



National Electric Power Regulatory Authority

Islamic Republic of Pakistan

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No. NEPRA/R/SA(Tariff)/TRF-460/TEPL-2018/14640-14642
June 9, 2020

Subject: Decision of the Authority in the matter of Motion for Leave for Review filed by Tapal Energy (Private) Ltd. in respect of Tariff Determination dated 20th November 2019 regarding approval of Generation Tariff for Term Extension of RFO based Power Plant of 126 MW (Gross) at Karachi [Case # NEPRA/TRF-460/TEPL-2018]

Dear Sir,

Please find enclosed herewith the subject Decision of the Authority (23 Pages) in Case No. NEPRA/TRF-460/TEPL-2018.

2. The Decision is being intimated to the Federal Government for the purpose of notification in the official gazette pursuant to Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.
3. The Order of the Authority's Decision shall be notified in the official Gazette.

Enclosure: As above


29 06 20
(Syed Safeer Hussain)

Secretary
Ministry of Energy (Power Division)
'A' Block, Pak Secretariat
Islamabad

CC:

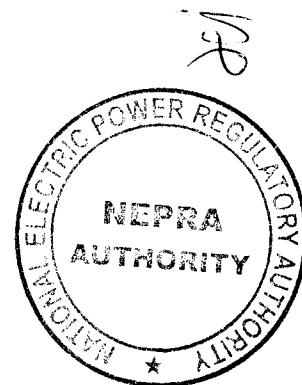
1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
2. Secretary, Ministry of Finance, 'Q' Block, Pak Secretariat, Islamabad.

DECISION OF THE AUTHORITY IN THE MATTER OF MOTION FOR LEAVE FOR REVIEW FILED BY TAPAL ENERGY (PRIVATE) LIMITED IN RESPECT OF TARIFF DETERMINATION DATED 20th NOVEMBER 2019 REGARDING APPROVAL OF GENERATION TARIFF FOR TERM EXTENTION OF RFO BASED POWER PLANT OF 126 MW (GROSS) AT KARACHI

1. BACKGROUND

- 1.1. Tapal Energy (Private) Limited (TEPL) is a company duly established and existing under the laws of Pakistan with its registered office located at 155-A, Street No. 37, Sector F-10/1, Islamabad, Pakistan. The Company was duly incorporated under the laws of Pakistan on March 1, 1995, for the purposes of undertaking the development, setting up, implementation, construction and operation of a 126 MW (Gross) thermal power generation facility located at Deh Gondpass, Tapo Gabopat, Hub River Road, Taluka & District Karachi (West), Karachi, Sindh, Pakistan (the Site) for sale of electricity to K-Electric. The power plant achieved commercial operations on 19th June 1997.
- 1.2. The Project has been running successfully for over twenty two (22) years. In compliance with its PPA obligations, approximately 740.88 GWh/annum has been supplied to KE to meet its consumer demand and maintain its system reliability.
- 1.3. Contemplating the expiry of the PPA with KE, the company filed the tariff petition on 7th December 2018 for approval of generation tariff for an additional period of five (5) years (the PPA Term Extension) w.e.f. June 20, 2019 (the Extension Commencement Date). Provisional approval in the matter was granted on 21st June 2019. Decision in the matter was issued on 20th November 2019 with term extension for a period of three (3) years w.e.f. 20th June 2019. The tariff was determined on take and pay basis with capacity charges converted to per unit basis on 92% plant factor. The summary of the approved tariff is as under:

Description	Rs./kWh
Energy Charge:	
Fuel cost component	13.3868
Variable O&M (Local)	0.6316
Sub-Total	14.0184
Capacity Charge:	
Fixed O&M (Local)	0.4274
Cost of working capital	0.2095
Insurance	0.0888



Return on Equity	0.4500
Sub-Total	1.1757
Total Tariff	15.1941
Reference Values:	
RFO Price (Rs./ton)	62,586.93
KIBOR	12.97%
CPI General June 2019	246.82

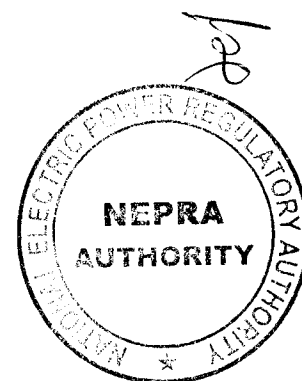
2. FILING OF REVIEW PETITION

- 2.1. Being aggrieved of the above decision of the Authority, TEPL vide its letter dated 28th November 2019 filed a motion for leave for review in the matter. The Review Motion was filed under Rule 16(6) of the NEPRA (Tariff Standards and Procedure) Rules, 1998, (the "1998 Rules"), read together with Regulation 3(2) of the NEPRA (Review Procedure) Regulations, 2009, (the "2009 Regulations"), Section 31 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, (the "NEPRA Act"), and all other enabling provisions of the relevant laws.
- 2.2. The motion for leave for review was admitted on 24th December 2019 for further processing.

3. GROUND OF REVIEW MOTION

- 3.1. TEPL sought review on following grounds:

- Tariff control period for the extended terms of the new PPA.
- Take and pay sale arrangement.
- Thermal Efficiency and fuel cost.
- O&M Cost (variable & fixed).
- Insurance Cost
- Return on Equity.
- Typo Error to replace BTU/lb. to BTU/Kg.
- Sales tax on Energy Charge.



4. HEARING

- 4.1. The Authority decided to hold a hearing in the matter on 29th January 2020. Notices of hearing were sent to stakeholders on 17th January 2020 along with request to file comments in the matter, if any.

