

THE KARACHI ELECTRIC SUPPLY COMPANY LIMITED

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Telephone: 021-9206247/9205792 Fax

Ref. No.: DDRA&SP/ET040/95 Date: April 21, 2009

The Registrar
NEPRA
2nd Floor, OPF Building
Shahrah-e-Jamhuriyat
G-5/2
Islamabad

Subject: Tariff Petition of KESC for Increase in Base Tariff and Modification in Adjustment Mechanism of KESC and application of Revised Terms and Conditions and Security Deposit Rates.

Dear Sir,

In supersession of our earlier tariff petition dated (July 25, 2008) in respect of increase in KESC's Base Tariff and Modification in the Existing Adjustment Mechanism, attached is the updated and modified tariff petition of KESC being filed herewith after the execution of the Amendment Agreement ("AA") to Implementation Agreement with the Government of Pakistan dated 13-04-09. As you would recall that the admission of our earlier tariff petition was suspended by NEPRA due to non-submission of concurrence of the Privatization Commission and the Ministry of Water and Power for the filing of tariff petition by KESC vide NEPRA's letter dated August 12, 2008.

KESC would request that the new tariff petition based on its updated legal and financial position, may be accepted and admitted by the Authority for conducting proceedings under the NEPRA Tariff (Standards and Procedure) Rules, 1998 ('Tariff Rules') in a reasonable time period. It is further requested to the Authority to allow immediate application of tariff at the time of admission of the Petition. The request for immediate application of increase in tariff is fully justifiable in view of the financial and technical data demonstrably displayed in the accompanying tariff petition filed by KESC.

Registrar
Dy. No. 1684
Dated 29-04-09

Original one copy received along
with duplicate copies

Lastly, the revised tariff petition is a replacement of our earlier tariff petition, for which we hereby, seek the approval of the Authority to adjust our tariff filing fee already deposited along with our tariff petition dated July 25th, 2008.

In addition, in compliance to the decision of the ECC and policy of the Government of Pakistan to have a similar tariff structure all across the country, KESC has already submitted its revised Terms & Conditions and Security deposit rates for approval of the Authority. The same are still pending. Updated Security Deposit rates are attached with this petition. It is requested that both Terms and Conditions and Security Deposit rates be allowed for application immediately.

We shall remain available for fulfilling any requirement left unattended or any shortfall in the tariff filing fee on account of indexation, etc.

Best Regards,



Abdul Rauf Yousuf
Director, Regulatory Affairs

Tariff Petition by Karachi Electric Supply Company Limited
April 21, 2009

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1. DETAILS OF THE PETITIONER

1.1 NAME AND ADDRESS

Karachi Electric Supply Company Limited ("KESC")

Head Office

7th Floor, State Life Building No.11
Abdullah Haroon Road, Karachi.

Registered Office

2nd Floor, Handicraft Building,
Abdullah Haroon Road, Karachi.

1.2 REPRESENTATIVES

Representatives of KESC:

- | | |
|---------------------|--|
| • Abdul Rauf Yousuf | - Director, Regulatory Affairs |
| • Dr. Naveed Ahmed | - Executive Director, Strategic Planning |
| • Amer Zia | - Deputy Chief Operating Officer, Distribution |

1.3 GROUNDS OF PETITIONER'S INTEREST/ LICENSE DETAILS

Karachi Electric Supply Corporation Limited (KESC), incorporated on September 13, 1913, is a Public Limited Company providing public utility services, more specifically generation, transmission and distribution to the city of Karachi and its suburbs under a license granted by the National Electric Power Regulation Authority (Authority). The Generation and Distribution Licences have been granted and Transmission Licence is in process of approval with the Authority. The KESC is listed on Karachi, Lahore and Islamabad Stock Exchanges.

2. SUMMARY OF THE PETITION

This petition is being submitted for modification in the determination of KESC Tariff made by NEPRA in Case No. NEPRA/TRF-14/KESC 2002 dated September 10, 2002. This petition contains two proposals:

2.1 IMMEDIATE TARIFF INCREASE ON ACCOUNT OF INADEQUATE TARIFF IN 2002-2003 DETERMINATION:

An immediate tariff increase of Rs.1.00/kWh in average tariff of KESC. This represents a 10.6% increase over the current determined tariff of Rs.9.44/kWh as per the NEPRA determination for the period October to December 2008, applicable from January 2009. The requested increase is based on the current base tariff being insufficient for operations and maintenance ("O&M") cost, fuel and power purchase cost. KESC believes that such an increase will enable KESC to meet its immediate cash requirements, including the payment of fuel and power suppliers and provides a reasonable base tariff for the application of future tariff revisions.

Keeping in view the precarious financial position of KESC, the withdrawal / discontinuance of operational subsidy from the Federal Government (post privatization) and the energy crisis being faced in Karachi, any delay in the immediate application of the requested rates would render KESC into a financially unsustainable situation. This might result in a total breakdown of services in the area serviced by KESC. Such an event may not only result in a serious loss to KESC's equity and debt holders and serious security concerns for KESC's management but would also lead to serious law and order implications for the Federal, provincial and city governments.

It is therefore strongly requested that the Authority may grant immediate application of the requested sale rate as provided under rule 4 (7) of the NEPRA Tariff Standards and Procedure Rules 1998. We understand that

the Authority has been gracious to grant such implementation to other Licensees in situations less precarious than those faced presently by KESC.

2.2 MODIFICATION OF EXISTING ADJUSTMENT MECHANISM IN CURRENT TARIFF STRUCTURE FOR FUTURE TARIFF DETERMINATIONS:

Under the current tariff structure, KESC has been unable to fully recovery its costs resulting in accumulated losses of approximately Rs.61.5 billion as at March 31, 2009. We request the following modifications to the existing adjustment mechanism for future tariff determinations to enable KESC to fully recover its costs and operate as a self sufficient and sustainable organization:

- I. Re-setting the 7-year tariff period
- II. Monthly adjustment in tariff for fuel and power purchase cost as per Government of Pakistan policy vide recent amendment in the NEPRA Act and allowed to the Ex WAPDA Discos
- III. Re-setting transmission and distribution ("T&D") losses – benchmarked at 34.2% and 1% yearly reduction thereafter
- IV. Modification of existing fuel cost adjustment mechanism to account for time lag and fuel variation mix
- V. Modification of existing power purchase cost adjustment mechanism
- VI. Deferral / Suspension of existing claw-back mechanism for the 7 year term
- VII. Removal of efficiency factor in the O&M cost component
- VIII. Provision for new investment and capital expenditures

3. CONFIRMATION OF COMPLIANCE WITH TARIFF STANDARDS AND PROCEDURES

This Petition is being filed in accordance with the NEPRA Tariff Standards and Procedure Rules 1998 Part II Sec. 3. The information required to be filed under the Rules can be found under the following Sections:

Rules reference	Requirement	Petition reference
3 (2)	(a) Name and address	1.1 & 1.2
	(a) Grounds giving rise to petitioner's interest & Licensee details	1.3
	(b) Grounds and facts of petition	4
	(c) Determination sought	5
	(d) Comparison of Existing and Proposed Tariff	6
	(e) Summary of Evidence	7

4. GROUNDS AND FACTS ON WHICH THE PETITION IS BASED

4.1. Executive Summary

Under the current tariff regime, KESC has accumulated losses of approximately Rs.61.5 billion since 2002-2003. The company continues to lose over Rs.1 billion per month and its financial position has come to a point where KESC's long-term viability is under threat. KESC is in need of immediate and significant cash injection to cover its operational losses, invest in rehabilitation of its T&D network, and increase its power generation capacity in order to provide relief to the people of Karachi. The new investors/shareholders have agreed to inject US\$ 361 million over the next three years; however, it is imperative that changes be made to the current tariff structure immediately, including an increase of Rs.1.00/kWh in the average sale rate, to make this investment effective and sustainable.

The following sections cover the basis for the requested increase of Rs.1.00/kWh in current average sale rate. Key reasons include:

- a) Insufficient base tariff for O&M costs in 2002-2003 tariff determination and Consumer Price Index ("CPI") increase of the said costs been significantly lower than actual increase
- b) Insufficient base tariff for fuel and power purchase cost in 2002-2003 tariff determination.

The key structural issues with the current tariff structure are also highlighted, followed by requested changes to current adjustment mechanism for future tariff determinations.

4.2. Sources of Inconsistencies in the 2002-2003 Tariff Determination

Prior to privatization, KESC filed a tariff petition (the "Original Petition") on February 12, 2002 with NEPRA for an increase in their average sale rate (tariff) by 47.5%. Subsequently, on May 22, 2002, KESC filed the revised Petition (the "Petition") before NEPRA seeking an increase of 16.0% in the overall tariff and approval of multi-year formula based tariff for the next ten years. The original Petition was revised with certain structural alterations as suggested by the Privatization Commission Advisor,

PriceWaterhouseCoopers ("PWC"). After hearing several interveners in a hearing that lasted three days, the NEPRA decided to allow KESC an increase of just 6.5% in average tariff increasing it to Rs.4.74/kWh, well below KESC's original request for 47.5% and even lower than the revised request of 16%.

It is apparent that an increase of 6.5% was not sufficient as evidenced by the severe financial losses borne by KESC in the 6 years following the tariff determination, in spite of the fact that T&D losses in this same time period were brought down to 34.2% from 41% in 2002-2003. With financial losses increasing over the years, KESC has been unable to invest the necessary and desired amounts in rehabilitation of existing transmission and distribution network which has hampered its ability to further bring down the T&D losses.

