

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/2020/420  
April 17, 2020

**Subject: Monthly Cost Variation for the month of March 2020 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 March 2020 along with relevant supports, for Authority's approval. Please note that the calculation for the month of March 2020 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 March 2020 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)
Mar-20	590	0.480

**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 tests of other plants have been conducted and Independent Engineers' reports have been submitted to NEPRA. The working for required adjustment will be submitted to NEPRA after determination of final Heat rates for these plants based on the test results.

Further, KE would humbly request NEPRA for expeditious processing of pending monthly variations for July 2019 to February 2020 and quarterly tariff variations for the period April 2019 to December 2019.

Sincerely,



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

**Enclosed:**

- Calculation sheet of monthly variation – March 2020
- Supporting Documents for March 2020

**K Electric Limited**

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

DESCRIPTION		Unit	Dec-19	Mar-20
			Reference	Current
<b>A)</b>	<b>Cost of fuel:</b>			
	Cost of fuel - KE	a	Mill Rs. 4,835.576	6,948.931
	Cost of fuel - Power Purchases		Mill Rs. 3,579.172	3,778.301
	<b>Total</b>		<b>Mill Rs. 8,414.748</b>	<b>10,727.232</b>
<b>B)</b>	<b>Units Sent Out</b>			
	Units Sent Out - KE	b	GWh 441.728	638.156
	Units - Power purchases		GWh 579.279	591.834
	<b>Total</b>		<b>GWh 1,021.007</b>	<b>1,229.990</b>
<b>C)</b>	<b>Cost per unit</b>			
	Cost of fuel - KE	c = a/b	Rs./kWh 4.736	5.650
	Cost of fuel - Power Purchases		Rs./kWh 3.506	3.072
	<b>Average</b>		<b>Rs./kWh 8.242</b>	<b>8.721</b>
<b>D)</b>	<b>Variation per unit</b>			
	Cost of fuel - KE	d	Rs./kWh	0.913
	Cost of fuel - Power Purchases		Rs./kWh	(0.434)
	<b>Total Fuel Cost Adjustment</b>		<b>Rs./kWh</b>	<b>0.480</b>
<b>E)</b>	<b>Total Fuel Cost Adjustment</b>		<b>Ps/kWh</b>	<b>47.98</b>
<b>F)</b>	<b>Variation amount</b>			
	Cost of fuel - KE	e = d x	Mill Rs.	1,123.591
	Cost of fuel - Power Purchases	b (total)	Mill Rs.	(533.469)
	<b>Total Fuel Cost Adjustment</b>		<b>Mill Rs.</b>	<b>590.122</b>