4.2. Hearing was held as per schedule and was participated by representatives of the Petitioner, CPPA-G, PSO and KE.

5. COMMETNS

5.1. In response to the notice of hearing, comments were received from KE, PSO and CPPA-G which are reproduced hereunder:

Comments from CPPA-G

i. Following table shows the OEM indicated efficiency at ISO conditions and NEPRA's determined efficiency at mean site conditions for subject power plants:

	Efficiency (Net LHV)	Tapal Energy	Gul Ahmed Energy
Engine Type		18V38	18V46
OEM indicated Efficiency @ 100% load under ISO conditions		46.3	48.7
NEPRA Determined Efficiency @ 100% load under mean site conditions		41.34	40.73

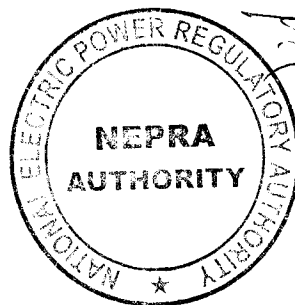
- ii. It is noted that the parameters relied upon by NEPRA while determining heat rates/efficiency as shown above have been provided by Tapal Energy and Gul Ahmed Energy like RFO consumption (in MT's), Export (kWh) and Calorific value (in Btu/kg) etc. for the last five years. Pertinent to mention that, although there is a claw back mechanism in place for sharing of the profits higher than the regulated profits, however, in view of the difference between OEM indicated efficiency at ISO conditions and Authority's determined efficiency at mean site conditions and in order to ensure transparency, the Authority may direct Tapal Energy and Gul Ahmed Energy to conduct Heat rate Test by a reputable Int'l Independent Engineer to assess the actual performance (capacity and heat rate) of aforesaid IPPs as per recognized testing codes. In case the net efficiency and net output of the complex are established higher than the approved values, downward adjustments may be made in fuel cost component and capacity charge components respectively. No adjustments may be made in tariff components in case the net efficiency and net output of the complex are established lower than the approved values.
- iii. The results of the performance test will show actual performance degradation since COD of the projects. Moreover, regarding partial loading the Authority may not allow any sort of adjustments as Engines operating in open cycle have favorable part load characteristics and the efficiency curve for diesel engines is comparatively flat between

50 and 100% load (Ref: Parsons Brinckerhoff 2009 Study). A plant with several units can turn down some units and run the remaining ones at full load, thereby eliminating part load efficiency losses. This type of operation is called the efficiency mode (Ref: Wartsila Technical Journal). Generally, the heat rate of DG unit does not vary significantly between 70% and 100%. In case, station load comes down to 70% or less, some D.G. unit(s) can be shut down maintaining higher loading of the working DG sets. (Ref: Indian Policy Document).

- iv. The O&M cost may be linked to regional benchmarks like 2.5% of capital cost as an annual O&M cost (Ref: National Electricity Plan of Central Electricity Authority, 2012).
- v. Furthermore, power procurement from Tapal Energy and Gul Ahmed Energy be based on take and pay arrangement and the plants shall be dispatched on the basis of KE's merit order without any sovereign guarantees commitment by GOP.
- vi. The Authority may direct both IPPs to include contract termination clause in their respective PPAs with mutual consent.

Comments of PSO

- i. We refer to the decision by NEPRA no. NEPRA/R/TRF-460/TEPL-2018/24804-24806 on Tariff petition of Tapal Energy dated November 20, 2019. According to the decision, PPA extension has been approved by NEPRA for a period of 3 years. In this context we draw your attention towards intervention filed by PSO vide letter dated June 17, 2019 and also in person recording intervention at the Notice of Hearing on June 18, 2019 (copy attached as Annexure - A). PSO also received letter from NEPRA no. NEPRA/R/TRF-460/12422-23 dated July 15, 2019 wherein it was mentioned that intervention request filed by PSO has been accepted.
- ii. Competent authority has passed decision on Tariff Petition of Tapal, however the decision does not address concerns of PSO. We reiterate that Power Purchase Agreement (PPA) and Fuel Supply Agreement (FSA) were part of the security package for the power plants under 1994 energy policy. According to FSA, Tapal Energy should procure all its fuel requirements from PSO exclusively. This FSA serves as an interconnection between the Implementation Agreements (GOP and IPPs) and the Power Purchase Agreements (Wapda and IPPs). In case of non-extension of FSA, PSO being national fuel supplier will incur loss on the investments made in this regard considering long term supply prospects.



- iii. It may also be noted that given the change in energy mix in the country; which includes LNG, Power Plants are running on local Furnace Oil (FO). Given the excess supply and reduced demand, FO is sold at time at a discount on notified price to IPPs. Leaving IPPs to procure FO from market without firm supply contracts, this may create transparency issues in Fuel prices. PSO being a public sector company can ensure that actual fuel prices are passed on to the IPPs. This will help in regulating the power tariff to the advantage of consumers.
- iv. We would like to state our reservation with respect to non-consideration of our intervention and the decision thereof dated November 20, 2019 and would like to record our concerns; seeking redressal in the upcoming subject hearing.

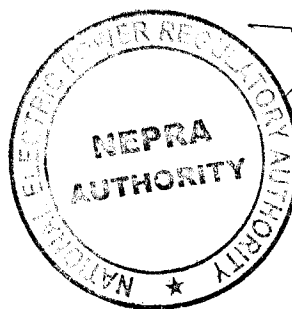
Comments of K-Electric

- i. TEL supplies 123.5 MW to KE, keeping in view the sustained power demand in KE system especially during peak summers, the supply from TEL facility is of significant importance. Hence continuity of this project is important for smooth supply of power to our consumers. It should be noted here that the Authority determined the tariff of TEL on "Take and Pay" basis and has required KE to follow the Economic Merit Order. Therefore, review motion filed by TEL may be considered by the Authority on its merits for sustainable tariff and smooth operations of the plant.
- ii. Further, with regard to Para 10.3 of NEPRA's Determination, we would like to submit that KE has exclusive right to make sales of electricity across its service territory and accordingly KE would facilitate TEL to sell power directly to bulk power consumers outside KE's service territory.

6. CONSIDERATION OF THE SUBMISSIONS OF THE PETITIONER, VIEWS OF THE STAKEHOLDERS, ANALYSIS, FINDINGS AND DECISIONS:

Tariff control period for the extended term of the new PPA:

- 6.1. The Petitioner submitted that according to the paragraph 9.6 of the tariff Determination, the term of the PPA has been extended for three (3) years or till the time the CPPA-G/NTDC are willing and capable of supplying equivalent additional power to KE, whichever comes earlier. In this regard, KE has also been directed to upgrade its system as early as possible to take additional power from CPPA-G/NTDC.
- 6.2. According to TEPL the Authority did not explain why the term of the PPA is reduced to three (3) years against the request of five (5) years. The five (5) year period is required by

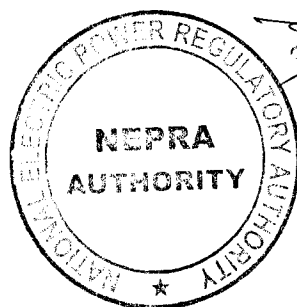


both the petitioner and KE based on ground realities of KE and CPPA-G / NTDC transmission and distribution systems.

