclosed calculation of monthly variation for the month of October 2019 along with relevant supports, for Authority's approval. Please note that the calculation for the month of October 2019 is based on CPPA-G's latest fuel cost determined by NEPRA for the month of August 2019 and it is subject to adjustment based on the determination for October 2019 to be issued by NEPRA.

Summary of monthly variation as per the mechanism given in MYT is as follows:

Month	Variation Amount (PKR Million)	Variation per unit (PKR / kWh)
Oct-19	(344)	(0.198)

#### Economic Dispatch Order

KE dispatches as per Economic Merit Order from its own generating units (with the available fuel resources) and import from external sources. It is also certified that the cost of fuel and power purchase claim does not include any amount of late payment surcharge / mark-up / interest. All the requisite details including generation statistic sheets and invoices are enclosed.

#### Heat Rate

In the MYT, NEPRA has determined provisional Heat rates for KE's generating plants and has directed KE to conduct fresh Heat rate test for its plants, based on which final Heat rates will be determined by NEPRA.

In this regard, Heat rate test for BQPS – II was conducted in June 2018 and Independent Engineer's test report was submitted to NEPRA, based on which NEPRA issued its decision on Heat rate of BQPS – II on May 9, 2019. However, being aggrieved with certain points in the decision, KE filed a motion for review with NEPRA on May 16, 2019.

The attached calculations are based on BQPS – II Heat rates as given in NEPRA's decision dated May 9, 2019 and required adjustment will be submitted to NEPRA after any change in the Heat rate pursuant to the review procedure.

Further, Heat rate test of KCCP, KGTPS and SGTPS Plants have been conducted during June and July 2019. Whereas, heat rate test of BQPS-I plant is being conducted in November 2019 and working for required

Senior Advisor Tariff  
 Dy. No. 9780  
 Date: 19-11-19  
 REGISTRAR  
 Dy. No. 11698  
 Date: 19-11-19  
 Atongwina a Bolder.

ADDG (Tariff)  
 Dy. No. 1824  
 Date: 20-11-19

adjustment will be submitted to NEPRA after determination of final Heat rates for these plants based on the test results.

In view of the accumulated monthly and quarterly tariff variations, which are significantly impacting working capital position of the Company, we would humbly request NEPRA for expeditious processing of pending monthly and quarterly tariff variations.

Sincerely,



---

**Ayaz Jaffar Ahmed**  
**Director – Finance & Regulations**

**Enclosed:**

- Calculation sheet of monthly variation – October 2019
- Supporting Documents for October 2019

## SUMMARY OF REQUIRED ADJUSTMENT ON ACCOUNT OF VARIATION IN COST OF FUEL AND POWER PURCHASES

DESCRIPTION		Unit	Sep-19	Oct-19
			Reference	Current
A)	Cost of fuel:			
	Cost of fuel - KE			
	Cost of fuel - Power Purchases			
	Total			
		a	Mill Rs.	13,282.926
			Mill Rs.	12,673.699
			5,648.981	5,386.017
			18,931.907	18,059.716
B)	Units Sent Out			
	Units Sent Out - KE			
	Units - Power purchases			
	Total			
		b	GWh	1,046.814
			GWh	996.926
			740.771	740.746
			1,787.585	1,737.673
C)	Cost per unit			
	Cost of fuel - KE			
	Cost of fuel - Power Purchases			
	Average			
		c = a/b	Rs./kWh	7.431
			Rs./kWh	7.293
			3.160	3.100
			10.591	10.393
D)	Variation per unit			
	Cost of fuel - KE			
	Cost of fuel - Power Purchases			
	Total Fuel Cost Adjustment			
		d	Rs./kWh	(0.137)
			Rs./kWh	(0.061)
			Rs./kWh	(0.198)
E)	Total Fuel Cost Adjustment		Ps/kWh	(19.77)
F)	Variation amount			
	Cost of fuel - KE			
	Cost of fuel - Power Purchases			
	Total Fuel Cost Adjustment			
		e = d x b (total)	Mill Rs.	(238.348)
			Mill Rs.	(105.236)
			Mill Rs.	(343.584)

Work Sheet- Generation Fuel Cost Variation

DESCRIPTION		Sep-19	Oct-19
		Reference	Current
<b>1</b>	<b>UNITS SENT OUT</b>		
	<b>1a UNITS SENT OUT ON FURNACE OIL</b>		
i	<u>Bin Qasim - I</u>		
	Unit 1	GWh 67.409	55.435
	Unit 2	GWh 78.445	59.347
	Unit 3	GWh 60.425	61.893
	Unit 4	GWh 57.492	55.842
	Unit 5	GWh 52.705	54.763
	Unit 6	GWh 71.235	39.030
	Total units sent out on furnace oil - Bin Qasim - I	GWh 387.711	326.309
	<b>1b UNITS SENT OUT ON GAS</b>		
i	<u>Bin Qasim - I</u>		
	Unit 1	GWh 10.868	13.753
	Unit 2	GWh 6.991	13.508
	Unit 3	GWh 0.654	0.884
	Unit 4	GWh 4.894	1.986
	Unit 5	GWh 31.440	19.859
	Unit 6	GWh 23.702	34.948
	Total units sent out on gas - Bin Qasim - I	GWh 78.550	84.938
	ii Bin Qasim II - 560 MW	GWh 219.340	216.152
	iii Korangi Town Gas Turbine II	GWh 23.177	12.252
	iv Site Gas Turbine II	GWh 30.289	23.776
	v Korangi CCP	GWh 72.594	65.417
	Total units sent out on gas - KE	GWh 423.950	402.535
	<b>1c UNITS SENT OUT ON LNG</b>		
i	<u>Bin Qasim - I</u>		
	Unit 1	GWh 6.378	9.835
	Unit 2	GWh 4.103	9.660
	Unit 3	GWh 0.384	0.632
	Unit 4	GWh 2.872	1.420
	Unit 5	GWh 18.451	14.201
	Unit 6	GWh 13.910	24.991
	Total units sent out on LNG - Bin Qasim - I	GWh 46.097	60.739
	ii Bin Qasim II - 560 MW	GWh 120.124	140.614
	iii Korangi Town Gas Turbine II	GWh 12.576	8.541
	iv Site Gas Turbine II	GWh 16.541	15.643
	v Korangi CCP	GWh 39.814	42.546
	Total units sent out on LNG - KE	GWh 235.153	268.083
	Total units sent out KE	GWh 1,046.814	996.926
<b>2</b>	<b>HEAT RATE AT BUS BAR</b>		
i	<u>Bin Qasim - I</u>		
	Unit 1	Btu/kWh 10,802	10,802
	Unit 2	Btu/kWh 10,650	10,650
	Unit 3	Btu/kWh 10,996	10,996
	Unit 4	Btu/kWh 10,899	10,899
	Unit 5	Btu/kWh 10,304	10,304
	Unit 6	Btu/kWh 10,249	10,249
	ii Bin Qasim II - 560 MW	Btu/kWh 8,358	8,358
	iii Korangi Town Gas Turbine II	Btu/kWh 8,738	8,738
	iv Site Gas Turbine II	Btu/kWh 8,746	8,746
	v Korangi CCP	Btu/kWh 8,497	8,497