Work Sheet- Generation Fuel Cost Variation

DESCRIPTION		Dec-19	Mar-20	
		Reference	Current	
<b>1</b>	<b><u>UNITS SENT OUT</u></b>			
	<b>1a <u>UNITS SENT OUT ON FURNACE OIL</u></b>			
	<b>i <u>Bin Qasim - I</u></b>			
	Unit 1	GWh	-	10.241
	Unit 2	GWh	-	11.859
	Unit 3	GWh	0.842	4.937
	Unit 4	GWh	0.946	-
	Unit 5	GWh	14.311	25.346
	Unit 6	GWh	2.353	26.347
	<b>Total units sent out on furnace oil - Bin Qasim - I</b>	<b>GWh</b>	<b>18.452</b>	<b>78.729</b>
	<b>1b <u>UNITS SENT OUT ON GAS</u></b>			
	<b>i <u>Bin Qasim - I</u></b>			
	Unit 1	GWh	-	3.427
	Unit 2	GWh	-	0.775
	Unit 3	GWh	0.130	0.547
	Unit 4	GWh	0.173	-
	Unit 5	GWh	0.600	10.214
	Unit 6	GWh	0.170	13.177
	<b>Total units sent out on gas - Bin Qasim - I</b>	<b>GWh</b>	<b>1.073</b>	<b>28.140</b>
	ii Bin Qasim II - 560 MW	GWh	172.947	226.196
	iii Korangi Town Gas Turbine II	GWh	1.171	9.904
	iv Site Gas Turbine II	GWh	2.985	25.270
	v Korangi CCPP	GWh	19.471	54.411
	<b>Total units sent out on gas - KE</b>	<b>GWh</b>	<b>197.646</b>	<b>343.922</b>
	<b>1c <u>UNITS SENT OUT ON LNG</u></b>			
	<b>i <u>Bin Qasim - I</u></b>			
	Unit 1	GWh	-	2.076
	Unit 2	GWh	-	0.470
	Unit 3	GWh	0.164	0.331
	Unit 4	GWh	0.219	-
	Unit 5	GWh	0.759	6.186
	Unit 6	GWh	0.215	7.981
	<b>Total units sent out on LNG - Bin Qasim - I</b>	<b>GWh</b>	<b>1.357</b>	<b>17.043</b>
	ii Bin Qasim II - 560 MW	GWh	201.874	146.455
	iii Korangi Town Gas Turbine II	GWh	1.043	4.833
	iv Site Gas Turbine II	GWh	2.709	14.301
	v Korangi CCPP	GWh	18.647	32.874
	<b>Total units sent out on LNG - KE</b>	<b>GWh</b>	<b>225.630</b>	<b>215.505</b>
	<b>Total units sent out KE</b>	<b>GWh</b>	<b>441.728</b>	<b>638.156</b>
<b>2</b>	<b><u>HEAT RATE AT BUS BAR</u></b>			
	<b>i <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	8,381	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		Dec-19	Mar-20	
		Reference	Current	
<b>3</b>	<b><u>Calorific Value - Furnace Oil</u></b>	Btu/kg	40,351	40,351
<b>4</b>	<b><u>FUEL PRICES</u></b>			
<b>4a</b>	Fuel Price - Gas	Rs./MMBTU	824	824
<b>4b</b>	Fuel Price - Furnace Oil	Rs./Mton	57,777	56,988
<b>4c</b>	Fuel Price - Furnace Oil	Rs./MMBTU	1,432	1,412
<b>4d</b>	Fuel Price - LNG	Rs./MMBTU	1,682	1,811
<b>5</b>	<b><u>COST OF FUEL</u></b>			
	<b>5a <u>Furnace oil</u></b>			
	<b>i <u>Bin Qasim - I</u></b>			
	Unit 1	Mill Rs.	-	156.230
	Unit 2	Mill Rs.	-	178.370
	Unit 3	Mill Rs.	13.263	76.672
	Unit 4	Mill Rs.	14.757	-
	Unit 5	Mill Rs.	211.143	368.839
	Unit 6	Mill Rs.	34.530	381.362
	<b>Total Cost of Furnace Oil - Bin Qasim - I</b>	<b>Mill Rs.</b>	<b>273.692</b>	<b>1,161.473</b>
	<b>5b <u>Gas</u></b>			
	<b>i <u>Bin Qasim - I</u></b>			
	Unit 1	Mill Rs.	-	30.507
	Unit 2	Mill Rs.	-	6.805
	Unit 3	Mill Rs.	1.178	4.956
	Unit 4	Mill Rs.	1.555	-
	Unit 5	Mill Rs.	5.095	86.718
	Unit 6	Mill Rs.	1.434	111.283
	<b>Total Cost of Gas - Bin Qasim - I</b>	<b>Mill Rs.</b>	<b>9.262</b>	<b>240.268</b>
	ii Bin Qasim II - 560 MW	Mill Rs.	1,194.326	1,562.050
	iii Korangi Town Gas Turbine II	Mill Rs.	8.429	71.313
	iv Site Gas Turbine II	Mill Rs.	21.509	182.116
	v Korangi CCPP	Mill Rs.	136.326	380.957
	<b>Total Cost of Gas - KE</b>	<b>Mill Rs.</b>	<b>1,369.851</b>	<b>2,436.704</b>
	<b>5c <u>LNG</u></b>			
	<b>i <u>Bin Qasim - I</u></b>			
	Unit 1	Mill Rs.	-	40.598
	Unit 2	Mill Rs.	-	9.056
	Unit 3	Mill Rs.	3.042	6.595
	Unit 4	Mill Rs.	4.017	-
	Unit 5	Mill Rs.	13.160	115.404
	Unit 6	Mill Rs.	3.702	148.095
	<b>Total Cost of LNG - Bin Qasim - I</b>	<b>Mill Rs.</b>	<b>23.921</b>	<b>319.748</b>
	ii Bin Qasim II - 560 MW	Mill Rs.	2,846.352	2,222.326
	iii Korangi Town Gas Turbine II	Mill Rs.	15.339	76.465
	iv Site Gas Turbine II	Mill Rs.	39.863	226.461
	v Korangi CCPP	Mill Rs.	266.557	505.753
	<b>Total Cost of LNG - KE</b>	<b>Mill Rs.</b>	<b>3,192.033</b>	<b>3,350.753</b>
	<b>Total cost of fuel - KE</b>	<b>a Mill Rs.</b>	<b>4,835.576</b>	<b>6,948.931</b>
<b>6</b>	<b>Variation in Cost of Fuel - KE</b>			
	6a Units Sent Out - KE	GWh	441.728	638.156
	6b Units - Power Purchases	GWh	579.279	591.834
	<b>Total Units Sent Out</b>	<b>b GWh</b>	<b>1,021.007</b>	<b>1,229.990</b>
	6c Cost per unit	c = a/b Rs./kWh	4.736	5.650
	<b>6d Variation per unit (Cost of Fuel - KE)</b>	<b>Rs./kWh</b>		<b>0.913</b>
	<b>6e Variation amount (Cost of Fuel - KE)</b>	<b>Mill Rs.</b>		<b>1,123.591</b>