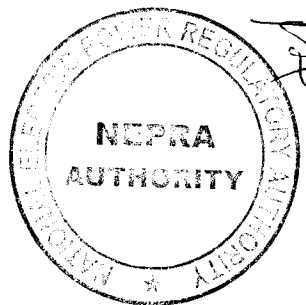
- 6.3. If the Company is to consider the reduced term, a mere statement by the Authority that a reasonable time will be given to the petitioner in case of early termination of the new PPA, creates uncertainty in the decision by the Authority. This will become a point of dispute. Notably, this is contrary to the fundamental guidelines for determining tariffs as provided under Section 31(3)(j) of the NEPRA Act, which states, inter alia, that the tariffs should be comprehensible and free of misinterpretation.
- 6.4. Prior to any early termination of the new PPA, consideration must be given to the cycle of imported parts with consideration to the lead time needed for placing of orders. Further, prior to termination taking effect, the Company will need to utilize the fuel and spares inventory in an efficient, safe and cost effective operation, systematically unwind the arrangements and resources i. e., give reasonable notice of termination to the staff members engaged to operate the plant and finally to safely shut down the plant. Where the Company opts to continue operations with an alternate buyer, it will require time to finalize arrangements with bulk power consumers ("BPCs") and to execute wheeling arrangements with KE. Keeping this in view, the Authority should direct that the new PPA cannot be terminated without KE giving the Company at least twelve (12) months prior written notice of termination.
- 6.5. The submissions of the Petitioner have been evaluated. The determination of the Authority is very clear that if cheaper electricity is available in the national grid and can be transmitted to KE, then there is no reason to buy costlier electricity from the subject power plant. Since the current interconnection arrangements between KE and national grid do not permit immediate dispersal of power and that it would take 2 to 3 years, therefore, the three years PPA term was decided. So far as the earlier termination of the contract, it is a standard clause of the PPA. The reasonable notice period shall be decided between the parties keeping in view the requirement of 15 days fuel inventory and all other considerations and shall be made part of the PPA. The request of the Petitioner for 12 months' notice period is not justified and has not been accepted.

Take and pay sale arrangement

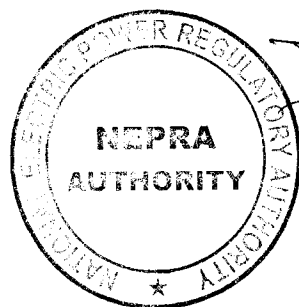
- 6.6. The Petitioner submitted that under paragraph 10.3 of the Tariff determination, the Authority has allowed KE procurement of power from the Company under a 'take and pay' arrangement in reliance on the following:



- i. Case of FFBL Power Company Limited (FFBL) supplying electricity generated by its coal power plant to KE under a tariff worked out on 'take and pay basis'
 - ii. Comments of the Ministry of Planning, Development & Reform (Energy Wing) (MoPDR) sharing consensus with the Authority that the PPA should be on take and pay basis with no capacity charges;
 - iii. Comments of CPPA-G wherein, inter alia, CPPA-G also suggested to allow procurement of power from the Company to take and pay basis and that such power shall be dispatched on the basis of KE's merit order without any sovereign guarantee by the GOP;
 - iv. The Company's willingness to accept the take and pay sale arrangement, as demonstrated in the Company's letter dated October 2, 2019 on the basis that, inter alia, KE gives minimum dispatch guarantee and the tariff is revised by the Authority on the basis of the guaranteed dispatch level by KE;
 - v. Take and pay will give the company flexibility to sell its energy to BPCs in addition to KE and that will in return help introduce competition in the market.
- 6.7. The Petitioner has objected the reference case of FFBL being a captive power plant primarily supplying power to Fauji Fertilizer Bin Qasim Limited. Surplus power is being provided to KE. According to the Petitioner, FPCL's fixed costs are met through power supply to its holding company and none of these facts are applicable to the Petitioner which is an IPP. The Petitioner further submitted that unlike FFBL, the company can only sell to KE due to exclusivity clause in the generation license of KE.
- 6.8. According to the Petitioner, notwithstanding the above, it is important for the Authority to understand the following reasons for the company to submit a 'take or pay' tariff petition.
- i. The Petitioner is obligated to remain available to KE, failure of which, the KE shall impose damages. In reciprocation, KE pays for the fixed cost irrespective of actual dispatch.
 - ii. The Petitioner has a legitimate expectation that the existing terms and conditions shall remain applicable while determining tariff for the extended period [PLD 2007 Lahore 61]
 - iii. The sale of power by FFBL to its group entity, integrated with the generation unit, do not conflict with the licensing conditions of KE.
 - iv. The Petitioner offered 92% availability under take or pay arrangement so that the best maintenance practices can enable the company to offer such a high level of availability.