Work Sheet- Generation Fuel Cost Variation

DESCRIPTION		Sep-19	Oct-19		
		Reference	Current		
3	<u>Calorific Value - Furnace Oil</u>	Btu/kg	40,351	40,351	
4	<u>FUEL PRICES</u>				
4a	Fuel Price - Gas	Rs./MMBTU	824	824	
4b	Fuel Price - Furnace Oil	Rs./Mton	67,766	66,519	
4c	Fuel Price - Furnace Oil	Rs./MMBTU	1,679	1,649	
4d	Fuel Price - LNG	Rs./MMBTU	1,575	1,676	
5	<u>COST OF FUEL</u>				
5a	<u>Furnace oil</u>				
i	<u>Bin Qasim - I</u>				
	Unit 1	Mill Rs.	1,222.872	987.142	
	Unit 2	Mill Rs.	1,403.049	1,041.922	
	Unit 3	Mill Rs.	1,115.852	1,121.933	
	Unit 4	Mill Rs.	1,052.334	1,003.309	
	Unit 5	Mill Rs.	912.052	930.212	
	Unit 6	Mill Rs.	1,226.115	659.424	
	Total Cost of Furnace Oil - Bin Qasim - I	Mill Rs.	6,932.273	5,743.941	
5b	<u>Gas</u>				
i	<u>Bin Qasim - I</u>				
	Unit 1	Mill Rs.	96.738	122.417	
	Unit 2	Mill Rs.	61.353	118.540	
	Unit 3	Mill Rs.	5.927	8.006	
	Unit 4	Mill Rs.	43.953	17.836	
	Unit 5	Mill Rs.	266.941	168.613	
	Unit 6	Mill Rs.	200.167	295.139	
	Total Cost of Gas - Bin Qasim - I	Mill Rs.	675.079	730.550	
	ii Bin Qasim II - 560 MW	Mill Rs.	1,510.677	1,488.719	
	iii Korangi Town Gas Turbine II	Mill Rs.	166.876	88.216	
	iv Site Gas Turbine II	Mill Rs.	218.280	171.348	
	v Korangi CCPP	Mill Rs.	508.271	458.016	
	Total Cost of Gas - KE	Mill Rs.	3,079.183	2,936.849	
5c	<u>LNG</u>				
i	<u>Bin Qasim - I</u>				
	Unit 1	Mill Rs.	108.482	178.065	
	Unit 2	Mill Rs.	68.802	172.426	
	Unit 3	Mill Rs.	6.646	11.645	
	Unit 4	Mill Rs.	49.289	25.944	
	Unit 5	Mill Rs.	299.348	245.260	
	Unit 6	Mill Rs.	224.467	429.302	
	Total Cost of LNG - Bin Qasim - I	Mill Rs.	757.034	1,062.642	
	ii Bin Qasim II - 560 MW	Mill Rs.	1,580.943	1,969.932	
	iii Korangi Town Gas Turbine II	Mill Rs.	173.033	125.088	
	iv Site Gas Turbine II	Mill Rs.	227.791	229.317	
	v Korangi CCPP	Mill Rs.	532.668	605.930	
	Total Cost of LNG - KE	Mill Rs.	3,271.469	3,992.910	
	Total cost of fuel - KE	a	Mill Rs.	13,282.926	12,673.699
5	<u>Variation in Cost of Fuel - KE</u>				
6a	Units Sent Out - KE	GWh	1,046.814	996.926	
6b	Units - Power Purchases	GWh	740.771	740.746	
	Total Units Sent Out	b	GWh	1,787.585	1,737.673
6c	Cost per unit	c = a/b	Rs./kWh	7.431	7.293
6d	Variation per unit (Cost of Fuel - KE)		Rs./kWh		(0.137)
6e	Variation amount (Cost of Fuel - KE)		Mill Rs.		(238.348)