The 2002-2003 tariff determination was based on a 35% loss assumption. Under such an assumption (actual losses were 41% in 2003) the estimated loss before tax was worked out to be Rs.6,189 million in 2002-03 as shown in the table below. NEPRA in its 2002-2003 tariff determination on page 26 (Para 70) has stated that with a target of 35% losses the required tariff increase in fiscal year 2003 will be around 25%, much higher than 6.5% granted by NEPRA, to match revenue with costs. This corresponds to Rs.5.57/kWh average sale rate and does not factor any return on assets ("RoA"). In comparison, KESC was required to operate at T&D losses of 23.7% to break-even in 2002-2003 under the tariff granted by NEPRA. This clearly suggests that the determined tariff of Rs.4.74/kWh incorporated an unrealistic level of losses which resulted in over Rs.61.5 billion in accumulated losses since that time.

If the NEPRA had allowed tariff to be Rs.5.16/kWh, a 16.0% increase in tariff, KESC would have reduced net loss to approximately Rs.3 billion in 2002-2003 at determined T&D losses of 35%. As such the accumulated loss due to the original shortfall of Rs.0.42/kWh in the 2002-2003 determination works out to be over Rs.21 billion.

Profit & Loss Statement

Year ending June 30		Determined 2003 35%	Break-Even 2003 24%	2003 35%
Energy Balance (GWh)		9,089	9,089	9,089
Own generation at busbar (GWh)		559	559	559
Auxiliary consumption (GWh)		6.1%	6.1%	6.1%
Percentage		8,530	8,530	8,530
Units sent out at busbar (GWh)		3,378	3,378	3,378
IPPs & other contacts (GWh)		11,908	11,908	11,908
Units available for sale		4,168	2,823	4,168
T & D Losses		35.0%	23.7%	35.0%
Percentage		87	87	87
Free electricity to employees (GWh)				
Units billed	GWh	7,653	8,998	7,653
Average rate of sale of power	Rs/kWh	4.74	4.74	5.57
Increase over previous year		6.5%	6.5%	25.2%
		Million Rs.	Rs/kWh	
Revenue from energy sales		36,268	42,642	42,642
Other Revenue		795	795	795
Total Revenue		37,063	43,437	43,437
Expenditure		19,456	19,456	19,456
Cost of Fuel		13,889	13,889	13,889
Energy purchase cost		938	938	938
Generation		371	371	371
Transmission		3,034	3,034	3,034
Distribution		38	38	38
Provision for Gratuity		731	731	731
Provision for doubtful debts		38,457	38,457	38,457
Total cost of goods sold		(1,394)	4,980	4,980
EBITDA		3,233	3,233	3,233
Accounting Depreciation		(209)	(209)	(209)
Accounting Amortization		3,024	3,024	3,024
Total D & A		(4,419)	1,955	1,955
EBIT		1,771	1,771	1,771
Interest Expenses		(6,189)	185	185
NPBT		185	185	185
Tax Expenses		(6,374)	0.00	0.00
NPAT				

Source: Tariff Determination in Case No. NEPRA/TRF-14/KESC 2002

In Para 71 of the 2002-2003 tariff determination, NEPRA has observed that given the prevailing operating conditions and limited financial capability of KESC, any target of T&D losses, lower than 35% for fiscal year 2003 and 30% for fiscal year 2004 would be unreasonable. In Para 73 of the same determination the NEPRA observes that "We are allowing an increase in average sale rate of 6.5% through the present determination. In the event that KESC is not privatized, further increase in tariff may be sought through tariff revision petitions to be filed by KESC in subsequent years." However, no such revised petitions were filed by KESC prior to privatization as all losses were covered

through operational subsidy from Government of Pakistan ("GoP") and KESC is filing this petition now as this operating shortfall subsidy is no longer available to KESC.

4.3. IMMEDIATE TARIFF INCREASE OF RS.1.00/KWH

4.3.1 Operation and Maintenance Cost

NEPRA granted a base tariff of Rs.0.46/kWh for O&M cost under the 2002-2003 tariff determination. Under the same determination, this base tariff is indexed to the percentage change in the annual CPI applicable on 1st July of each year. Also, the O&M portion of the tariff shall be adjusted by the inflation index (CPI) minus an efficiency factor X_t each year, starting the fourth year of the tariff regime. However, at the point of determination the base tariff for O&M was short by Rs.0.21/kWh compared to the projected O&M costs at 35% T&D losses (determined level) and Rs. 0.35/kWh at the actual loss level. Furthermore, during the last 6 years KESC's O&M costs have increased at a rate much higher than the annual CPI which has further exacerbated the difference and resulted in significant financial losses to KESC.

O&M Cost Analysis							
	2002 - 2003		FY 2009 YTD ¹	Difference Over		CAGR (%)	
	Determined	Actual		Determined	Actual	Determined	Actual
O&M Cost (Rs. Millions)	5,112.0	5,697.0	9,246.9				
Units Billed (gWh)	7,653.1	7,040.6	6,805.8				
O&M Cost (Rs. / kWh Sold)	0.67	0.81	1.36	0.69	0.55	13.1%	9.4%
Corresponding Tariff (Rs. / kWh Sold)	0.46	0.46	0.72	0.26	0.26	8.0%	8.0%
T&D Losses	35.0%	40.8%	34.2%	(0.8%)	(6.5%)		
Short Fall (Rs. / kWh Sold)	(0.21)	(0.35)	(0.64)				

Shortfall in O&M component of tariff
has been continuously increasing

CAGR: Compounded Annual Growth Rate
FY: Fiscal Year (June 30th for KESC)
1: As at March 31, 2009

This difference has continued to grow even though KESC has reduced T&D losses by 6.6% during this time period. Main reasons for the increased O&M costs have been:

- Overall price escalation much higher than CPI as a result of increase in fuel prices

- In May 2002 the numbers of employees were 11,125, however, at time of privatization the employee count was 18,729. All these new employees were hired just prior to privatization resulting in significantly higher O&M costs. As part of the privatization policy no lay offs have been made since then.
- Poor condition of the plants at time of privatization has resulted in increased repair and maintenance cost. Almost no maintenance was conducted on the plants prior to the privatization.

Despite best efforts by management to improve operational efficiency, the O&M tariff determined by NEPRA has fallen significantly short of KESC's actual O&M costs. This continues to affect the Company's financial condition and operational viability, especially in light of the fact that significant capital expenditure is required in the coming years to rehabilitate and expand the existing transmission and distribution network and to add new generation capacity to provide relief to consumers in Karachi. It is imperative that these operational losses be stopped immediately and work be done towards improving financial condition of KESC including facilitating the new investment of US\$ 361 million. **On this basis, we seek an increase of Rs.0.64/kWh in the current tariff to reflect the increased O&M costs.**

4.3.2 Fuel & Power Purchase Cost

Over the years KESC has been unable to fully and timely recover its power purchase and fuel costs through the determined tariff which has resulted in enormous losses and acute liquidity problems to the company. The 2002-2003 tariff determination allowed KESC Rs.3.50/kWh for fuel and power purchase costs whereas the expected cost at time of determination was Rs.4.36/kWh at 35% T&D losses. The shortfall of Rs.0.86/kWh has meant that KESC incurs a loss on every kWh produced or purchased. The actual shortfall in that year was Rs.1.70/kWh based on actual losses of 41%. KESC, through its efforts, has been able to minimize the current shortfall to Rs.0.36/kWh through reduction of losses to 34.2%. During the same time period the application of the 4% cap on quarterly tariff adjustments due to increase in fuel and power purchase costs has resulted in a huge increase in working capital requirements and financial losses to KESC amounting to

approximately Rs.6.75 billion up till notification of removal of 4% cap in September 2008. This is very significant as all power purchase costs and fuel costs are considered to be a pass-through item. Therefore, ECC has allowed to adjust this amount in KESC's quarterly tariff adjustment vide its decision October 14, 2008.

Fuel & Power Purchase Cost Analysis				
	2002 - 2003		Nine Months Ended FY 2009	
	Determined	Actual	Determined	Current
T&D Losses	35.0%	40.8%	35.0%	34.2%
Fuel Cost (Rs. Millions)	19,456.0	21,051.0	26,666.8	26,666.8
Power Purchase Cost (Rs. Millions)	13,889.0	15,582.0	29,880.4	29,880.4
Total Fuel and Power Purchase Cost (Rs. Millions)	33,345.0	36,633.0	56,547.3	56,547.3
Units Billed (gWh)	7,653.1	7,040.6	6,727.1	6,805.8
Total Fuel and Power Purchase Cost Cost (Rs. / kWh)	4.36	5.20	8.41	8.31
Corresponding Tariff Allowed (Rs. / kWh)	3.50	3.50	7.95	7.95
Total Short Fall (Rs. / kWh)	(0.86)	(1.70)	(0.46)	(0.36)

The new investor cannot be expected to continue to bear the financial losses due to an inadequate tariff determination in 2002-2003. It is imperative that this shortfall be removed immediately so that KESC can mitigate the operational losses and invest in its infrastructure to overcome the growing electricity problems in Karachi. **On this basis, we seek an increase of Rs.0.36/kWh in the current tariff to cover the current difference in actual fuel and power purchase cost versus that being allowed/implemented through the existing tariff by NEPRA.**

4.4 MODIFICATION OF EXISTING ADJUSTMENT MECHANISM IN CURRENT TARIFF STRUCTURE FOR FUTURE TARIFF DETERMINATIONS

NEPRA granted a multi-year tariff and set up a quarterly tariff adjustment mechanism to provide the private investor a stable tariff regime under its 2002-2003 tariff determination. However, the current quarterly tariff adjustment mechanism has been unable to fully capture KESC's increase in costs and has resulted in severe losses to the utility. On this basis and to ensure that the new investment of US\$ 361 million creates effective and sustainable improvements, we seek a modification to the current adjustment mechanism. More specifically we request the following:

I. Re-setting the 7-year tariff period

- II. Monthly adjustment in tariff for fuel and power purchase cost as per Government of Pakistan policy vide recent amendment in the NEPRA Act and allowed to the Ex WAPDA Discos
- III. Re-setting transmission and distribution ("T&D") losses – benchmarked at 34.2% and 1% yearly reduction thereafter
- IV. Modification of existing fuel cost adjustment mechanism to account for time lag and fuel variation mix
- V. Modification of existing power purchase cost adjustment mechanism
- VI. Deferral / Suspension of existing claw-back mechanism for the 7 year term
- VII. Removal of efficiency factor in the O&M cost component
- VIII. Provision for new investment and capital expenditures

The existing tariff adjustment mechanism has been unable to fully reflect all of KESC's costs and resulted in accumulated losses of approximately Rs.61.5 billion since 2002. KESC seeks a modification to the existing mechanism so that its financial conditions can be improved and it can operate as a long-term self sustainable organization. This will also ensure availability and reliability of power supply and improve customer service, which is much needed in the current power crisis experienced by the city.