- 6.9. According to the Petitioner, MoPDR desired the extended PPA on take and Pay basis without providing any explanation. The Petitioner further submitted that it is trite law that any governmental decision must be based on clear reasoning and not just on popular public sentiment. The Petitioner referred Clause 24-A of the General Clauses Act 1897, PLD 1970 Supreme Court and PLD 2018 Sindh High Court 724. The Authority has placed reliance on the communication of MoPDR without any clear reasoning and application to the facts of the case at hand, which is not only unjust to the company but is also in violation of the aforesaid well established statutory and legal principles for government bodies. The Petitioner submitted similar reservations to the comments of CPPA-G. In addition to that, the Petitioner submitted that the comments of CPPA-G cannot be taken into consideration as it is not the buyer in the instant case.
- 6.10. According to the Petitioner, its acceptance of take and pay tariff was based on guaranteed minimum dispatch by KEI which is ignored by the Authority. The Petitioner reiterated its commitment and requested to revise the tariff on the basis of guaranteed dispatch level by KEI. The Petitioner further submitted that the assumption for sale to bulk power is not correct. The Petitioner listed following obstacles in this regard:
- i. KEI has the exclusive right to sell electric power till July 2023 in its service territory.
 - ii. Neither There is any single buyer in the close vicinity who can purchase 123.5 MW and nor there is any transmission network which allow wheeling of bulk power of this capacity.
 - iii. Consequently, the company would have to find multiple BPCs willing to buy power which is an impossible task.
 - iv. The tariff determination do not offer explanation of how the company can adjust its supply between KEI and BPCs during load variation which occurs throughout a daily cycle of 24 hours. The company will be unable to guarantee availability.
 - v. The existing transmission/distribution system of KEI does not have the ability to offer guaranteed wheeling of power from the generation facility.
 - vi. KEI, as a transmission service provider, should not be a demand participant.
 - vii. Be, that it may, the decision of the Authority is delayed almost by one year requiring the company to wheel unutilized availability to BPCs, assumes a retrospective application from 20th June 2019 when the company is in its 5th month of operations of the extended term.



viii. All these activities are not achievable unless there is an actual market to cater for such operations.

ix. In case of captive power plants, only the surplus power is sold and cost is shared between two buyers whereas the company provides guaranteed availability to KE.

6.11. The Petitioner during the hearing informed that KE has declined in writing to TEL to provide open access to their network for wheeling in their service territory. Further, the Petitioner also submitted that the dispatch factor applied to the tariff should be reflective of the ground reality and the average dispatch over the last five years is 60%. The Petitioner has also calculated the difference in tariff due to dispatch factor of 92% and 60% which is Rs. 0.6270/kWh

6.12. The Petitioner's submissions have been evaluated. The Authority decided to fix the tariff on 92% allowing TEPL to sell surplus power to BPCs in the neighbouring areas. Since KE is not willing to allow TEPL to sell surplus power to any of the BPC in its territory, the sale to BPC by TEL is not likely to take place in the extended term of the PPA, out of which 11 months have already expired and approximately 2.08 years are left. Therefore, in case the plant is not dispatched up to 92%, there will be a revenue shortfall in the capacity purchase price which may be substantial and will be detrimental for the operation of the power plant. However the actual dispatch factor over the five years (FY 2014 to FY 2018) is around 71% instead of 60% submitted by the Petitioner. The details of units exported to KE as provided by the Petitioner and counter verified by the Financial Statements is as under:

Particulars	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Average
Export (GWh)	798.06	806.84	732.57	743.20	752.38	766.61

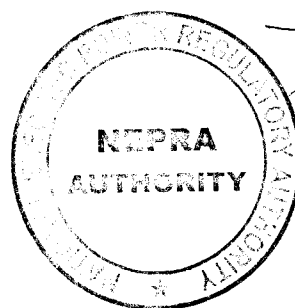
6.13. The Authority has reconsidered the request of the Petitioner that the dispatch factor applied to the tariff should be reflective of the ground reality and accordingly decided to fix the tariff on average dispatch factor of 71% instead of availability factor of 92% with the condition that in case of plant operation in excess of 71% in a year, the power purchaser shall make payment on the basis of energy charge only i.e. fuel and variable O&M. None of the components of the capacity charge shall be paid for units delivered in excess of 71% plant/dispatch factor.

6.14. Regarding KE claims of exclusivity, it is clarified that the law does not contemplate an inviolable, unconditional, unfettered or inalienable right held by distribution licensees in the form of "exclusivity". This is evident from Section 22 of the Act (a non-obstante to Section 21) (pre-amendment) which provides that another generation or distribution company can

sell power in an 'exclusive' distribution service territory. NEPRA has established an entire regime to implement this statutory provision through rule 7 of NEPRA Licensing (Distribution) Rules, 1999, under which generation companies can obtain a Second Tier Supply Authorization from NEPRA allowing them to sell power to bulk power consumers in an 'exclusive' territory. Therefore, the interpretation of distribution 'exclusivity' as being an unconditional and inalienable right under law is misconceived, since the same law also provides frameworks for abridging 'exclusivity'. After the notification of Regulation of Generation, Transmission and Distribution of Electric Power (Amendment) Act, 2018, the word "exclusivity" and period of "15 years" were omitted. The intention of legislature pre and post amendment was always to liberate the market. Therefore, the stance of KE cannot be considered as valid.

Thermal Efficiency and fuel cost

- 6.15. The Petitioner submitted that as per paragraph 11.3 of the Tariff Determination, the Authority's analysis revealed that the Company's actual efficiency during the last five (5) years remained 41.3448% (which includes part load adjustment, degradation due to aging and temperature) and therefore, the Authority has adopted the same in the Tariff Determination for the extended term of the PPA. Furthermore, as per paragraph 11.4 of the Tariff Determination, on the basis of RFO price of PKR 62,586.93/Hon including transportation, net LHV heat rate of 8,252.91 Btu/kWh and LHV calorific value of 38,584.49 Btu/Kg., the Authority has assessed the reference fuel cost Component as PKR 13.3868/kWh.
- 6.16. According to the Petitioner, the Authority has determined thermal efficiency on a historic five-year average, which will not account for the actual efficiencies expected in future due to expected excessive load variations during the extended PPA term. This will result in a mismatch of actual efficiency levels and those determined. The Authority also needs to clarify on the technical justification of taking the average of the last five (5) years. The Company had presented to the Authority in its Tariff Petition a detailed technical justification of why the efficiency of the Generation Facility should not be more than 40.04%,
- 6.17. The Petitioner further submitted that the Authority has not made an accurate assessment of efficiency values. Heat rate as determined by the Authority is not reflective of actual conditions and is the result of an estimation. In adopting these estimates, the Company is penalized by the Authority for not using an operations and maintenance practices endeavored to maximize efficiency.