Work Sheet- Power Purchase Cost Variation

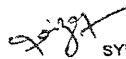
DESCRIPTION		Sep-19	Oct-19
		Reference	Current
<b>1 POWER PURCHASES</b>			
a KANUPP	GWh	-	-
b TAPAL	GWh	76.567	70.350
c GUL AHMED	GWh	78.337	61.557
d CPPA-G	GWh	444.965	461.379
e ANOUD POWER	GWh	3.982	5.412
f INT IND (IIL)	GWh	4.346	5.839
g FFBL	GWh	32.840	39.959
h SNPC	GWh	68.509	69.596
i OURSUN	GWh	6.999	7.475
j CPPA-G - 150 MW	GWh	24.227	19.179
<b>TOTAL</b>	<b>GWh</b>	<b>740.771</b>	<b>740.746</b>
<b>2 COST OF POWER PURCHASES - FUEL COST</b>			
a KANUPP	Mill Rs.	-	-
b TAPAL	Mill Rs.	1,103.532	1,096.061
c GUL AHMED	Mill Rs.	1,235.632	1,048.683
d CPPA-G	Mill Rs.	2,368.059	2,245.070
e ANOUD POWER	Mill Rs.	51.115	71.479
f INT IND (IIL)	Mill Rs.	43.509	58.460
g FFBL	Mill Rs.	215.746	262.515
h SNPC	Mill Rs.	502.455	510.422
i OURSUN	Mill Rs.	-	-
j CPPA-G - 150 MW	Mill Rs.	128.934	93.327
<b>TOTAL</b>	<b>Mill Rs.</b>	<b>5,648.981</b>	<b>5,386.017</b>
<b>3 FUEL COST / UNIT</b>			
a KANUPP	Rs./kwh	-	-
b TAPAL	Rs./kwh	14.413	15.580
c GUL AHMED	Rs./kwh	15.773	17.036
d CPPA-G	Rs./kwh	5.322	4.866
e ANOUD POWER	Rs./kwh	12.838	13.207
f INT IND (IIL)	Rs./kwh	10.012	10.012
g FFBL	Rs./kwh	6.570	6.570
h SNPC	Rs./kwh	7.334	7.334
i OURSUN	Rs./kwh	-	-
j CPPA-G - 150 MW	Rs./kwh	5.322	4.866
<b>4 VARIATION IN COST OF FUEL - POWER PURCHASES</b>			
<b>4a Cost of Fuel - Power Purchases</b>	<b>a</b>	<b>Mill Rs.</b>	<b>5,648.981 5,386.017</b>
Units Sent out:			
Units Sent Out - KE		GWh	1,046.814 996.926
Units - Power Purchases		GWh	740.771 740.746
<b>4b Total Units Sent Out</b>	<b>b</b>	<b>GWh</b>	<b>1,787.585 1,737.673</b>
<b>4c Cost per unit</b>	<b>c = a/b</b>	<b>Rs./kwh</b>	<b>3.160 3.100</b>
<b>4d Variation per unit (Cost of Fuel - Power Purchases)</b>		<b>Rs./kwh</b>	<b>(0.061)</b>
<b>4e Variation amount (Cost of Fuel - Power Purchases)</b>		<b>Mill Rs.</b>	<b>(105.236)</b>


Note: CPPA-G's fuel cost for the month of October 2019 is based on NEPRA's determination of fuel cost for the month of August 2019 as the fuel cost for the month of October 2019 is yet to be determined.



# **KE - BQPS - I Generation Statistics Oct-2019**

ITEM		UNITS	Oct.-2018	Oct-2019	Sep-2019
CAPACITY	INSTALLED	MW	1,260	1,260	1,260
	GDC *		1,060	1,020	1,020
UNITS GENERATED	GAS	kWh	80,232,990	158,081,243	135,252,521
	HFO		432,175,010	354,762,757	421,414,479
	HSDO/LDO		2,890	590	1,010
	GROSS		512,410,890	512,844,590	556,668,010
AUXILIARY CONSUMPTION		kWh	42,658,890	42,199,590	43,250,010
		%	8.33	8.23	7.77
NET GENERATION		kWh	469,752,000	470,645,000	513,418,000
BUS BAR SENT OUT			465,054,480	468,022,000	510,111,000
REACTIVE UNITS		kVARh	225,189,500	260,532,400	258,476,700
TOTAL GAS VOLUME	NG	MCF	553,701.54	953,945.77	856,235.93
	LNG		284,895.34	682,166.67	502,484.16
	TOTAL GAS		838,596.88	1,636,112	1,358,720.09
FUEL CONSUMPTION	HFO	M.TON	114,393.53	94,182.61	110,514.34
	LDO	LITRE	1,430.00	300.00	500.00
SPECIFIC FUEL CONSUMPTION	GAS	CFt/kWh	10.45	10.35	10.05
	HFO	Kg/kWh	0.26	0.27	0.26
	LDO	Litre/kWh	0.49	0.51	0.50
HEAT RATE	GROSS	BTU/kWh	10,668	10,628	10,521
	BUS BAR		11,754	11,646	11,482
THERMAL EFFICIENCY		%	31.98	32.10	32.43
COST OF FUELS	NG	Rs.	353,261,082	792,956,332	725,686,096
	LNG		486,892,446	1,153,309,223	813,735,294
	TOTAL GAS		840,153,528	1,946,265,555	1,539,421,390
	HFO		8,177,276,788	6,359,227,636	7,478,385,299
	LDO		45,388	9,522	15,870
	TOTAL		9,017,475,704	8,305,502,713	9,017,822,560
COST OF FUELS PER UNIT GENERATED	GAS	Rs.	10.47	12.31	11.38
	HFO		18.92	17.93	17.75
	LDO		15.71	16.14	15.71
	AVERAGE		17.60	16.19	16.20
SENTOUT COST / UNIT		Rs.	19.20	17.65	17.56
BUSBAR SENT OUT COST			19.39	17.75	17.68
GROSS CALORIFIC VALUE	GAS	BTU/CFt	1,014.14	1,008.69	1,028.49
	HFO	BTU/Lb	18,300	18,300	18,300
	LDO		19,000	19,000	19,000

  
**SYED FAIZAM AHMED**  
 Manager  
 BQPS-I (Generation)  
 KE-ELECTRIC LIMITED  
 DGM (P)

  
**SOHAIL AHMED**  
 GM (Performance)  
 BQPS-I, Generation  
 KE-ELECTRIC LIMITED  
 G. M. (Performance)

  
**RAZZAQ ANJUM**  
 Director  
 BQPS-I (Generation)  
 KE-ELECTRIC LIMITED  
 DIRECTOR (BQPS-I)

For information & n.a. Please

- SA(Tariff-I)
- DG (M&E)
- M/F

ADGT  
17/11/19  
CC: Chairman  
M (Tariff)

Received Scanned Copy  
through E-mail



Mr. Syed Safeer Hussain,  
Registrar,  
National Electric Power Regulatory Authority,  
NEPRA Tower, Attaturk Avenue (East),  
Sector G-5/1,  
Islamabad.

Ref No. KE/BPR/NEPRA/2019/1306  
December 13, 2019

**Subject: Monthly Cost Variation for the month of November 2019 under Multi-Year Tariff 2017 – 2023**

Dear Sir,

This is with reference to the mechanism for monthly and quarterly variations provided in the Multi-Year Tariff Determination of K-Electric Limited (KE) dated July 5, 2018 (MYT), notified vide SRO No. 576 (I)/2019 dated May 22, 2019.