4.4.1 Overview and Shortcomings of Existing Tariff Structure

In preparation for privatization of the KESC in 2002-2003, the company requested that NEPRA grant a Multi-Year Tariff ("MYT"). The new regulatory framework was proposed to assure that the prospective investor would be allowed a reasonable period to recover the losses of the initial years of privatization before the base tariff is adjusted through a review. The MYT established by NEPRA in September 2002 is essentially a CPI minus X price cap on the internal costs of KESC while external costs are considered on a pass through basis. The assurance to earn reasonable returns and incentives to make investment are based on the investors' ability to meet efficiency targets, especially those relating to losses, set by NEPRA. NEPRA approved the MYT framework for KESC while making a number of changes to the original proposal.

Components of Base Tariff for KESC				
Tariff Component	Average Sale Rate		O&M Component	
	PKR / kWh	% of Total Rate	PKR / kWh	% of Total Rate
Generation cost	2.43	51.3%	0.10	21.7%
Power purchase cost	1.48	31.2%	NA	NA
Transmission cost	0.30	6.3%	0.04	8.7%
Distribution cost	0.53	11.2%	0.32	69.6%
Total	4.74	100.0%	0.46	100.0%

Source: Tariff Determination in Case No. NEPRA/TRF-14/KESC 2002

The framework was as follows:

- 1) The base tariff for MYT would be the prevailing average customer tariff with an initial increase of 6.5%.
- 2) For the period up to the end of 7 years after privatization, the average sale rate to be subject to the following adjustments.
 - a. Quarterly adjustment for variation in fuel component of KESC's own generation costs due to fuel price variations during the previous quarter.
 - b. Quarterly adjustment for variation during the previous quarter in purchase cost in accordance with the power purchase agreements with external sources (for inflation, exchange rate variation, fuel price variation, and so on).
 - c. Yearly adjustment to O&M components by applying the Pakistan CPI (consumer price index)- based inflation rate for the previous year less an efficiency factor X See below X factor for various O&M (operation and maintenance) costs.

Percentage Efficiency Factor (X) for KESC		
O&M Component	First 3 Years	Next 4 Years
Generation cost	0.0	2.0
Transmission cost	0.0	2.0
Distribution cost	0.0	3.0

Source: Tariff Determination in Case No. NEPRA/TRF-14/KESC 2002

- 3) To avoid significant tariff fluctuations from one quarter to another, a number of measures shall apply to quarterly tariff adjustments. In particular, the quarterly tariff adjustment for fuel cost variation shall be limited up to a maximum of 2.5% and power purchase cost variation up to 1.5% (a quarterly limit of 4% in total). These limits shall apply separately such that the respective remaining burden or relief is transferred separately to the next quarter.
- 4) A CBM (clawback mechanism) shall apply whereby the profits accruing to KESC beyond a predetermined real ROA on asset (before tax and interest) in a certain year is shared with consumers through tariff reduction in the next year. The consumers' share increases as the profits increase beyond certain levels of ROA. Profits shall be shared between consumers and KESC if the equivalent ROA is
 - a. in excess of 12% in the ratio of 25:75;
 - b. in excess of 15% in the ratio of 50:50; and
 - c. in excess of 18% in the ratio of 75:25.

Although, the MYT was enacted to provide a stable tariff regime to the investor, it has been unable to do so, resulting in accumulated losses of over Rs.43 billion since privatization. A stable tariff regime is imperative for KESC to stop its existing cash bleed and have sustainable operations going forward. We believe there are certain elements of the tariff that have become obsolete in light of actual developments at KESC and superseded by events such as the oil price spike, significant increase in O&M costs, etc. Specifically, we request the following:

- 4.4.1.a Re-setting the 7-Year Tariff Period:** Sustainable operation of KESC is not possible under public or private ownership in the existing tariff regime. There is a need of a tariff structure which allows KESC to accurately recover its costs and allow the investor to incur the required amount in capital expenditure for new generation and rehabilitation of existing T&D network. On this basis, we request a modification be made to the current tariff structure based on realistic assumptions (discussed below) and that the applicable period for the tariff be re-set to begin as of

the date of signing of Amendment Agreement ('AA') to Implementation Agreement ('IA'), providing KESC with greater visibility on the structure and terms of its tariff for the next 7 years. The Amendment Agreement already incorporates this concept, with the Tariff Period defined to begin again from the date of signing of the Amendment Agreement. This is important on account of the following reasons:

- i) The O&M contractor as part of the original Implementation Agreement has been terminated for failure to improve the generation and distribution systems, and has left the system in very poor shape;
- ii) The loss level at the time of MYT and privatization was much higher than the level assumed under the MYT. This has resulted in a revenue shortfall even at the time of the privatization.

4.4.1.b Monthly Adjustment in Tariff: Quarterly adjustment mechanism in tariff under the current tariff regime has meant that KESC has to fund the increase in costs for a period of over three months leading to high working capital requirements. In conditions where the fuel prices are increasing and KESC's financial resources have been depleted, this has resulted in a severe financial burden upon the company. We propose that NEPRA consider tariff adjustments on a monthly basis to stay in line with the changing fuel and power purchase prices and avoid timing differences that have put KESC under financial distress in the past. The National Assembly has already approved the amendment in the National Electric Power Regulatory Authority Act through the finance bill 2008 for monthly adjustments of the power tariff which has already become effective for Ex WAPDA DISCOs. ECC's decision dated October 14, also supports equitable treatment for distribution companies between KESC and Ex WAPDA Discos. Justice therefore demands that KESC must be treated at par with other Discos in respect of timely recovery of cost variations through monthly corresponding variations in consumer end tariff.

4.4.1.c Re-setting T&D Losses: The current NEPRA determination assumes that T&D losses will be progressively reduced over time. NEPRA had stipulated that KESC should be able to reduce T&D losses to a level of 35% in 2002-2003 and 30% in the fiscal year 2003-2004. Furthermore, NEPRA had stated that in case of privatization and investment in improvement of T&D system by private investor the level of losses can be brought down to at least 15% over a 10 year period.

In reality losses in the year 2002-2003 were 40.8% and KESC has been able to reduce it to 34.2% by end of March 2009 but still well above the level assumed in current tariff adjustment mechanism. The new investor needs to be facilitated through a sustainable tariff regime to reduce the relatively high losses to a more desirable level.

Current T&D losses are split between technical and non-technical losses. It has been estimated that technical losses are approximately 18% and non-technical are approximately 16.2%. Heavy capital expenditure is required for reduction of these losses. Due to high operational losses, historically KESC has relied on funds provided by the GoP through its Financial Improvement Plan ("FIP") for carrying out loss reduction projects. Currently these projects, including commissioning of grid stations, high tension transmission lines, installation of SCADA system, laying of feeders, transformers, and installation of capacitors, are in the process of completion and no significant loss reduction can be expected in the near future.

The reduction of non-technical losses requires administrative as well as technical measures such as restructuring of consumer service centers, introduction of automatic meter reading, shifting of meters outside the premises, aerial bundle cable for removal of kundas, busbar arrangement in multi-storey building, installation of check meters, removal of Kunda connections, etc. KESC has reduced its losses from 40.8% in 2002-2003 to 34.2% by end of March 2009, however there still remains a significant

shortage of funds and long way to go before these losses could be reduced to a more reasonable level.

Investment of approximately Rs.30 billion is required for loss reduction projects in the next five years. This requires implementation of a sustainable tariff regime so that KESC can be financially independent and appropriately invest in T&D loss reduction programs. Based on this, we request that the T&D loss assumption in the tariff determination by NEPRA be reset and benchmarked at 34.2% for fiscal year 2008-2009 and reduced by 1% thereafter for the next 7 years. Thereafter, the assumption of losses may be reset. Our request is based on the fact that even with the best possible efforts and support of the Federal Government as well as Local Government, less than 1% per year reduction in T&D losses was achieved during the past 6 years. It is also a fact that improvement in losses becomes more difficult as progressive reduction is achieved.

4.4.1.d Modification of Existing Fuel Cost Adjustment Mechanism: The current fuel cost adjustment mechanism has been unable to provide a full cost pass through. On that basis, we request the following changes to the formula:

- a) **Auxiliary Consumption and Plant Efficiency:** Under the 2002-2003 NEPRA tariff determination, the following plant efficiencies were assumed:

Existing Efficiency Level in Tariff	
	Btu / kWh
Korangi Thermal Power Station	12,900
Bin Qasim Thermal Power Station	10,000
Korangi and SITE Gas Turbines	16,000

Source: KESC 2002-2003 Tariff Petition

In the KESC 2002-2003 tariff petition, the above heat rates were based on units generated, however, under the current fuel cost adjustment mechanism were applied to units sent out, indicating that the current tariff structure does not account for auxiliary consumption. Since

auxiliary consumption is an integral part of generation, the cost of fuel associated with this consumption should be included as a recoverable cost and passed through in the tariff.