- 6.18. In view of above the Petitioner has requested the Authority to allow the efficiency of 40.04% which is supported by the technical justification and the copy of the O&M contract dated 2nd April 1998 signed with a multinational company has already been submitted by the Company to the Authority.
- 6.19. According to the Petitioner, the Authority has not taken into account permanent degradation due to aging, operational degradation over service period of the operation and partial load operations. The same has been allowed in the tariff of various IPPs. According to the Petitioner, the Authority has determined the LHV heat rate of 8252.91 Btu/kWh which is equivalent to net efficiency of 41.3448%. However, net efficiency as per EPC Contract which was a subsidiary of the OEM was 41.11% at reference site conditions and at 100% load factor for a warranty period of two (2) years. Under the O&M Contract period guaranteed target efficiency was 40.698% to 41.11% with a bonus incentive plant considering degradation factor of 1%. The benchmark set by Wartsila for gas engine-based plants is 1% (for life cycle of the plant) degradation/deterioration in heat rate due to aging resulting in degradation factor of 1.01. The Authority has acknowledged this factor and has allowed degradation factor of 1.0175 to KE for its KGTPS & SGTPS plants.
- 6.20. The Petitioner submitted that heat rate varies with different load factors at which the plant operates. The plant is operated on partial load or standby mode manage the varying demand and system reliability; therefore, it is operated at an average load of 68% in the last five (5) years which further reduced to 60% in last year. The Company apprehends that plant load may further reduce & number of starts/stops will increase due to take & pay arrangement as determined by the Authority. Since the curve for degradation in plant efficiency due to part-load operation is not available, 1.01 is assumed on the principle of best judgement and according to the company experience.
- 6.21. The Petitioner also highlighted that calorific value of fuel has major impact on the efficiency and since both the expiring PPA and the expiring FSA did not require the recording of the calorific value of delivered fuel, the Company has not maintained such records and, therefore, the data provided to the Authority was an estimated number which fact was highlighted to the Authority in our correspondence. Due to this fact calculating the heat rate / efficiency based on estimated values does not result in an accurate assessment of real efficiency values.
- 6.22. Also note that in the PPA the guaranteed efficiency was locked at 40.04% considering degradation due to aging and part load operations. In the most recent tariff determination by the Authority for a simple cycle plant, the Authority has allowed the efficiency of 40.7332%



to a larger upgraded & succeeding model having clocked fewer running hours than the Company. In the light of above, the Authority is requested to allow the heat rate as proposed below:

Heat Rate as per EPC (Btu/kWh)	Degradation factor due to aging	Part load adjustment factor	Proposed Heat Rate (Btu/kWh)
8300	1.0175	1.01	8528

6.23. The submissions of the Petitioner have been reviewed in detail. It would be pertinent to reiterate that the approved efficiency of the power plant was assessed on the basis of information submitted by the Petitioner for actual plant operation during the last five years. The fuel consumed in the last five years catered for variation in load, recoverable degradation due to aging and other factors, which have impact on fuel consumption. The contention of the Petitioner lacks rationale and justification and is liable to be rejected. It would not be out of place to mention that Gul Ahmed's efficiency, a similar power plant, has also been determined in the like manner and Gul Ahmed did not file review on the assessed efficiency. Accordingly, the Authority has decided to maintain its earlier decision in the matter.

6.24. The Authority has also considered the comments submitted by PSO. In the opinion of the Authority, the submissions made by the commentator are not maintainable. However, in case the Petitioner procure fuel on discount, the same shall be passed on to the consumers and fuel cost component shall be adjusted on actual discounted price.

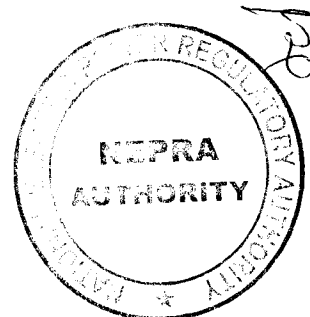
Operations and Maintenance (O&M) cost (variable and fixed)

6.25. The Petitioner submitted that as per paragraph 12.5 of the tariff determination, the Authority has decided a variable O&M cost of PKR 0.6316/kWh for extended term of the PPA. Further, as per paragraph 12.7 of the determination, the Authority has approved fixed O&M cost of PKR 441 million which translates into PKR 0.4273/kWh.

6.26. The Authority has determined O&M costs on a five-year average, which does not account for the actual maintenance expected during the extended PPA term. This will result in a mismatch of actual O&M costs and those determined. In addition, the Authority has omitted to distinguish the foreign component of O&M costs from the local component, which covers imported spares. These are actual costs that will be incurred by the Company in USD for necessary plant operations and maintenance. If expenditure in USD is not accounted for in

the O&M costs, the plant cannot be maintained, will become unsafe and will not be available for dispatch.

- 6.27. According to the Petitioner, together with inclusion of the foreign component of the O&M costs and consistent with relevant tariffs in the power sector, indexations will also apply to the foreign component of the O&M costs to account for changes in USD consumers price index (CPI) and exchange rate, failing which the Company will end up short of recovering its foreign currency based costs. This again is contrary to the legislative guidelines and principles for determining tariffs under the NEPRA Act. We reiterate that pursuant to Section 31(3)(c) of the NEPRA Act, tariffs should allow licensees a rate of return which promotes continued reasonable investment in equipment and facilities for improved efficiency. We further reiterate that in terms of Section 31(2)(b) of the NEPRA Act, tariffs should be determined keeping in view the research, development and capital investment program costs of licensees.
- 6.28. As stated above, the Variable O&M allowed by the Authority is a simple average of Variable O&M cost of the last five (5) years taken from the Company's financial statement while completely ignoring the following parameters which have a direct bearing on the O&M costs:
- i. The operating conditions where load variation is experienced prematurely age the plants and the major spares end up aging quicker due to fatigue. The consumption of spares also varies from year to year depending on the original equipment manufacturer (OEM) recommended maintenance cycle, therefore, a simple average ignoring the type and number of overhauls carried out in each of the previous years is not correct and fails to justify the concept of cost plus tariff to be applied for a future period.
 - ii. The average exchange rate of the previous five (5) years is PKR 111.3/USD whereas, the prevailing exchange rate of June 2019 was PKR 157.3/USD. The Authority has erred in using the average cost of last five years in PKR terms as the current exchange rate is 41% higher than last five (5) years average and will result in procurement of parts for the future to be much more expensive in PKR terms over its historical rupee denominated costs.
 - iii. It is also unfair and inconsistent to use average PKR value of the last five (5) years to determine the future USD based cost of imported parts of the Company, since the Authority's own past practice stated in determinations of all types of plants is otherwise, and the Authority fails to justify the concept of cost plus tariff allowed for



the future. Again, the Authority has acted contrary to the legislative principles and guidelines in its Tariff Determination. The Authority has not offered any explanation for deviating from established practice and why the Company should be treated in a discriminatory manner, which again is contrary to the legislative guidelines and principles applicable on the Authority.