In this regard, please find enclosed calculation of monthly variation for the month of November 2019 along with relevant supports, for Authority's approval. Please note that the calculation for the month of November 2019 is based on CPPA-G's latest fuel cost determined by NEPRA for the month of September 2019 and it is subject to adjustment based on the determination for November 2019 to be issued by NEPRA.

Summary of monthly variation as per the mechanism given in MYT is as follows:

Month	Variation Amount (PKR Million)	Variation per unit (PKR / kWh)
Nov-19	(2,412)	(1.901)

#### Economic Dispatch Order

KE dispatches as per Economic Merit Order from its own generating units (with the available fuel resources) and import from external sources. It is also certified that the cost of fuel and power purchase claim does not include any amount of late payment surcharge / mark-up / interest. All the requisite details including generation statistic sheets and invoices are enclosed.

#### Heat Rate

In the MYT, NEPRA has determined provisional Heat rates for KE's generating plants and has directed KE to conduct fresh Heat rate test for its plants, based on which final Heat rates will be determined by NEPRA.

In this regard, Heat rate test for BQPS – II was conducted in June 2018 and Independent Engineer's test report was submitted to NEPRA, based on which NEPRA issued its decision on Heat rate of BPQS – II on May 9, 2019. However, being aggrieved with certain points in the decision, KE filed a motion for review with NEPRA on May 16, 2019.

The attached calculations are based on BQPS – II Heat rates as given in NEPRA's decision dated May 9, 2019 and required adjustment will be submitted to NEPRA after any change in the Heat rate pursuant to the review procedure.

Senior Advisor Tariff-I  
Dy No: 10584  
Date: 17-12-19

Received along with Folder.

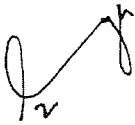
REGISTRAR  
Dy. No. 13347  
Date: 16-12-19

Ag

Further, Heat rate test of KCCP, KGTPS and SGTPS Plants have been conducted during June and July 2019. Whereas, heat rate test of BQPS-I plant has been conducted in November 2019 and working for required adjustment will be submitted to NEPRA after determination of final Heat rates for these plants based on the test results.

In view of the accumulated monthly and quarterly tariff variations, which are significantly impacting working capital position of the Company, we would humbly request NEPRA for expeditious processing of pending monthly and quarterly tariff variations.

Sincerely,



**Ayaz Jaffar Ahmed**

**Director – Finance & Regulations**

**Enclosed:**

- Calculation sheet of monthly variation – November 2019
- Supporting Documents for November 2019

**K Electric Limited**

**SUMMARY OF REQUIRED ADJUSTMENT ON ACCOUNT OF VARIATION IN COST OF FUEL AND POWER PURCHASES**

DESCRIPTION		Unit	Sep-19	Nov-19
			Reference	Current
A)	<b>Cost of fuel:</b>			
	Cost of fuel - KE	a	Mill Rs. 13,282.926	7,408.515
	Cost of fuel - Power Purchases		Mill Rs. 5,648.981	3,617.595
	<b>Total</b>		<b>Mill Rs. 18,931.907</b>	<b>11,026.110</b>
B)	<b>Units Sent Out</b>			
	Units Sent Out - KE	b	GWh 1,046.814	661.064
	Units - Power purchases		GWh 740.771	607.757
	<b>Total</b>		<b>GWh 1,787.585</b>	<b>1,268.821</b>
C)	<b>Cost per unit</b>			
	Cost of fuel - KE	c = a/b	Rs./kWh 7.431	5.839
	Cost of fuel - Power Purchases		Rs./kWh 3.160	2.851
	<b>Average</b>		<b>Rs./kWh 10.591</b>	<b>8.690</b>
D)	<b>Variation per unit</b>			
	Cost of fuel - KE	d	Rs./kWh	(1.592)
	Cost of fuel - Power Purchases		Rs./kWh	(0.309)
	<b>Total Fuel Cost Adjustment</b>		<b>Rs./kWh</b>	<b>(1.901)</b>
E)	<b>Total Fuel Cost Adjustment</b>		Ps/kWh	(190.07)
F)	<b>Variation amount</b>			
	Cost of fuel - KE	e = d x	Mill Rs.	(2,019.655)
	Cost of fuel - Power Purchases	b (total)	Mill Rs.	(392.030)
	<b>Total Fuel Cost Adjustment</b>		<b>Mill Rs.</b>	<b>(2,411.685)</b>

Work Sheet- Generation Fuel Cost Variation

DESCRIPTION		Sep-19	Nov-19
		Reference	Current
<b>1 UNITS SENT OUT</b>			
<b>1a UNITS SENT OUT ON FURNACE OIL</b>			
i	<u>Bin Qasim - I</u>		
	Unit 1	GWh 67.409	21.066
	Unit 2	GWh 78.445	31.451
	Unit 3	GWh 60.425	22.517
	Unit 4	GWh 57.492	9.220
	Unit 5	GWh 52.705	34.041
	Unit 6	GWh 71.235	16.892
	Total units sent out on furnace oil - Bin Qasim - I	GWh 387.711	135.185
<b>1b UNITS SENT OUT ON GAS</b>			
i	<u>Bin Qasim - I</u>		
	Unit 1	GWh 10.868	5.353
	Unit 2	GWh 6.991	3.562
	Unit 3	GWh 0.654	0.214
	Unit 4	GWh 4.894	0.597
	Unit 5	GWh 31.440	12.328
	Unit 6	GWh 23.702	18.352
	Total units sent out on gas - Bin Qasim - I	GWh 78.550	40.406
	ii Bin Qasim II - 560 MW	GWh 219.340	210.803
	iii Korangi Town Gas Turbine II	GWh 23.177	5.698
	iv Site Gas Turbine II	GWh 30.289	9.118
	v Korangi CCPP	GWh 72.594	49.597
	Total units sent out on gas - KE	GWh 423.950	315.622
<b>1c UNITS SENT OUT ON LNG</b>			
i	<u>Bin Qasim - I</u>		
	Unit 1	GWh 6.378	3.360
	Unit 2	GWh 4.103	2.236
	Unit 3	GWh 0.384	0.134
	Unit 4	GWh 2.872	0.375
	Unit 5	GWh 18.451	7.738
	Unit 6	GWh 13.910	11.520
	Total units sent out on LNG - Bin Qasim - I	GWh 46.097	25.363
	ii Bin Qasim II - 560 MW	GWh 120.124	142.827
	iii Korangi Town Gas Turbine II	GWh 12.576	3.566
	iv Site Gas Turbine II	GWh 16.541	5.812
	v Korangi CCPP	GWh 39.814	32.689
	Total units sent out on LNG - KE	GWh 235.153	210.257
	Total units sent out KE	GWh 1,046.814	661.064
<b>2 HEAT RATE AT BUS BAR</b>			
i	<u>Bin Qasim - I</u>		
	Unit 1	Btu/kWh 10,802	10,802
	Unit 2	Btu/kWh 10,650	10,650
	Unit 3	Btu/kWh 10,996	10,996
	Unit 4	Btu/kWh 10,899	10,899
	Unit 5	Btu/kWh 10,304	10,304
	Unit 6	Btu/kWh 10,249	10,249
	ii Bin Qasim II - 560 MW	Btu/kWh 8,358	8,358
	iii Korangi Town Gas Turbine II	Btu/kWh 8,738	8,738
	iv Site Gas Turbine II	Btu/kWh 8,746	8,746
	v Korangi CCPP	Btu/kWh 8,497	8,497