Furthermore, the above stated fuel consumption efficiencies were based on the conditions of the power plants in 2002. However, due to poor maintenance and de-rating of plants prior to privatization, the efficiencies of the plants have decreased considerably. KESC expects to spend over significant amount in the next 3 years on the rehabilitation and maintenance of these plants. However, the new investor requires time and economic incentive to improve the current efficiency levels of the plants. On that basis, we request that the fuel consumption efficiency of the plants should be based on the conditions that exist today and **be applicable to units generated** by each plant as under:

Proposed Efficiency Level in Tariff	
	Btu / kWh
Korangi Thermal Power Station	13,500
Bin Qasim Thermal Power Station	10,500
Korangi and SITE Gas Turbines	16,500

- b) **Revision to Fuel Cost Adjustment Mechanism to Account for Change in Fuel Mix and Time Lag:** The existing formula in respect of adjustment to tariff due to variation in fuel cost is unable to 1) capture the variation in fuel mix and 2) does not cover the full year impact of variation in fuel price. To avoid these anomalies and simplify the formula, it is suggested that the variation in fuel price should be **based on average cost per kWh generated for each plant**. Under the proposed structure, last month's average rate for each plant will be used as a reference and the current month's actual price will be treated as revised price. The difference in revised and reference price will be multiplied by units generated during the month by that plant and the fuel cost variation will be passed through in tariff on a monthly basis as shown in the table below.

Sample Calculation of Adjustment in Tariff on Account of Variation in Cost of Fuel

		1st month	2nd month	3rd month
Units Generated - Gas	gWh	529.9	496.8	496.8
Units Generated - FO	gWh	132.5	165.6	165.6
Total Generated	gWh	662.40	662.40	662.40
Price Gas	Rs/kWh	2.50	2.64	2.64
Price FO	Rs/kWh	8.33	9.11	9.89
Cost of Gas	Rs. Millions	1,326.38	1,312.19	1,312.19
Cost of FO	Rs. Millions	1,103.14	1,508.20	1,637.47
Total Cost	Rs. Millions	2,429.52	2,820.38	2,949.66
Revised Cost	Cost/kwh	3.67	4.26	4.45
Reference Cost	Cost/kwh		3.67	4.26
Additional Cost	Cost/kwh		0.59	0.20
Additional Cost	Rs. Millions		390.86	129.27
Units sold with 34.2% T&D losses			403.17	403.17
Additional tariff	Rs/kWh		0.97	0.32

Detailed sample working for the Bin Qasim power plant is attached in the Appendix.

As can be seen from the exhibits given below that the current fuel cost adjustment mechanism is unable to capture the cost impact of change in fuel mix in a scenario where the actual prices of the relevant fuels does not change. In the exhibits below, total cost of fuel increases to Rs.567 million versus Rs.504 million due to change in fuel mix; however, the tariff remains the same which suggests that the existing formula does not allow for change in fuel mix and needs modification so as recover costs that arise from variation in fuel mix.

Exhibit 1 - Impact of Variation in Fuel Mix

		1st QUARTER				
		Month 1	Month 2	Month 3	Next 3 Quarters	Total
Units Sent out on Gas	gWh	8.0	8.0	8.0	72.0	96.0
Units Sent out on FO	gWh	2.0	2.0	2.0	18.0	24.0
Total Units Sent Out	gWh	10.0	10.0	10.0	90.0	120.0
Price Gas - Reference	Rs./kWh	3.50	3.50	3.50	3.50	3.50
Price Gas - Revised	Rs./kWh	3.50	3.50	3.50	3.50	3.50
Price FO - Reference	Rs./kWh	7.00	7.00	7.00	7.00	7.00
Price Fo - Revised	Rs./kWh	7.00	7.00	7.00	7.00	7.00
Cost of Gas - Reference	Rs. Millions	28.00	28.00	28.00	252.00	336.00
Cost of Gas - Revised	Rs. Millions	28.00	28.00	28.00	252.00	336.00
Additional Requirement	Rs. Millions	0.00	0.00	0.00	0.00	0.00
Cost of FO - Reference	Rs. Millions	14.00	14.00	14.00	126.00	168.00
Cost of FO - Revised	Rs. Millions	14.00	14.00	14.00	126.00	168.00
Additional Requirement	Rs. Millions	0.00	0.00	0.00	0.00	0.00
Total Cost - Reference	Rs. Millions	42.00	42.00	42.00	378.00	504.00
Total Cost - Revised	Rs. Millions	42.00	42.00	42.00	378.00	504.00
Additional Requirement	Rs. Millions	0.00	0.00	0.00	0.00	0.00
Total Cost - Reference	Cost/kWH	4.20	4.20	4.20	4.20	4.20
Total Cost - Revised	Cost/kWH	4.20	4.20	4.20	4.20	4.20
Units Sold		6.6	6.6	6.6	59.2	79.0
Additional Tariff	Rs./kWh	--	--	--	--	--

Exhibit 2 - Impact of Variation in Fuel Mix

		1st QUARTER				
		Month 1	Month 2	Month 3	Next 3 Quarters	Total
Units Sent out on Gas	gWh	6.0	6.0	6.0	60.0	78.0
Units Sent out on FO	gWh	4.0	4.0	4.0	30.0	42.0
Total Units Sent Out	gWh	10.0	10.0	10.0	90.0	120.0
Price Gas - Reference	Rs./kWh	3.50	3.50	3.50	3.50	3.50
Price Gas - Revised	Rs./kWh	3.50	3.50	3.50	3.50	3.50
Price FO - Reference	Rs./kWh	7.00	7.00	7.00	7.00	7.00
Price Fo - Revised	Rs./kWh	7.00	7.00	7.00	7.00	7.00
Cost of Gas - Reference	Rs. Millions	21.00	21.00	21.00	210.00	273.00
Cost of Gas - Revised	Rs. Millions	21.00	21.00	21.00	210.00	273.00
Additional Requirement	Rs. Millions	0.00	0.00	0.00	0.00	0.00
Cost of FO - Reference	Rs. Millions	28.00	28.00	28.00	210.00	294.00
Cost of FO - Revised	Rs. Millions	28.00	28.00	28.00	210.00	294.00
Additional Requirement	Rs. Millions	0.00	0.00	0.00	0.00	0.00
Total Cost - Reference	Rs. Millions	49.00	49.00	49.00	420.00	567.00
Total Cost - Revised	Rs. Millions	49.00	49.00	49.00	420.00	567.00
Additional Requirement	Rs. Millions	0.00	0.00	0.00	0.00	0.00
Total Cost - Reference	Cost/kWH	4.90	4.90	4.90	4.67	4.73
Total Cost - Revised	Cost/kWH	4.90	4.90	4.90	4.67	4.73
Units Sold		6.6	6.6	6.6	59.2	79.0
Additional Tariff	Rs./kWh	--	--	--	--	--

Furthermore, the current fuel cost adjustment mechanism is unable to cover the full year impact of change in fuel prices. As observed from Exhibit 3 that the additional tariff required due to variation in fuel prices in the next 9 months works out to Rs.1.52/kWh. However, the allowable tariff under the current formula works out to Rs.1.14/kWh. The balance of Rs.0.38/kWh should be allowed in the following quarter, however, the increase is not reflected, as can be seen in exhibit 4, since there is no difference in reference fuel price and prevailing price in that quarter.

Exhibit 3 - Impact of Variation in Fuel Price

		1st QUARTER				
		Month 1	Month 2	Month 3	Next 3 Quarters	Total
Units Sent out on Gas	gWh	8.0	8.0	8.0	72.0	96.0
Units Sent out on FO	gWh	2.0	2.0	2.0	18.0	24.0
Total Units Sent Out	gWh	10.0	10.0	10.0	90.0	120.0
Price Gas - Reference	Rs./kWh	3.50	3.50	3.50	3.50	3.50
Price Gas - Revised	Rs./kWh	3.50	3.50	3.50	4.50	4.25
Price FO - Reference	Rs./kWh	7.00	7.00	7.00	7.00	7.00
Price Fo - Revised	Rs./kWh	7.00	7.00	7.00	8.00	7.75
Cost of Gas - Reference	Rs. Millions	28.00	28.00	28.00	252.00	336.00
Cost of Gas - Revised	Rs. Millions	28.00	28.00	28.00	324.00	408.00
Additional Requirement	Rs. Millions	0.00	0.00	0.00	72.00	72.00
Cost of FO - Reference	Rs. Millions	14.00	14.00	14.00	126.00	168.00
Cost of FO - Revised	Rs. Millions	14.00	14.00	14.00	144.00	186.00
Additional Requirement	Rs. Millions	0.00	0.00	0.00	18.00	18.00
Total Cost - Reference	Rs. Millions	42.00	42.00	42.00	378.00	504.00
Total Cost - Revised	Rs. Millions	42.00	42.00	42.00	468.00	594.00
Additional Requirement	Rs. Millions	0.00	0.00	0.00	90.00	90.00
Total Cost - Reference	Cost/kWH	4.20	4.20	4.20	4.20	4.20
Total Cost - Revised	Cost/kWH	4.20	4.20	4.20	5.20	4.95
Units Sold		6.6	6.6	6.6	59.2	79.0
Additional Tariff	Rs./kWh	--	--	--	1.52	1.14