- iv. Price variation of spares in the international market which have a compounding effect due to local duties and taxes have also been ignored by the Authority.
- v. The lube and chemical prices locally move with variation in crude prices and the exchange rates which were considerably lower in last five years as compared to the current prevailing rates, therefore, it is highly unlikely that the Company will recover its cost for lube oil and chemicals used in operation of Generation Facility.
- vi. None of the major spares used in the Generation Facility are locally manufactured therefore are subject to variation in exchange rate and international CPI which has always been allowed to IPPs and was also allowed to FFBL. The Authority has not offered any explanation for deviating from established practice and why the Company should be treated in the discriminatory manner.
- vii. The Generation Facility is twenty two (22) years old and all engines have run more than 128,000 hours to 151,000 hours approximately. Consequently, the Company requires a greater number of spare parts for maintenance. This request is in line with the guidelines for determining tariffs under Section 31 of the NEPRA Act, which clearly state that tariff should encourage quality of service, maintenance, operation and efficiency.
- viii. Oil and lubricants number for the Year 2016-17 and 2017-18 which have not correctly been taken by the Authority in its calculation, are explained by way of the following table:

Oil and lubricants	Numbers taken by Authority	Actual numbers
2016-17	144,447	145,315
2017-18	143,224	143,758

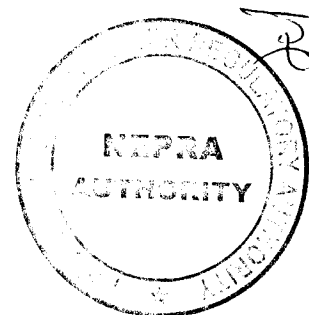
- ix. The Authority has allowed Variable O&M based on average variable O&M cost incurred during last five (5) years in PKR terms. Even if this concept is assumed to have any logic, the Variable O&M consumed each year should have been converted in the manner as shown in following table to reflect the correct cost of previous years translated to a more justified cost to be compared on its present values:

Description	2014-15	2015-16	2016-17	2017-18	2018-19	Average
Variable O&M Local:	Rs. in '000					
Oil and Lubricants	172,213	137,757	145,315	143,758	123,311	144,471
Units Exported (GWh)	806.838	732.572	743.204	752.384	645.016	736.003
Variable O&M local (Rs/kWh)	0.2134	0.1880	0.1944	0.1904	0.1912	0.1963
Variable O&M Foreign:						
Stores, Spares and loose tools	265,035	207,302	187,156	196,222	179,006	206,944
Provision for obsolescence of spares	27,744	25,834	25,644	26,618	37,762	28,720
Capital spares	114,795	105,165	105,282	56,461	43,255	84,992
Total	407,574	338,301	318,082	279,301	260,023	320,656
Average Exchange Rate for the year	101.46	104.52	104.86	109.92	135.73	
Equivalent USD '000	4,017	3,237	3,033	2,541	1,916	2,949
Unit Exported (GWh)	806,838	732.572	743.204	752.384	645.016	736.003
Exchange Rate as on June 19, 2019						157.30
Avg. Variable O&M Foreign (Rs./kWh)						0.6302
Total of Variable (Local & foreign)						0.8265

- x. It has to be highlighted that the reason for the application of a cost-plus tariff by the Company was that historical costs are not reflective of the future costs which need to be indexed to the factors allowed by the Authority to all other IPPs.

6.29. The submissions of the Petitioner have been evaluated. It would be pertinent to mention that the latest available variable O&M for FY 2019 were Rs. 0.5943/kWh against which the Petitioner was allowed average variable O&M over the last five years of Rs. 0.6316/kWh which are higher by approximately 4 Paisa/kWh and caters for cyclical nature of the expense. The approved variable O&M cost is also subject to local CPI. The Petitioner however requested indexation on account of foreign exchange variation and US CPI on the variable O&M component excluding lubricants and oil which are subject to local CPI. In case of 6 RFO based IPPs established under 2002 Power Policy, similar indexations were provided as requested by the Petitioner, however, the long term impact of both local CPI and foreign exchange & US CPI combined are close. For example an analysis of indexation of local and foreign O&M from 2007 to 2020 shows following:

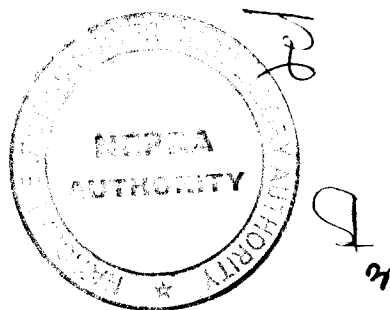
Particulars	Increase Times
O&M Foreign	3.23
O&M Local	2.99



- 6.30. Keeping in view the above analysis, the Authority has decided to maintain its earlier decision of allowing indexation to fixed and variable O&M components on the basis of CPI (General) published by Pakistan Bureau of Statistics.
- 6.31. Regarding the difference in the cost of Oil and Lubricants for FY 2016-17 and FY 2017-18 highlighted by the Petitioner and para viii above, it would be pertinent to mention that the financial statements of the respective years indicate the same figures which have been used by the Authority while assessing the cost of Oil & Lubricants i.e. Rs. 144,447,000 and 143,224,000 respectively as against Rs. 145,315,000 and Rs. 143,758,000 indicated by the Petitioner for the two financial years. Upon an enquiry, the Petitioner explained that the difference is due to the cost of HSD consumption which is included in the cost of fuel in the financial statements and actually pertains to maintenance and needs to be included in the variable O&M. The Petitioner's stance seems justified and the Authority has decided to accept the same. The revised approved variable O&M cost after inclusion of HSD cost will be Rs. 0.6320/kWh which shall be subject to local CPI indexation.