Work Sheet- Generation Fuel Cost Variation

DESCRIPTION		Sep-19	Nov-19		
		Reference	Current		
3	<u>Calorific Value - Furnace Oil</u>	Btu/kg	40,351	40,351	
4	<u>FUEL PRICES</u>				
4a	Fuel Price - Gas	Rs./MMBTU	824	824	
4b	Fuel Price - Furnace Oil	Rs./Mton	67,766	57,891	
4c	Fuel Price - Furnace Oil	Rs./MMBTU	1,679	1,435	
4d	Fuel Price - LNG	Rs./MMBTU	1,575	1,705	
5	<u>COST OF FUEL</u>				
	<u>5a Furnace oil</u>				
	<u>i Bin Qasim - I</u>				
	Unit 1	Mill Rs.	1,222.872	326.461	
	Unit 2	Mill Rs.	1,403.049	480.546	
	Unit 3	Mill Rs.	1,115.852	355.218	
	Unit 4	Mill Rs.	1,052.334	144.162	
	Unit 5	Mill Rs.	912.052	503.225	
	Unit 6	Mill Rs.	1,226.115	248.372	
	Total Cost of Furnace Oil - Bin Qasim - I	Mill Rs.	6,932.273	2,057.983	
	<u>5b Gas</u>				
	<u>i Bin Qasim - I</u>				
	Unit 1	Mill Rs.	96.738	47.647	
	Unit 2	Mill Rs.	61.353	31.255	
	Unit 3	Mill Rs.	5.927	1.939	
	Unit 4	Mill Rs.	43.953	5.366	
	Unit 5	Mill Rs.	266.941	104.667	
	Unit 6	Mill Rs.	200.167	154.987	
	Total Cost of Gas - Bin Qasim - I	Mill Rs.	675.079	345.861	
	ii Bin Qasim II - 560 MW	Mill Rs.	1,510.677	1,451.876	
	iii Korangi Town Gas Turbine II	Mill Rs.	166.876	41.025	
	iv Site Gas Turbine II	Mill Rs.	218.280	65.710	
	v Korangi CCPP	Mill Rs.	508.271	347.258	
	Total Cost of Gas - KE	Mill Rs.	3,079.183	2,251.730	
	<u>5c LNG</u>				
	<u>i Bin Qasim - I</u>				
	Unit 1	Mill Rs.	108.482	61.900	
	Unit 2	Mill Rs.	68.802	40.605	
	Unit 3	Mill Rs.	6.646	2.518	
	Unit 4	Mill Rs.	49.289	6.971	
	Unit 5	Mill Rs.	299.348	135.977	
	Unit 6	Mill Rs.	224.467	201.351	
	Total Cost of LNG - Bin Qasim - I	Mill Rs.	757.034	449.323	
	ii Bin Qasim II - 560 MW	Mill Rs.	1,580.943	2,035.956	
	iii Korangi Town Gas Turbine II	Mill Rs.	173.033	53.138	
	iv Site Gas Turbine II	Mill Rs.	227.791	86.684	
	v Korangi CCPP	Mill Rs.	532.668	473.702	
	Total Cost of LNG - KE	Mill Rs.	3,271.469	3,098.802	
	Total cost of fuel - KE	a	Mill Rs.	13,282.926	7,408.515
6	<u>Variation in Cost of Fuel - KE</u>				
6a	Units Sent Out - KE	GWh	1,046.814	661.064	
6b	Units - Power Purchases	GWh	740.771	607.757	
	Total Units Sent Out	b	GWh	1,787.585	1,268.821
6c	Cost per unit	c = a/b	Rs./kWh	7.431	5.839
6d	Variation per unit (Cost of Fuel - KE)		Rs./kWh		(1.592)
6e	Variation amount (Cost of Fuel - KE)		Mill Rs.		(2,019.655)