Exhibit 4 - Impact of Variation in Fuel Price

		2nd QUARTER				
		Month 1	Month 2	Month 3	Next 3 Quarters	Total
Units Sent out on Gas	gWh	8.0	8.0	8.0	72.0	96.0
Units Sent out on FO	gWh	2.0	2.0	2.0	18.0	24.0
Total Units Sent Out	gWh	10.0	10.0	10.0	90.0	120.0
Price Gas - Reference	Rs./kWh	4.50	4.50	4.50	4.50	4.50
Price Gas - Revised	Rs./kWh	4.50	4.50	4.50	4.50	4.50
Price FO - Reference	Rs./kWh	8.00	8.00	8.00	8.00	8.00
Price Fo - Revised	Rs./kWh	8.00	8.00	8.00	8.00	8.00
Cost of Gas - Reference	Rs. Millions	36.00	36.00	36.00	324.00	432.00
Cost of Gas - Revised	Rs. Millions	36.00	36.00	36.00	324.00	432.00
Additional Requirement	Rs. Millions	0.00	0.00	0.00	0.00	0.00
Cost of FO - Reference	Rs. Millions	16.00	16.00	16.00	144.00	192.00
Cost of FO - Revised	Rs. Millions	16.00	16.00	16.00	144.00	192.00
Additional Requirement	Rs. Millions	0.00	0.00	0.00	0.00	0.00
Total Cost - Reference	Rs. Millions	52.00	52.00	52.00	468.00	624.00
Total Cost - Revised	Rs. Millions	52.00	52.00	52.00	468.00	624.00
Additional Requirement	Rs. Millions	0.00	0.00	0.00	0.00	0.00
Total Cost - Reference	Cost/kWH	5.20	5.20	5.20	5.20	5.20
Total Cost - Revised	Cost/kWH	5.20	5.20	5.20	5.20	5.20
Units Sold		6.6	6.6	6.6	59.2	79.0
Additional Tariff	Rs./kWh	--	--	--	--	--

It is necessary for such anomalies in the adjustment mechanism to be rectified immediately for KESC to fully and accurately recover its fuel costs and reduce its operational losses.

4.4.1.e Modification of Existing Power Purchase Cost Adjustment Mechanism: Since 2002-2003 tariff determination, KESC's reliance on external power producers has increased as its own generation has been unable to cope up with the increasing electricity demand. Power purchase accounted for 30% of units sent out in 2002-2003 fiscal year, whereas, they stood at c. 47% in nine months ended of fiscal year 2009. Consequently, the power purchase bill for KESC has been increasing; however, the corresponding increase in tariff has not been sufficient for KESC to cover its costs. This is due to the fact that the initial tariff determined in 2002-2003 of Rs.1.48/kWh for power purchase component was not sufficient to match the entire cost of power purchase at the time. The situation has further worsened since privatization due to the

application of 4% cap until very recently, lower T&D losses used for the determination in quarterly tariff adjustment and non-inclusion of cost of power purchase from IPPs (other than Tapal and Gul Ahmed). To recover the full additional cost of power purchase from one period to the other (including other IPPs and any form of rental power) and simplify the adjustment mechanism under the current tariff structure, it is requested that the adjustment mechanism for this component of tariff should be based on overall average cost of power purchase for the period. Under this mechanism, the last month's average rate will be used as a reference and the current month's actual price will be treated as revised price. The difference in revised and reference price will be multiplied by units purchased during the month and the variation in cost of power purchase due to the difference in average cost will be passed on to consumers through increase / decrease in tariff on a monthly basis.

Sample Calculation of Adjustment in Tariff on Account of Variation in Power Purchase Cost				
		1st month	2nd month	3rd month
Power Purchased	Mill kWh			
- KANUPP		35.00	35.00	35.00
- PASMIC		7.00	7.00	7.00
- TAPAL		70.00	70.00	70.00
- GUL AHMAD		70.00	70.00	70.00
- ANOUD POWER		2.50	2.50	2.50
- DHA COGEN		50.00	50.00	50.00
- International Industries		10.00	10.00	10.00
- KH Fama		-	-	-
- Rental Power		130.00	150.00	180.00
- NTDC		384.71	306.98	278.33
		759.21	701.48	702.83
Cost of Power Purchased	gWh			
- KANUPP		175.00	178.50	182.00
- PASMIC		35.00	35.00	35.00
- TAPAL		612.50	630.00	647.50
- GUL AHMAD		612.50	630.00	647.50
- ANOUD POWER		20.00	20.63	21.25
- DHA COGEN		225.00	225.00	225.00
- International Industries		45.00	45.00	45.00
- KH Fama		-	-	-
- Rental Power		585.00	750.00	1,035.00
- NTDC		1,419.59	1,132.75	1,027.05
		3,729.59	3,646.87	3,865.30
Rate of Power Purchased	Rs/kwh			
- KANUPP		5.00	5.10	5.20
- PASMIC		5.00	5.00	5.00
- TAPAL		8.75	9.00	9.25
- GUL AHMAD		8.75	9.00	9.25
- ANOUD POWER		8.00	8.25	8.50
- DHA COGEN		4.50	4.50	4.50
- International Industries		4.50	4.50	4.50
- KH Fama		-	-	-
- Rental Power		4.50	5.00	5.75
- NTDC		3.69	3.69	3.69
Average Rate	Rs/kwh	4.91	5.20	5.50
Reference Rate	Rs/kwh		4.912	5.199
Increase/decrease in rate	Rs/kwh		0.29	0.30
Increase/decrease in cost	Rs. Millions		200.90	211.38
Units sold		917.62	854.97	723.32
Increase/decrease in tariff	Rs/kwh		0.23	0.29

4.4.1.f Removal of the Claw-Back Mechanism in the Tariff: The current tariff regime has a built in claw-back mechanism that is designed to essentially cap returns to the Company by requiring earned returns over 12%, 15% and 18% to be repaid 25%, 50% and 75%. While such a mechanism is justifiable in situations where the utility is operating at full efficiency and normal extraneous circumstances, it does not reflect the sort of constraints that KESC presently operating under. The said mechanism is not practical and is counter productive with respect to providing incentives for loss reduction. Furthermore, if the new management is able to achieve a turnaround and generate returns over the above mentioned benchmarks, the Company should be allowed to use that income to invest in its assets (generation, transmission and distribution network, etc.) and work towards resolving the energy crisis in Karachi on permanent basis. Also, it is important to note that with the current level of accumulated losses the entire capital injection would be practically wiped off. This suggests that although at some point the Company might be able to generate returns over the above mentioned benchmarks on its reduced capital base (due to netting off against current accumulated losses), the new investor will be yielding significantly lower returns on its actual investment. We would request the claw-back mechanism be removed from the determined tariff for the current 7-year period, and re-considered for inclusion in the next tariff determination to be made in seven years in the future. The claw-back mechanism can only be practical if KESC becomes profitable and also recovers its entire accumulated losses and capital investments. We would point out that there is no precedent for such a mechanism in any other utility tariff globally. Indeed, the claw-back mechanism provides a significant disincentive to any investor to invest in improving the capacity and efficiency of the company since none of the benefits of this improvement will accrue to the investor. Given the significant new investment required to bring KESC to a sustainable level of operation, the claw-back mechanism is neither appropriate nor effective as a regulatory tool.

4.4.1.g Removal of Efficiency Factor in the O&M Cost Component: The current tariff regime assumes efficiency gains post-privatization, with O&M component of tariff adjusted based on a "CPI - X%" factor after the third year of privatization. The current assumption for these factors is set out in the table below:

Type of O&M	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Generation	CPI	CPI	CPI	CPI - 2%	CPI - 2%	CPI - 2%	CPI - 2%
Transmission	CPI	CPI	CPI	CPI - 2%	CPI - 2%	CPI - 2%	CPI - 2%
Distribution	CPI	CPI	CPI	CPI - 3%	CPI - 3%	CPI - 3%	CPI - 3%

Source: Tariff Determination in Case No. NEPRA/TRF-14/KESC 2002

Since 2002-2003 tariff determination, KESC's O&M cost has increased at a rate much higher than the annual CPI resulting in severe losses to the company. With this in regard, we request NEPRA to consider **re-setting these "x" factors to zero**, reflecting the fact that efficiency gains at KESC are unlikely to be achievable through the period of this tariff determination. Also, CPI adjustment is currently applied annually whereas KESC's O&M costs increase at a much faster rate. Keeping this in mind, we also request that **CPI adjustment be applied on a bi-annual basis going forward.**

4.4.1.h Future Investment Requirements: Capital investment has been severely constrained by the growing cash flow deficits and KESC has relied heavily on GoP for funding through the Financial Improvement Plan (FIP) for capital expenditure requirements of the company. KESC now estimates that capital expenditure of approximately Rs.30 billion (excluding capital expenditure for new generation plants) is required in the next 5 years to address energy losses, rehabilitation / expansion of transmission and distribution network and other service problems. Major items of expenditure include:

- a) **Transmission (c. Rs. 15 billion over next 5 years)**
 - i. Metering and SCADA to improve monitoring and control
 - ii. System expansion to improve reliability and reduce technical losses including introduction of new grid stations

- iii. Installing new 132/220 KV lines
- iv. Rehabilitation / expansion of existing network

b) Distribution (c. Rs. 15 billion over next 5 years)

- v. Theft reduction programs including check and replacement meters and automatic meter readers
- vi. Installation of HT and LT Aerial Bundle Cable
- vii. System improvement and expansion to improve reliability and meet demand growth
- viii. Billing system update
- ix. Introduce Geographic Information System (GIS) for asset identification and efficient customer handling
- x. Installation of power factor corrective devices for voltage stability
- xi. Rehabilitation of distribution system including 11kv feeders

c) Generation

Current Power Plants: KESC plans to spend approximately Rs. 5 – 7 billion on improvement and re-rating of current power plants in the next 5 years. These efforts are expected to give first results within 3-4 years.

Future Generation Plan: In addition, KESC plans to spend over Rs.65 billion to install new generation capacity of over 1,000 MWs in the next 5 years. This includes over 750 MW of new capacity that is already underway, with 2x90 MW GE Jenbacher projects at SITE and Korangi Town, and the 560 MW project at Bin Qasim.