Insurance

- 6.32. According to the Petitioner, the Authority in the Tariff Determination granted the actual insurance cost for the minimum cover required under contractual obligations with Power Purchaser and shall be treated as pass through. The insurance cost component shall be adjusted annually on the basis of actual insurance premium subject to maximum of USD 800,000/- at prevailing exchange rate of PKR/USD of the first day of each year of the extended term of the PPA.
- 6.33. According to the Petitioner, the basic assumption disregarded by the Authority in allowing the insurance, is not accepting the take or pay basis of tariff, which leads to short recovery of Insurance cost that are incurred by the Company. Since Authority has allowed actual insurance premium as pass through, therefore, the Authority should allow the Company to invoice KE, being pass through as determined by the Authority, for the balance insurance amount in case of any shortfall in recovery through take and pay tariff.
- 6.34. The foregoing submissions are without prejudice to the Company's stance that by not accepting take or pay the fixed cost components are not recovered, leading to short recovery of costs, which cannot be acceptable to any investor and is contrary to the legislative guidelines under Section 31(3) of the NEPRA Act namely, inter alia, that tariffs should allow licensees a rate of return which promotes continued reasonable investment in equipment and facilitates for improved and efficient service and further that, tariffs should include a

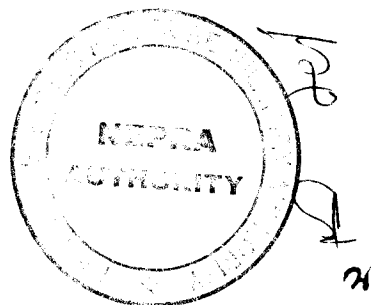


mechanism to allow licensees a benefit from the efficiencies in the cost of providing the service and the quality of service.

- 6.35. The submissions of the Petitioner have been analysed. In a take and pay nature of agreement, the recovery is made against the units delivered to the power purchaser. The actual insurance cost shall be recovered only through the delivered units to the power purchaser. There will be no separate mechanism for recovery of any shortfall in the insurance cost in line with other components of capacity charge.

Return on Equity (ROE)

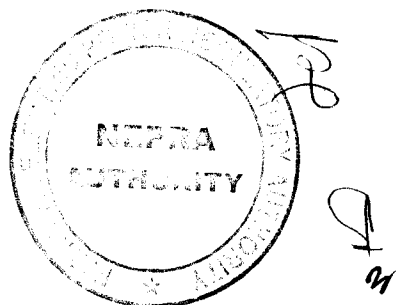
- 6.36. The Petitioner submitted that according to paragraph 15.3 of the Tariff Determination, annual ROE of PKR 447.84 million resulting in ROE component of PKR 0.4500/kWh has been approved by the Authority on the basis of ROE of 12% for the extended term of the PPA and no indexation shall be applicable on the ROE component of the reference tariff in the Tariff Determination. As per paragraph 15.4 of the Tariff Determination, the Authority has further decided to incorporate a claw back mechanism in case the regulated return increased over 12% due to saving in other tariff components.
- 6.37. Without explanation, the Authority has locked ROE at 12% at the exchange rate applicable on USD denominated equity of 33.774 million, resulting in the annual ROE equalling PKR 447.84 million using the exchange rate at PKR 110.50/USD, however, the Authority quotes that the parity is as stated by the Company in the Tariff Petition which on the other hand clearly mentions the rate that of January 2018, and the Authority further ignores Company's request for an exchange rate indexation, consistent with market norms and the legislative guidelines applicable upon the Authority in the determination of tariffs under the NEPRA Act. The Company emphasizes that the locked exchange rate of PKR 110.50 used by the Authority was the rate prevailing in January 2018 and was used for the calculation of a USD denominated equity which has never been redeemed
- 6.38. According to the Petitioner, it is noted that the Authority itself has used the reference factors for CPI, KIBOR Rate and Fuel Price based on the rates prevailing in June 2019. The justified and fair approach would be that the Authority should have taken the conversion rate PKR/USD 157.30 as was prevailing on the reference date of June 19, 2019, in addition to allowing indexation for ROE component to USD rates as is consistent with the precedence set by the Authority in all previous tariffs. In all fairness, the calculation of ROE component on the reference date should have been as follows: USD based equity of 33.774 million converted at PKR/USD parity of 157.30 comes to PKR 5,312.650 million and the annual ROE at 12% allowed by the Authority should be PKR 637,518 million per annum.



- 6.39. As a further deviation from established market norms, the Authority has introduced a claw-back mechanism without giving the Company an opportunity of being heard and meaningfully participating in the tariff approval process contrary to the legislative guidelines provided in inter alia, the NEPRA Act. Again, this change has occurred without any explanation and without giving the Company the right to respond or to be heard. It is pertinent to mention that the sponsors have already offered 20% reduction in ROE (from 15% to 12%). The Authority also allows ROEDC to new projects, whereas, no such component exists in the Tariff Petition since the Project has already been constructed. These gestures result in significant savings already passed on to the consumers. Once again, we bring to the Authority's attention that this deviation from market norms and discriminatory treatment of the Company and failure to adequately protect the interests of the Company under the Tariff Determination and that too, without explanation in a majority of places, is stark violation of the legislative guidelines for determining tariffs under the NEPRA Act.
- 6.40. TEPL reiterates that a 12% ROE is acceptable provided there is minimum dispatch guarantee of 60% and the tariff is revised by the Authority on the basis of the guaranteed dispatch level by KE. quarterly indexation is applied to account for variation in the exchange rate and the claw-back mechanism is removed. In terms of Section 31(2) and Section 31(3) of the NEPRA Act, tariffs should be determined, inter alia, to encourage efficiency in licensees. Operations and quality of service, to account for the development and capital investment program costs of licensees, to allow licensees a rate of return which promotes continued reasonable investment in equipment and facilities for improved efficiency and etc. Through the introduction of the claw-back arrangement, the Authority is acting contrary to legislative guidelines.
- 6.41. The submissions of the Petitioner have been reviewed. The Petitioner has requested for indexation of ROE component for Rs./US\$ parity and removal of claw back mechanism. The Petitioner has also submitted that instead of calculating the reference ROE component on exchange rate of Rs. 110.50/US\$, the rate of Rs. 157.3/US\$ applicable on the date of 19th June 2019 should be taken. All of these factors have been taken into consideration while determining ROE component. The Authority has decided to maintain its earlier decision in the matter.