Work Sheet- Power Purchase Cost Variation

DESCRIPTION		Sep-19	Nov-19		
		Reference	Current		
<b>1 POWER PURCHASES</b>					
a	KANUPP	GWh	-	18.714	
b	TAPAL	GWh	76.567	32.755	
c	GUL AHMED	GWh	78.337	17.160	
d	CPPA-G	GWh	444.965	391.132	
e	ANOUD POWER	GWh	3.982	5.648	
f	INT IND (IIL)	GWh	4.346	7.235	
g	FFBL	GWh	32.840	33.472	
h	SNPC	GWh	68.509	64.179	
i	OURSUN	GWh	6.999	6.575	
j	CPPA-G - 150 MW	GWh	24.227	30.886	
<b>TOTAL</b>		<b>GWh</b>	<b>740.771</b>	<b>607.757</b>	
<b>2 COST OF POWER PURCHASES - FUEL COST</b>					
a	KANUPP	Mill Rs.	-	215.180	
b	TAPAL - Note 1	Mill Rs.	1,103.532	378.246	
c	GUL AHMED - Note 1	Mill Rs.	1,235.632	207.905	
d	CPPA-G - Note 2	Mill Rs.	2,368.059	1,825.648	
e	ANOUD POWER	Mill Rs.	51.115	61.091	
f	INT IND (IIL)	Mill Rs.	43.509	72.426	
g	FFBL	Mill Rs.	215.746	242.254	
h	SNPC	Mill Rs.	502.455	470.680	
i	OURSUN	Mill Rs.	-	-	
j	CPPA-G - 150 MW - Note 2	Mill Rs.	128.934	144.165	
<b>TOTAL</b>		<b>Mill Rs.</b>	<b>5,648.981</b>	<b>3,617.595</b>	
<b>3 FUEL COST / UNIT</b>					
a	KANUPP	Rs./kwh	-	11.498	
b	TAPAL	Rs./kwh	14.413	11.548	
c	GUL AHMED	Rs./kwh	15.773	12.116	
d	CPPA-G	Rs./kwh	5.322	4.668	
e	ANOUD POWER	Rs./kwh	12.838	10.817	
f	INT IND (IIL)	Rs./kwh	10.012	10.010	
g	FFBL	Rs./kwh	6.570	7.238	
h	SNPC	Rs./kwh	7.334	7.334	
i	OURSUN	Rs./kwh	-	-	
j	CPPA-G - 150 MW	Rs./kwh	5.322	4.668	
<b>4 VARIATION IN COST OF FUEL - POWER PURCHASES</b>					
<b>4a Cost of Fuel - Power Purchases</b>		<b>a</b>	<b>Mill Rs.</b>	<b>5,648.981</b>	<b>3,617.595</b>
<b>Units Sent out:</b>					
Units Sent Out - KE			GWh	1,046.814	661.064
Units - Power Purchases			GWh	740.771	607.757
<b>4b Total Units Sent Out</b>		<b>b</b>	<b>GWh</b>	<b>1,787.585</b>	<b>1,268.821</b>
<b>4c Cost per unit</b>		<b>c = a/b</b>	<b>Rs./kwh</b>	<b>3.160</b>	<b>2.851</b>
<b>4d Variation per unit (Cost of Fuel - Power Purchases)</b>			<b>Rs./kwh</b>		<b>(0.309)</b>
<b>4e Variation amount (Cost of Fuel - Power Purchases)</b>			<b>Mill Rs.</b>		<b>(392.030)</b>

Note 1: In Tariff determination of Tapal and Gul Ahmed, NEPRA has used a reference Calorific Value (CV) for reference Fuel cost with direction to adjust the fuel cost with actual CV, subject to a minimum threshold. However, Tapal and Gul Ahmed have raised the invoiced for November 2019 based on the minimum CV, without referring to the actual CV. KE has currently made the payment based on reference CV and has included the same in FCA calculation. Further, KE has requested Tapal and Gul Ahmed for data of actual CV and adjustment based on the same. Accordingly, the amounts are subject to adjustment based on evidence provided by Tapal and Gul Ahmed for actual CV.

Note 2: CPPA-G's fuel cost for the month of November 2019 is based on NEPRA's determination of fuel cost for the month of September 2019 as the fuel cost for the month of November 2019 is yet to be determined.

Mr. Syed Safeer Hussain,  
Registrar,  
National Electric Power Regulatory Authority  
NEPRA Tower, Attaturk Avenue (East),  
Sector G-5/1,  
Islamabad.

Ref No. KE/BPR/NEPRA/2020/046  
January 15, 2020

• SA (Tariff-I)  
Copy to:  
- DG (M&E)  
- M/F

CC: Chairman  
- M (Tariff)

**Subject: Monthly Cost Variation for the month of December 2019 under Multi-Year Tariff 2017 – 2023**

Dear Sir,

This is with reference to the mechanism for monthly and quarterly variations provided in the Multi-Year Tariff Determination of K-Electric Limited (KE) dated July 5, 2018 (MYT), notified vide SRO No. 576 (I)/2019 dated May 22, 2019.

In this regard, please find enclosed calculation of monthly variation for the month of December 2019 along with relevant supports, for Authority's approval. Please note that the calculation for the month of December 2019 is based on CPPA-G's latest fuel cost determined by NEPRA for the month of October 2019 and it is subject to adjustment based on the determination for December 2019 to be issued by NEPRA.

Summary of monthly variation as per the mechanism given in MYT is as follows:

Month	Variation Amount (PKR Million)	Variation per unit (PKR / kWh)
Dec-19	(2,403)	(2.354)

#### Economic Dispatch Order

KE dispatches as per Economic Merit Order from its own generating units (with the available fuel resources) and import from external sources. It is also certified that the cost of fuel and power purchase claim does not include any amount of late payment surcharge / mark-up / interest. All the requisite details including generation statistic sheets and invoices are enclosed.

#### Heat Rate

In the MYT, NEPRA has determined provisional Heat rates for KE's generating plants and has directed KE to conduct fresh Heat rate test for its plants, based on which final Heat rates will be determined by NEPRA.

In this regard, NEPRA has issued its decision on Heat rate for BQPS – II plant on January 1, 2020 and accordingly the calculations are based on Heat rates determined therein.

Further, Heat rate test of KCCP, KGTPS and SGTPS Plants have been conducted during June and July 2019, and heat rate test of BQPS-I plant has been conducted in November 2019. The working for required adjustment will be submitted to NEPRA after determination of final Heat rates for these plants based on the test results.

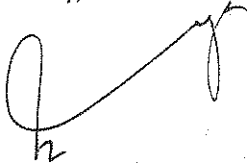
REGISTRAR  
Dy. No. 980  
Date: 17-01-20

Senior Advisor (Legal)  
Dy. No. 545  
Date: 20-1-20



KE would humbly request NEPRA for expeditious processing of pending monthly variations for July 2019 to November 2019 and quarterly tariff variations for the period April 2019 to September 2019.