Work Sheet- Power Purchase Cost Variation

DESCRIPTION		Dec-19	Mar-20		
		Reference	Current		
<b>1 POWER PURCHASES</b>					
a	KANUPP - Note 1	GWh	19.538	29.730	
b	TAPAL	GWh	23.585	25.553	
c	GUL AHMED	GWh	12.750	10.307	
d	CPPA-G - Note 2	GWh	373.535	369.721	
e	ANOUD POWER	GWh	4.262	5.349	
f	INT IND (IIL)	GWh	6.372	6.207	
g	FFBL	GWh	34.734	39.058	
h	SNPC	GWh	55.842	62.857	
i	OURSUN	GWh	6.684	8.613	
j	CPPA-G - 150 MW - Note 2	GWh	37.341	24.162	
k	GHARO SOLAR	GWh	4.635	10.277	
	<b>TOTAL</b>	<b>GWh</b>	<b>579.279</b>	<b>591.834</b>	
<b>2 COST OF POWER PURCHASES - FUEL COST</b>					
a	KANUPP - Note 1	Mill Rs.	213.970	330.281	
b	TAPAL	Mill Rs.	263.722	332.585	
c	GUL AHMED	Mill Rs.	144.433	136.396	
d	CPPA-G - Note 2	Mill Rs.	1,988.514	1,968.210	
e	ANOUD POWER	Mill Rs.	45.044	61.409	
f	INT IND (IIL)	Mill Rs.	63.808	62.148	
g	FFBL	Mill Rs.	251.387	295.353	
h	SNPC	Mill Rs.	409.509	463.291	
i	OURSUN	Mill Rs.	-	-	
j	CPPA-G - 150 MW - Note 2	Mill Rs.	198.786	128.629	
k	GHARO SOLAR	Mill Rs.	-	-	
	<b>TOTAL</b>	<b>Mill Rs.</b>	<b>3,579.172</b>	<b>3,778.301</b>	
<b>3 FUEL COST / UNIT</b>					
a	KANUPP - Note 1	Rs./kwh	10.951	11.110	
b	TAPAL	Rs./kwh	11.182	13.016	
c	GUL AHMED	Rs./kwh	11.328	13.233	
d	CPPA-G - Note 2	Rs./kwh	5.324	5.324	
e	ANOUD POWER	Rs./kwh	10.570	11.480	
f	INT IND (IIL)	Rs./kwh	10.013	10.013	
g	FFBL	Rs./kwh	7.238	7.562	
h	SNPC	Rs./kwh	7.333	7.371	
i	OURSUN	Rs./kwh	-	-	
j	CPPA-G - 150 MW - Note 2	Rs./kwh	5.324	5.324	
k	GHARO SOLAR	Rs./kwh	-	-	
<b>4 VARIATION IN COST OF FUEL - POWER PURCHASES</b>					
<b>4a</b>	<b>Cost of Fuel - Power Purchases</b>	<b>a</b>	<b>Mill Rs.</b>	<b>3,579.172</b>	<b>3,778.301</b>
	<b>Units Sent out:</b>				
	Units Sent Out - KE		GWh	441.728	638.156
	Units - Power Purchases		GWh	579.279	591.834
<b>4b</b>	<b>Total Units Sent Out</b>	<b>b</b>	<b>GWh</b>	<b>1,021.007</b>	<b>1,229.990</b>
<b>4c</b>	<b>Cost per unit</b>	<b>c = a/b</b>	<b>Rs./kwh</b>	<b>3.506</b>	<b>3.072</b>
<b>4d</b>	<b>Variation per unit (Cost of Fuel - Power Purchases)</b>		<b>Rs./kwh</b>		<b>(0.434)</b>
<b>4e</b>	<b>Variation amount (Cost of Fuel - Power Purchases)</b>		<b>Mill Rs.</b>		<b>(533.469)</b>

Note 1: Kanupp details are provisional as the invoice for the month is yet to be received.

Note 2: CPPA-G's fuel cost for the month of March 2020 is based on NEPRA's determination of fuel cost for the month of October 2019 (latest determined) as the fuel cost for the month of March 2020 is yet to be determined.