Short – Term:

Rental Power	KESC has already added 50 MW rental units at Haroonabad and West Wharf.
220 KCCP	A 220 MW combined cycle power plant (CCPP) is being installed at Korangi at a cost of c. Rs.15.6 billion.
GE Jenbacher	In order to enhance the output at SITE and Korangi Gas Turbines, KESC plans to invest c. Rs.8.5 billion to bring 192 MW GE

Jenbacher engines. The engines will start their commercial operation by June 2009 with the complete project commissioning by September 2009.

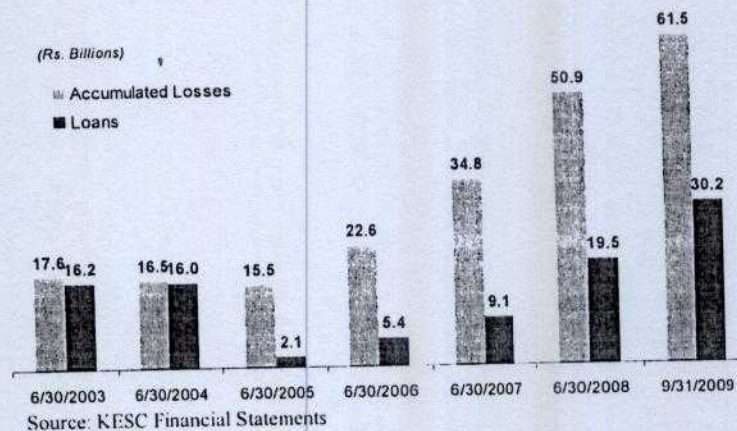
Mid Term:

- 560 BCCP KESC plans to install a Combined Cycle Power Plant of approximately 560 MW (ISO) at Bin Qasim Station with an approximate investment of Rs.33 billion. Completion of the combined cycle operation of the power plant is expected by summer of 2012.
- 220 KCCP For the new 220 Korangi Combined Cycle power plan, KESC plans to close the cycle on the remaining two (2) units. Closing this cycle will add 26 MW of capacity that will be injected into the network during the summer peaks of 2011.
- HRSG for GEJB KESC plans to close the cycle of GE Jenbacher at both the Site and Korangi locations. By closing the cycle about 12 MW will be added to the grid by summer 2011.
- KTPS Replacement In order to enhance the output at KTPS, KESC plans to invest c. Rs.6 billion to bring 100 MW of capacity using GE Jenbacher or similar engines.

Long Term:

- Coal In order to create an efficient generation mix, KESC is planning to add 300-500 MW Coal based power plant every year during 2013-2016 (c. 1,500 MW+).
- Alternative Energy Owing to enormous potential of wind power in and around Karachi incremental supply of energy by wind is expected in future. Future projects of bio-energy are also one of the main interest for the management of KESC.

Financing of Future Investment Requirement: Ideally, a large part of this capital expenditure should be financed through debt, however, in case of KESC where the accumulated losses have grown along with the borrowings in last 3 years, incremental debt capacity has been severely constrained.



This suggests that the new shareholders, along with current shareholders, will need to inject significant amount of equity into KESC going forward. A mechanism needs to be incorporated in the new tariff structure whereby the investor is allowed to earn a reasonable return on such investment in KESC, and is not penalized for improving the balance sheet and efficiency of the company.

Proposed Adjustment in Tariff on Account of Significant Capital Expenditure: As a result of this significant capital expenditure in the next 3 to 4 years, KESC is expected to incur the following:

- Increased debt servicing (principal plus interest) due to shorter repayment period of the loans
- Increased equity injection
- Increased O&M costs

Based on this, we request NEPRA that a provision to be provided in the new tariff structure whereby KESC can recoup the investment (depreciation and financial charges) by demanding the incremental/additional cost over and above that provided in the existing tariff.

4.4.1.i

Conclusion: KESC has been unable to recover its costs under the existing tariff structure and this has resulted in enormous losses to the utility. These losses have grown to a level whereby the sustainability of KESC is under threat. Prior to privatization, KESC was entirely dependent on GoP and any short-fall was covered by GoP through an operational subsidy. These losses have been borne by the private investor since privatization and have hampered its ability to achieve a successful turn around of the utility. Unless the finances of KESC can be put on a firmer footing, with a sustainable tariff, the Company will have no option except resort to load shedding. This will become a vicious circle, whereby industries will start to shift to self-generation, while all other classes of customers will be inclined to not pay the electricity bills due to poor service provided by KESC. Consequently, financial condition of KESC will further aggravate. The company has experienced high T&D losses since early 2000. It is unreasonable to expect the new shareholders, investing US\$ 361 million, to completely turn around such a distressed entity when the current tariff regime does not allow the company to cover its operational costs. The private investor who is responsible to: i) make the company self sustainable and ii) invest the required capital for loss reduction and new generation capacity needs a tariff regime that allows a complete and accurate pass through of costs and also provide the investor with the time that it needs to implement a successful turnaround strategy.

For the reasons above, it is mandatory to have an immediate increase of Rs.1.00/kWh in average tariff rate which will help restore viability in the short-term and modification to the adjustment mechanism to ensure long-term sustainable operations.

5. Determination Sought

5.1 IMMEDIATE TARIFF INCREASE:

An immediate tariff increase of Rs.1.00/kWh in average tariff of KESC. This represents a 10.6% increase in the current determined tariff of Rs.9.44/kWh as per the NEPRA determination for the period October to December 2008, applicable from January 2009. The requested increase is based on the current base tariff being insufficient for operations and maintenance ("O&M") cost, fuel and power purchase cost. KESC believes that such an increase will enable KESC to meet its immediate cash requirements, including the payment of fuel and power suppliers and provide an appropriate base tariff for the application of future tariff revisions.

5.2 MODIFICATION OF EXISTING ADJUSTMENT MECHANISM IN CURRENT TARIFF STRUCTURE FOR FUTURE TARIFF DETERMINATIONS:

Under the current tariff structure, KESC has been unable to fully recovery its costs resulting in accumulated losses of approximately Rs.51 billion. We request the following modifications to the existing adjustment mechanism for future tariff determination in order to allow KESC to be able to fully recover its costs and operate as a long-term sustainable organization:

- I. Re-setting the 7-year tariff period
- II. Monthly adjustment in tariff for fuel and power purchase cost as per Government of Pakistan policy vide recent amendment in the NEPRA Act and allowed to the Ex WAPDA Discos
- III. Re-setting transmission and distribution ("T&D") losses -- benchmarked at 34.2% and 1% yearly reduction thereafter
- IV. Modification of existing fuel cost adjustment mechanism to account for time lag and fuel variation mix
- V. Modification of existing power purchase cost adjustment mechanism

- VI. Deferral / Suspension of existing claw-back mechanism for the 7 year term
- VII. Removal of efficiency factor in the O&M cost component
- VIII. Provision for new investment and capital expenditures

6. **Comparison of Existing and Proposed Tariff (Please refer Annexure B & C)**

KESC has requested for an increase of Rs.1.00/kWh in average tariff as per determination of NEPRA, applicable from July 1, 2009. It is proposed that the required increase may be allowed across the board.

a.	Increase for Operation and Maintenance (O&M) cost: Since the 2002-2003 tariff determination, KESC's O&M costs have increased at rate much higher than the annual CPI. O&M cost for the nine months ended fiscal year 2009 works out to Rs.1.36/kWh versus 0.72/kWh as per determined tariff for the quarter Sep-Dec 2008 i.e. increased by Rs.0.64/kWh.	Rs.0.64/kWh Under the head "Energy Charges"
b.	Increase for non-recovery of additional fuel and power purchase cost through quarterly adjustment mechanism due to: Inadequate tariff increase in 2002, non-provision of auxiliary consumption in the formula, non-achievable higher thermal efficiencies of power plants, non existence of adjustment of variation in fuel mix and non-recovery of 100% additional fuel and power purchase cost due to defective formula.	Rs.0.36/kWh Under the head "Fuel Adjustment Surcharge (F.A.S.)"

Please note that the new tariff structure along with the terms and conditions on similar lines as approved and notified for other DISCOs will be provided as and when finalized with NEPRA

Comparison of Existing and Proposed Tariff Structure

Tariff Structure Feature	Existing Structure	Revised Structure
Base Tariff	Rs. 9.44/kWh Multi-year tariff for 7 years after privatization	Rs. 10.44/kWh Re-setting of tariff from April 13, 2009 and thereafter fixed for 7 years
<i>Request for increase in tariff by Rs. 1.46/kWh across the board</i>		
Adjustment Mechanism		
- T&D Losses	Annual reduction	Benchmarked at 34.2% with 1% yearly reduction thereafter
- Fuel Cost Adjustment Mechanism		
- Auxiliary Consumption Adjustment	No	Yes
- Thermal Efficiencies	Based on 2002 determination	Revision as per existing conditions of the plant
- Impact of Increase in Fuel Price	Not fully covered	Recovery of total additional cost
- Impact of Fuel Mix Variation	No	Yes
- Working of Additional Cost	Not fully covered	On overall average cost basis
- Timing	Quarterly	Monthly
- Power Purchase Cost Adjustment Mechanism		
- Cost of Power Purchase from IPPs	Only Tapal and Gul Ahmed	Cost of purchase from all IPPs including rental power
- Working of Additional Cost	Not fully covered	On overall average cost basis
- Timing	Quarterly	Monthly
- Claw-back Mechanism	Applicable as per existing structure	No claw-back provision for 7 years
- O&M Cost		
- Efficiency Factor	"X" factor applied after 4th year	Removal of efficiency factor
- CPI Application	Annual	Bi-Annual
- Adjustment for New Capital Investment	No provision	Provision to pass through incremental cost

It is worth-mentioning here that there are lot of variations in tariff structure of KESC and WAPDA mainly:

- a. Definitions for various classes of tariff have been updated in Discos Terms and Conditions in line with the latest practices and operational requirements. In case of KESC, the same is still pending.
- b. Minimum load requirement for Time of Use ("ToU") metering has been kept at 5KW in Discos tariff. Whereas, for KESC the minimum load for any such arrangement is 40KW.
- c. Unification of various classes with respect to their applicability has been rationalized in Discos tariff. The same needs to be done at KESC.
- d. Minimum charges also need to be rationalized for various tariff classes.
- e. ToU tariff rates have been introduced for all tariff classes in case of Discos, whereas, in KESC the same is not provided for all classes.