Sincerely,



**Ayaz Jaffar Ahmed**  
**Director – Finance & Regulations**

**Enclosed:**

- Calculation sheet of monthly variation – December 2019
- Supporting Documents for December 2019

K Electric Limited

SUMMARY OF REQUIRED ADJUSTMENT ON ACCOUNT OF VARIATION IN COST OF FUEL AND POWER PURCHASES

DESCRIPTION		Unit	Sep-19 Reference	Dec-19 Current
A)	Cost of fuel:			
	Cost of fuel - KE	a	Mill Rs. 13,291.171	4,835.576
	Cost of fuel - Power Purchases		Mill Rs. 5,648.981	3,579.172
	Total		Mill Rs. 18,940.151	8,414.748
B)	Units Sent Out			
	Units Sent Out - KE	b	GWh 1,046.814	441.728
	Units - Power purchases		GWh 740.771	579.279
	Total		GWh 1,787.585	1,021.007
C)	Cost per unit			
	Cost of fuel - KE	c = a/b	Rs./kWh 7.435	4.736
	Cost of fuel - Power Purchases		Rs./kWh 3.160	3.506
	Average		Rs./kWh 10.595	8.242
D)	Variation per unit			
	Cost of fuel - KE	d	Rs./kWh	(2.699)
	Cost of fuel - Power Purchases		Rs./kWh	0.345
	Total Fuel Cost Adjustment		Rs./kWh	(2.354)
E)	Total Fuel Cost Adjustment		Ps/kWh	(235.38)
F)	Variation amount			
	Cost of fuel - KE	e = d x	Mill Rs.	(2,755.882)
	Cost of fuel - Power Purchases	b (total)	Mill Rs.	352.669
	Total Fuel Cost Adjustment		Mill Rs.	(2,403.213)

Work Sheet- Generation Fuel Cost Variation

DESCRIPTION		Sep-19	Dec-19
		Reference	Current
<b>1</b>	<b>UNITS SENT OUT</b>		
<b>1a</b>	<b>UNITS SENT OUT ON FURNACE OIL</b>		
i	<u>Bin Qasim - I</u>		
	Unit 1	GWh 67.409	-
	Unit 2	GWh 78.445	-
	Unit 3	GWh 60.425	0.842
	Unit 4	GWh 57.492	0.946
	Unit 5	GWh 52.705	14.311
	Unit 6	GWh 71.235	2.353
	Total units sent out on furnace oil - Bin Qasim - I	GWh 387.711	18.452
<b>1b</b>	<b>UNITS SENT OUT ON GAS</b>		
i	<u>Bin Qasim - I</u>		
	Unit 1	GWh 10.868	-
	Unit 2	GWh 6.991	-
	Unit 3	GWh 0.654	0.130
	Unit 4	GWh 4.894	0.173
	Unit 5	GWh 31.440	0.600
	Unit 6	GWh 23.702	0.170
	Total units sent out on gas - Bin Qasim - I	GWh 78.550	1.073
	ii Bin Qasim II - 560 MW	GWh 219.340	172.947
	iii Korangi Town Gas Turbine II	GWh 23.177	1.171
	iv Site Gas Turbine II	GWh 30.289	2.985
	v Korangi CCPP	GWh 72.594	19.471
	Total units sent out on gas - KE	GWh 423.950	197.646
<b>1c</b>	<b>UNITS SENT OUT ON LNG</b>		
i	<u>Bin Qasim - I</u>		
	Unit 1	GWh 6.378	-
	Unit 2	GWh 4.103	-
	Unit 3	GWh 0.384	0.164
	Unit 4	GWh 2.872	0.219
	Unit 5	GWh 18.451	0.759
	Unit 6	GWh 13.910	0.215
	Total units sent out on LNG - Bin Qasim - I	GWh 46.097	1.357
	ii Bin Qasim II - 560 MW	GWh 120.124	201.874
	iii Korangi Town Gas Turbine II	GWh 12.576	1.043
	iv Site Gas Turbine II	GWh 16.541	2.709
	v Korangi CCPP	GWh 39.814	18.647
	Total units sent out on LNG - KE	GWh 235.153	225.630
	Total units sent out KE	GWh 1,046.814	441.728
<b>2</b>	<b>HEAT RATE AT BUS BAR</b>		
i	<u>Bin Qasim - I</u>		
	Unit 1	Btu/kWh 10,802	10,802
	Unit 2	Btu/kWh 10,650	10,650
	Unit 3	Btu/kWh 10,996	10,996
	Unit 4	Btu/kWh 10,899	10,899
	Unit 5	Btu/kWh 10,304	10,304
	Unit 6	Btu/kWh 10,249	10,249
	ii Bin Qasim II - 560 MW	Btu/kWh 8,381	8,381
	iii Korangi Town Gas Turbine II	Btu/kWh 8,738	8,738
	iv Site Gas Turbine II	Btu/kWh 8,746	8,746
	v Korangi CCPP	Btu/kWh 8,497	8,497

Work Sheet- Generation Fuel Cost Variation

DESCRIPTION		Sep-19	Dec-19		
		Reference	Current		
3	<u>Calorific Value - Furnace Oil</u>	Btu/kg	40,351	40,351	
4	<u>FUEL PRICES</u>				
4a	Fuel Price - Gas	Rs./MMBTU	824	824	
4b	Fuel Price - Furnace Oil	Rs./Mton	67,766	57,777	
4c	Fuel Price - Furnace Oil	Rs./MMBTU	1,679	1,432	
4d	Fuel Price - LNG	Rs./MMBTU	1,575	1,682	
5	<u>COST OF FUEL</u>				
5a	<u>Furnace oil</u>				
i	<u>Bin Qasim - I</u>				
	Unit 1	Mill Rs.	1,222.872	-	
	Unit 2	Mill Rs.	1,403.049	-	
	Unit 3	Mill Rs.	1,115.852	13.263	
	Unit 4	Mill Rs.	1,052.334	14.757	
	Unit 5	Mill Rs.	912.052	211.143	
	Unit 6	Mill Rs.	1,226.115	34.530	
	Total Cost of Furnace Oil - Bin Qasim - I	Mill Rs.	6,932.273	273.692	
5b	<u>Gas</u>				
i	<u>Bin Qasim - I</u>				
	Unit 1	Mill Rs.	96.738	-	
	Unit 2	Mill Rs.	61.353	-	
	Unit 3	Mill Rs.	5.927	1.178	
	Unit 4	Mill Rs.	43.953	1.555	
	Unit 5	Mill Rs.	266.941	5.095	
	Unit 6	Mill Rs.	200.167	1.434	
	Total Cost of Gas - Bin Qasim - I	Mill Rs.	675.079	9.262	
	ii Bin Qasim II - 560 MW	Mill Rs.	1,514.706	1,194.326	
	iii Korangi Town Gas Turbine II	Mill Rs.	166.876	8.429	
	iv Site Gas Turbine II	Mill Rs.	218.280	21.509	
	v Korangi CCPP	Mill Rs.	508.271	136.326	
	Total Cost of Gas - KE	Mill Rs.	3,083.212	1,369.851	
5c	<u>LNG</u>				
i	<u>Bin Qasim - I</u>				
	Unit 1	Mill Rs.	108.482	-	
	Unit 2	Mill Rs.	68.802	-	
	Unit 3	Mill Rs.	6.646	3.042	
	Unit 4	Mill Rs.	49.289	4.017	
	Unit 5	Mill Rs.	299.348	13.160	
	Unit 6	Mill Rs.	224.467	3.702	
	Total Cost of LNG - Bin Qasim - I	Mill Rs.	757.034	23.921	
	ii Bin Qasim II - 560 MW	Mill Rs.	1,585.159	2,846.352	
	iii Korangi Town Gas Turbine II	Mill Rs.	173.033	15.339	
	iv Site Gas Turbine II	Mill Rs.	227.791	39.863	
	v Korangi CCPP	Mill Rs.	532.668	266.557	
	Total Cost of LNG - KE	Mill Rs.	3,275.685	3,192.033	
	Total cost of fuel - KE	a	Mill Rs.	13,291.171	4,835.576
6	<u>Variation in Cost of Fuel - KE</u>				
6a	Units Sent Out - KE	GWh	1,046.814	441.728	
6b	Units - Power Purchases	GWh	740.771	579.279	
	Total Units Sent Out	b	GWh	1,787.585	1,021.007
6c	Cost per unit	c = a/b	Rs./kWh	7.435	4.736
6d	Variation per unit (Cost of Fuel - KE)		Rs./kWh		(2.699)
6e	Variation amount (Cost of Fuel - KE)		Mill Rs.		(2,755.882)

Work Sheet- Power Purchase Cost Variation

DESCRIPTION		Sep-19	Dec-19
		Reference	Current
<b>1. POWER PURCHASES</b>			
a	KANUPP	GWh	19.538
b	TAPAL	GWh	23.585
c	GUL AHMED	GWh	12.750
d	CPPA-G	GWh	373.535
e	ANOUD POWER	GWh	4.262
f	INT IND (IIL)	GWh	6.372
g	FFBL	GWh	34.734
h	SNPC	GWh	55.842
i	OURSUN	GWh	6.684
j	CPPA-G - 150 MW	GWh	37.341
k	GHARO SOLAR	GWh	4.635
<b>TOTAL</b>		<b>GWh</b>	<b>740.771 579.279</b>
<b>2. COST OF POWER PURCHASES - FUEL COST</b>			
a	KANUPP	Mill Rs.	213.970
b	TAPAL - Note 1	Mill Rs.	263.722
c	GUL AHMED - Note 1	Mill Rs.	144.433
d	CPPA-G - Note 2	Mill Rs.	1,988.514
e	ANOUD POWER	Mill Rs.	45.044
f	INT IND (IIL)	Mill Rs.	63.808
g	FFBL	Mill Rs.	251.387
h	SNPC	Mill Rs.	409.509
i	OURSUN	Mill Rs.	-
j	CPPA-G - 150 MW - Note 2	Mill Rs.	198.786
k	GHARO SOLAR	Mill Rs.	-
<b>TOTAL</b>		<b>Mill Rs.</b>	<b>5,648.981 3,579.172</b>
<b>3. FUEL COST / UNIT</b>			
a	KANUPP	Rs./kwh	10.951
b	TAPAL	Rs./kwh	11.182
c	GUL AHMED	Rs./kwh	11.328
d	CPPA-G	Rs./kwh	5.324
e	ANOUD POWER	Rs./kwh	10.570
f	INT IND (IIL)	Rs./kwh	10.013
g	FFBL	Rs./kwh	7.238
h	SNPC	Rs./kwh	7.333
i	OURSUN	Rs./kwh	-
j	CPPA-G - 150 MW	Rs./kwh	5.322
k	GHARO SOLAR	Rs./kwh	-
<b>4. VARIATION IN COST OF FUEL - POWER PURCHASES</b>			
4a	Cost of Fuel - Power Purchases	Mill Rs.	5,648.981 3,579.172
Units Sent out:			
	Units Sent Out - KE	GWh	1,046.814 441.728
	Units - Power Purchases	GWh	740.771 579.279
4b	Total Units Sent Out	GWh	1,787.585 1,021.007
4c	Cost per unit	c = a/b	3.160 3.506
4d	Variation per unit (Cost of Fuel - Power Purchases)	Rs./kwh	0.345
4e	Variation amount (Cost of Fuel - Power Purchases)	Mill Rs.	352.669

Note 1: In Tariff determination of Gul Ahmed, NEPRA has used a reference Calorific Value (CV) for reference Fuel cost with direction to adjust the fuel cost with actual CV, subject to a minimum threshold. However, Gul Ahmed have raised the invoiced for December 2019 based on the minimum CV, without referring to the actual CV. KE has currently made the payment based on reference CV and has included the same in FCA calculation. Further, KE has requested Gul Ahmed for data of actual CV and adjustment based on the same. Accordingly, the amounts are subject to adjustment based on evidence provided by Gul Ahmed for actual CV.

Note 2: CPA-G's fuel cost for the month of December 2019 is based on NEPRA's determination of fuel cost for the month of October 2019 as the fuel cost for the month of December 2019 is yet to be determined.