In view of the above it is proposed that once the increase in tariff is finalized, the structure of KESC will be brought in line with WAPDA tariff.

7. **Summary of Evidence**
Included in the body of the petition.

Appendix A

Detailed Calculation of Adjustment in Tariff on Account of Variation in Cost of Fuel

		1st month	2nd month	3rd month
KESC Generation		662,400	662,400	662,400
Generation on Gas	gWh	529,920	496,800	496,800
Generation on Furnace Oil	gWh	132,480	165,600	165,600
Generation on LD/HSD Oil	gWh	-	-	-
Auxiliary consumption		7.5%	7.5%	7.5%
KESC Sent Out		612,720	612,720	612,720
Sent out on Gas	gWh	490,176	459,540	459,540
Sent out on Furnace Oil	gWh	122,544	153,180	153,180
Sent out on LD/HSD Oil	gWh	-	-	-
Fuel consumption				
Gas	MMCF	5,857	5,491	5,491
Heat value	BTU/MCF	950,000	950,000	950,000
Total Heat value	MMBTU	5,564,160	5,216,400	5,216,400
Furnace Oil	M. Ton	34,473	43,091	43,091
Heat value	BTU/M. Ton	40,351,500	40,351,500	40,351,500
Total Heat value	MMBTU	1,391,040	1,738,800	1,738,800
LD/HSD Oil	Litre	-	-	-
Heat value	BTU/Litre	34,500	34,500	34,500
Total Heat value	MMBTU	-	-	-
BTU of Gas		80.0%	75.0%	75.0%
BTU of Furnace Oil	MMBTU	5,564,160	5,216,400	5,216,400
BTU of LD/HSD Oil	MMBTU	1,391,040	1,738,800	1,738,800
Total BTU	MMBTU	6,955,200	6,955,200	6,955,200
BTU/kWh generated				
Gas	BTU/kWh	10,500	10,500	10,500
Furnace Oil	Kg/kWh	0.260	0.260	0.260
LD Oil	Litre/kWh	0.304	0.304	0.304
Average	Btu/KkWh	10,500	10,500	10,500
BTU/kWh sent out				
Gas	BTU/kWh	11,351	11,351	11,351
Furnace Oil	Kg/kwh	0.281	0.281	0.281
LD Oil	Litre/kWh	0.329	0.329	0.329
Average	Btu/KkWh	11,351	11,351	11,351
Fuel Prices				
Gas/Mill BTU	Rs/MMBTU	238.38	251.55	251.55
Furnace Oil	Rs/M. Ton	32,000	35,000	38,000
Average	Rs/MMBTU	793.03	867.38	941.72
Cost of fuel				
Gas	Rs. Millions	1,326.384	1,312.185	1,312.185
Furnace Oil	Rs. Millions	1,103.138	1,508.197	1,637.471
LD/HSD Oil	Rs. Millions	-	-	-
Total cost of fuel	Rs. Millions	2,429.52	2,820.38	2,949.66
Cost per kWh on gas				
- Generated	Rs/kWh	2.50	2.64	2.64
- Sent out	Rs/kWh	2.71	2.86	2.86
Cost per kWh on Fur Oil				
- Generated	Rs/kWh	8.33	9.11	9.89
- Sent out	Rs/kWh	9.00	9.85	10.69
Average Cost per kWh				
- Generated	Rs/kWh	3.67	4.26	4.45
Reference price last month			3.67	4.26
Additional cost of fuel	Rs/kWh		0.59	0.20
Units sold at 34.2% losses	Mill Rs		390.86	129.27
Additional tariff	Rs/kWh		403.17	403.17
Average Cost per kWh				
- Sent out	Rs/kWh	3.97	4.60	4.81
Reference price last month			3.97	4.60
Additional cost of fuel	Rs/kWh		0.64	0.21
Units sold at 34.2% losses	Rs. Millions		390.86	129.27
Additional tariff	Rs/kWh		403.17	403.17

KESC

SCHEDULE OF ELECTRICITY TARIFFS - EXISTING TARIFF

TARIFF CATEGORY/PARTICULARS	Fixed Charges	Energy Charges	F.A.S	Additional Surcharge
	Rs/kW/Month	Ps/kWh	Ps/kWh	Ps/kWh

RESIDENTIAL --- TARIFF A-1

Up to 50 units consumption in a month	-	61	-	79
For consumption above 50 units	-	46	513	174
For first 100 units (1-100) in a month	-	63	513	247
For next 200 units (101-300) in a month	-	156	513	382
For next 700 units (301-1000) in a month	-	193	513	469
Above 1000 units in a month	-	-	-	-

Under this Tariff, there shall be minimum monthly charges at the following rates, even if no energy is consumed during the month.

- a. Single phase connections Rs.45/-
b. Three phase connections Rs.100/- plus Rs.25/- per kW for load in excess of 5 kW

COMMERCIAL --- TARIFF A-2

For first 100 units in a month	-	291	465	418
Above 100 units in a month	-	315	465	430

Under this Tariff, there shall be minimum monthly charges at the following rates, even if no energy is consumed during the month.

- a. Single phase connections Rs 150/-
b. Three phase connections Rs 300/- plus Rs 30/- per kW for load in excess of 10 kW

INDUSTRIAL --- TARIFF - B

B-1 Up to 40 kW (At 400 Volts)	-	186	480	337
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There shall be minimum monthly charges of Rs. 70 per kW for first 20 kilowatt of load and Rs. 90 per kW for loads between 20-40 kW even if no energy is consumed.

B-2 From 41-500 kW (at 400 volts)	300	135	480	250
B-3* Up to 5000 kW (11 kV)	290	134	480	234
B-4* For all loads (at 66, 132 kV).	280	129	480	215
B-5* For all loads (at 220 kV and above)	273	129	480	208

TIME OF DAY (TOD) TARIFF FOR INDUSTRIAL CONSUMERS

PARTICULARS	Fixed Charges Rs/kW/Month	Energy Charges		F A S Ps/kWh	Additional Surcharge	
		Off-Peak Hours	Peak Hours		Off-Peak Hours	Peak Hours
		Ps/kWh	Ps/kWh		Ps/kWh	Ps/kWh
B-2 From 41-500 kW (at 400 volts)	300	125	203	480	234	313
B-3 Upto 5000 kW (11 kV)	290	120	202	480	191	266
B-4 For all loads (at 66, 132 kV).	280	116	192	480	177	256
B-5 For all loads (at 220 kV and above)	273	116	192	480	170	251

Note: B-2 consumers can opt for TOD Tariff

All B-3 & B-4 consumers were to be converted to TOD Tariff by 30-06-2000, after installation of electronic meters with TOD provisions. Normal Tariff (*) will be only applicable to B-3, B-4 and B-5 consumers who have not been provided with TOD meters, till such time TOD meters are provided.

The time period for measuring the maximum demand of B-2, B-3, B-4 and B-5 industrial and TOD meters has been changed from 15 minutes to 30 minutes. Change to take effect on installation of meters capable of measuring the maximum demand in 30 minutes period.

TARIFF CATEGORY/PARTICULARS	Fixed Charges	Energy Charges	F.A.S	Additional Surcharge
	Rs/kW/Month	Ps/kWh	Ps/kWh	Ps/kWh

BULK SUPPLY --- TARIFF - C

C-1 (a) 400 Volts	-	129	505	353
C-1 (b) 400 Volts	220	114	505	354
C-2 (a) 11 kV	-	115	505	333
C-2 (b) 11 kV	216	111	505	345
C-3 (at 66, 132 & 220 kV) --- for all loads	214	106	505	315

Note: The time period for measuring the maximum demand of C-1, C-2, and C-3 meters has been changed from 15 minutes to 30 minutes. Change to take effect on installation of meters capable of measuring maximum demand in 30 minutes period.

AGRICULTURE --- TARIFF - D

D-1 Sindh and Balochistan	72	80	497	236
D-2 Sindh and Balochistan	176	80	497	172

Note: Consumer falling in category D shall have the option to choose between Tariff D-1 and D-2.

TEMPORARY SUPPLY --- TARIFF - E

E-1 (i) Domestic Supply	-	216	513	388
E-1 (ii) Commercial Supply	-	386	465	528

For the above two categories, the minimum bill of the consumer shall be Rs 46/- per day subject to minimum of Rs.200/- for the entire period of supply, even if no energy is consumed.

E-2 (i) Industrial supply	-	241	480	382
E-2 (ii) Bulk Supply	-	181	505	409
(a) at 400 Volts	-	169	505	391
(b) at 11 kV	-	190	505	407
E-2 (iii) Bulk supply to other consumers	-	-	-	-

SEASONAL INDUSTRIAL SUPPLY TARIFF-F**SUPPLY CHARGES**

125% of the "Supply Charges"
of relevant industrial supply
tariff

ADDITIONAL SURCHARGE

125% of the Additional
Surcharge of the relevant
industrial supply tariff

Note: Tariff-F Consumers will have the option to convert to Regular Tariff and vice versa. This option can be exercised at the time of a new connection or at the beginning of the season. Once exercised, the option will remain in force at least for one year

TARIFF CATEGORY/PARTICULARS	Fixed Charges	Energy Charges	F.A.S	Additional Surcharge
	Rs/kW/Month	Ps/kWh	Ps/kWh	Ps/kWh

PUBLIC LIGHTING TARIFF-G

G-1 Units Charges	-	220	484	488
G-2 (a) for 60 watts		Rs 495/per year per lamp		470
(b) for 100 watts		Rs 908/per year per lamp		470

Note: Consumer falling in category G shall have the option to choose between Tariff G-1 and G-2.

Fixed Line Charges Per Month Per MileRs

(i) Where the entire capital cost in laying street lighting supply line which is exclusively meant for street lighting is borne by the Corporation.	253
(ii) Where the entire capital cost in laying street lighting supply line, which is exclusively meant for street lighting is borne by the Consumer.	23
(iii) Where the entire capital cost in laying street lighting supply line, over the existing distribution system is borne by the Corporation.	158
(iv) Where the entire capital cost in laying street lighting supply line, over the existing distribution system is borne by the consumer.	33
(v) For street lighting supply through underground cables.	Rates to be negotiated

RESIDENTIAL COLONIES ATTACHED TO INDUSTRIAL PREMISES (TARIFF-II)

Consumers having their own transformers	150	513	426
Consumers not having their own transformers	151	513	428

Note:

Terms and conditions of the Schedule of Tariff as notified vide SRO 819(1)/2001 dated November 29, 2001 shall continue to remain in force.

KESC

SCHEDULE OF ELECTRICITY TARIFFS - PROPOSED TARIFF

TARIFF CATEGORY/PARTICULARS	Fixed Charges	Energy Charges	F.A.S	Additional Surcharge
	Rs/kW/Month	Ps/kWh	Ps/kWh	Ps/kWh

RESIDENTIAL --- TARIFF A-1

Up to 50 units consumption in a month	-	61	-	79
For consumption above 50 units				
For first 100 units (1-100) in a month	-	110	549	174
For next 200 units (101-300) in a month	-	127	549	247
For next 700 units (301-1000) in a month	-	220	549	382
Above 1000 units in a month	-	257	549	469

Under this Tariff, there shall be minimum monthly charges at the following rates, even if no energy is consumed during the month.

- a. Single phase connections Rs.45/-
b. Three phase connections Rs.100/- plus Rs.25/- per kW for load in excess of 5 kW

COMMERCIAL --- TARIFF A-2

For first 100 units in a month	-	355	501	418
Above 100 units in a month	-	379	501	430

Under this Tariff, there shall be minimum monthly charges at the following rates, even if no energy is consumed during the month.

- a. Single phase connections Rs 150/-
b. Three phase connections Rs 300/- plus Rs 30/- per kW for load in excess of 10 kW

INDUSTRIAL --- TARIFF - B

B-1 Up to 40 kW (At 400 Volts)	-	250	516	337
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There shall be minimum monthly charges of Rs. 70 per kW for first 20 kilowatt of load and Rs. 90 per kW for loads between 20-40 kW even if no energy is consumed.

B-2 From 41-500 kW (at 400 volts)	300	199	516	250
B-3* Up to 5000 kW (11 kV)	290	198	516	234
B-4* For all loads (at 66, 132 kV).	280	193	516	215
B-5* For all loads (at 220 kV and above)	273	193	516	208

TIME OF DAY (TOD) TARIFF FOR INDUSTRIAL CONSUMERS

PARTICULARS	Fixed Charges Rs/kW/Month	Energy Charges		F A S Ps/kWh	Additional Surcharge	
		Off-Peak Hours	Peak Hours		Off-Peak Hours	Peak Hours
		Ps/kWh	Ps/kWh		Ps/kWh	Ps/kWh
B-2 From 41-500 kW (at 400 volts)	300	189	267	516	234	313
B-3 Upto 5000 kW (11 kV)	290	184	266	516	191	266
B-4 For all loads (at 66, 132 kV).	280	180	256	516	177	256
B-5 For all loads (at 220 kV and above)	273	180	256	516	170	251

Note: B-2 consumers can opt for TOD Tariff

All B-3 & B-4 consumers were to be converted to TOD Tariff by 30-06-2000, after installation of electronic meters with TOD provisions. Normal Tariff (*) will be only applicable to B-3, B-4 and B-5 consumers who have not been provided with TOD meters, till such time TOD meters are provided.

The time period for measuring the maximum demand of B-2, B-3, B-4 and B-5 industrial and TOD meters has been changed from 15 minutes to 30 minutes. Change to take effect on installation of meters capable of measuring the maximum demand in 30 minutes period.

TARIFF CATEGORY/PARTICULARS	Fixed Charges	Energy Charges	F.A.S	Additional
	Rs/kW/Month	Ps/kWh	Ps/kWh	Surcharge Ps/kWh

BULK SUPPLY --- TARIFF - C

C-1 (a) 400 Volts	-	193	541	353
C-1 (b) 400 Volts	220	178	541	354
C-2 (a) 11 kV	-	179	541	333
C-2 (b) 11 kV	216	175	541	345
C3 (at 66, 132 & 220 kV) --- for all loads	214	170	541	315

Note: The time period for measuring the maximum demand of C-1, C-2, and C-3 meters has been changed from 15 minutes to 30 minutes. Change to take effect on installation of meters capable of measuring maximum demand in 30 minutes period.

AGRICULTURE --- TARIFF - D

D-1 Sindh and Balochistan	72	144	533	236
D-2 Sindh and Balochistan	176	144	533	172

Note: Consumer falling in category D shall have the option to choose between Tariff D-1 and D-2.

TEMPORARY SUPPLY --- TARIFF - E

E-1 (i) Domestic Supply	-	280	549	388
E-1 (ii) Commercial Supply	-	450	501	528

For the above two categories, the minimum bill of the consumer shall be Rs 46/- per day subject to minimum of Rs.200/- for the entire period of supply, even if no energy is consumed.

E-2 (i) Industrial supply	-	305	516	382
E-2 (ii) Bulk Supply				
(a) at 400 Volts	-	245	541	409
(b) at 11 kV	-	233	541	391
E-2 (iii) Bulk supply to other consumers	-	254	541	407

SEASONAL INDUSTRIAL SUPPLY TARIFF-F

SUPPLY CHARGES
125% of the "Supply Charges"
of relevant industrial supply
tariff

ADDITIONAL SURCHARGE
125% of the Additional
Surcharge of the relevant
industrial supply tariff

Note: Tariff-F Consumers will have the option to convert to Regular Tariff and vice versa. This option can be exercised at the time of a new connection or at the beginning of the season. Once exercised, the option will remain in force at least for one year

TARIFF CATEGORY/PARTICULARS	Fixed Charges Rs/kW/Month	Energy Charges Ps/kWh	F.A.S Ps/kWh	Additional Surcharge Ps/kWh
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PUBLIC LIGHTING TARIFF-G

G-1 Units Charges

G-2 (a) for 60 watts

(b) for 100 watts

284	520	488
Rs 594/per year per lamp		470
Rs 1,090/per year per lamp		470

Note: Consumer falling in category G shall have the option to choose between Tariff G-1 and G-2.

Fixed Line Charges Per Month Per MileRs

- (i) Where the entire capital cost in laying street lighting supply line which is exclusively meant for street lighting is borne by the Corporation.
- (ii) Where the entire capital cost in laying street lighting supply line, which is exclusively meant for street lighting is borne by the Consumer.
- (iii) Where the entire capital cost in laying street lighting supply line, over the existing distribution system is borne by the Corporation.
- (iv) Where the entire capital cost in laying street lighting supply line, over the existing distribution system is borne by the consumer.
- (v) For street lighting supply through underground cables.

280

25

175

36

Rates to be
negotiated**RESIDENTIAL COLONIES ATTACHED TO INDUSTRIAL PREMISES (TARIFF-H)**

Consumers having their own transformers

214 549 426

Consumers not having their own transformers

215 549 428

Note:

Terms and conditions of the Schedule of Tariff as notified vide SRO 819(1)/2001 dated November 29, 2001 shall continue to remain in force.

K. E. S. C. LTD.

EXISTING AND PROPOSED RATED OF SECURITY DEPOSIT

		EXISTING RATES		PROPOSED RATES					
			Load Factor	Units per kW	Rate Rs/kWh	Bill/Month Rupees	2 5 Months Rupees	Proposed Rupees	
A-1	Domestic								
	Upto 5 kW								
	Single Phase	Urban	500	15.0%	110	8.74	957	2,392	2,000
		Rural	300						1,500
	Three Phase		500	17.5%	128	8.74	1,116	2,791	6,000
	in excess of 5 kW		500	20.0%	146	10.36	1,513	3,783	3,500
	Above 20 kW		8500						/kW
	in excess of 20 kW		800					-	-
A-2	Commercial								
	Upto 5 kW								
	Single Phase	Urban	1600	15.0%	110	11.71	1,282	3,205	3,000
		Rural	900						2,500
	Three Phase		1600	17.5%	128	12.07	1,541	3,854	15,000
	in excess of 5 kW		500					3,500	/kW
B-1	400 Volts		800	33%	241	10.03	2,416	6,041	6000
B-2	400 Volts		1200	40.0%	292	10.14	2,961	7,402	7000
B-3	11 kV		1500	47.0%	343	9.38	3,219	8,049	8000
B-4	132 kV		2000	60.0%	438	8.75	3,831	9,578	9500
B-5	Rs/kW			95.0%	694	8.36	5,797	14,492	14000
C-1	Rs/kW		800	60.0%	438	10.67	4,674	11,686	10000
C-2	Rs/kW		1600	67.0%	489.1	10.37	5,071	12,677	12500
C-3	Rs/kW		2000	90.0%	657	9.81	6,445	16,113	16000
D-2	Agriculture			20%	146	8.65	1,263	3,156	3,000
G	Street Light			50.0%	365	11.92	4,351	10,877	10000