Sales tax on Energy Charge

- 6.42. According to the Petitioner, the tariff Determination is silent about sales tax on Energy Charge as pass through item and to be recovered from the power purchaser. It is the industry norm and also allowed to all power generation projects and was also allowed to the Company under previous PPA.



6.43. Sales tax is a value added tax and is dealt with in accordance with the provisions of Sales Tax Act. In accordance with the provisions of the Sales Tax Act, sales tax at the prescribed rates shall be added to the energy invoices which shall be paid by the power purchaser to the power producer. The power purchaser (KE) shall recover the sales tax from end consumers on the electricity bills.

Other Issue

6.44. The Petitioner highlighted to the Authority an error found in paragraph 20(iv) of the tariff determination wherein the $CV_{(Ref)}$ is defined in the Fuel Price Adjustment formula as "38,584.49 BTU/lb." instead of "38,584.49 BTU/Kg".

6.45. The contention of the Petitioner is correct and necessary correction has been made in the Order part of the instant decision.

7. Summary of the approved Tariff

7.1. The summary of the approved tariff is provided hereunder:

Description	Rs./kWh
Energy Charge:	
Fuel cost component	13.3868
Variable O&M	0.6320
Sub-Total	14.0188
Capacity Charge:	
Fixed O&M	0.5538
Cost of working capital	0.2714
Insurance	0.1151
Return on Equity	0.5830
Sub-Total	1.5233
Total Tariff	15.5421
Reference Values:	
RFO Price (Rs./ton)	62,586.93
KIBOR	12.97%
CPI General June 2019	246.82
Plant/Dispatch Factor	71%



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8. Order

- I. The Authority hereby determines and approves the following generation tariff for Tapal Energy (Private) Limited for its RFO based power plant of 123.5 MW net along with adjustments/indexations for delivery of electricity to the power purchaser on take and pay basis:

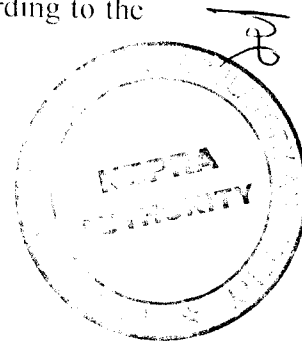
Description	Rs./kWh	Indexation
Energy Charge:		
Fuel cost component	13.3868	Fuel Price
Variable O&M	0.6320	CPI (General)
Sub-Total	14.0188	
Capacity Charge:		
Fixed O&M	0.5538	CPI (General)
Cost of working capital	0.2714	KIBOR and Fuel Price
Insurance	0.1151	Actual subject to maximum limit
Return on Equity	0.5830	Nil
Sub-Total	1.5233	
Total Tariff	15.5421	
Reference Values:		
RFO Price (Rs./ton)	62,586.93	
KIBOR	12.97%	
CPI General June 2019	246.82	
Plant/Dispatch Factor	71%	

II. Adjustments/Indexations

The following adjustments/ indexations shall be applicable to the reference tariff;

i) **Adjustment in Insurance as per actual**

The actual insurance cost for the minimum cover required under contractual obligations with the Power Purchaser shall be treated as pass-through. Insurance component of reference tariff shall be adjusted annually as per actual upon production of authentic documentary evidence according to the following formula:



AIC	$Ins_{(Ref)} / P_{(Ref)} * P_{(Act)}$
Where	
AIC	Adjusted Insurance Component of Tariff
$Ins_{(Ref)}$	Reference Insurance Component of Tariff
$P_{(Ref)}$	Reference Premium Rs. 88.40 million
$P_{(Act)}$	Actual Premium or US\$ 800,000 at exchange rate prevailing on the 1st day of the insurance coverage period whichever is lower

ii) Indexation applicable to O&M

O&M components of tariff shall be adjusted on account of local Inflation (CPI) quarterly on 1st July, 1st October, 1st January and 1st April based on the average CPI for the preceding quarter as per the following mechanism:

$V. O\&M_{(REV)}$	$V. O\&M_{(REF)} * CPI_{(REV)} / CPI_{(REF)}$
$F. O\&M_{(REV)}$	$F. O\&M_{(REF)} * CPI_{(REV)} / CPI_{(REF)}$
Where:	
$V. O\&M_{(REV)}$	The revised Variable O&M Component of Tariff
$F. O\&M_{(REV)}$	The revised Fixed O&M Component of Tariff
$V. O\&M_{(REF)}$	The reference Variable O&M Component of Tariff
$F. O\&M_{(REF)}$	The reference Fixed O&M Component of Tariff
$CPI_{(REV)}$	The average revised CPI (General) for the preceding Quarter
$CPI_{(REF)}$	The reference CPI (General) of 246.82 for June 219

iii) Cost of Working Capital

Cost of working capital shall be adjusted quarterly for variation in KIBOR and fuel price as per the following mechanism:

$COWC_{(REV)}$	$COWC_{(Ref)} * P_{(Rev)} / P_{(Ref)} * I_{(Rev)} / I_{(Ref)}$
Where:	
$COWC_{(REV)}$	Revised cost of working capital component.
$COWC_{(Ref)}$	Reference cost of working capital component.
$P_{(Rev)}$	Revised Ex-GST delivered RFO price per ton.
$P_{(Ref)}$	Reference Ex-GST delivered RFO price of Rs. 62,586.93/ton.
$I_{(Ref)}$	Reference interest rate of 12.97% KIBOR plus 2% premium.
$I_{(Rev)}$	Revised interest rate of KIBOR plus 2% premium.



iv) Fuel Price Adjustment

The fuel cost component of tariff shall be adjusted on account of fuel price variation as per the following mechanism:

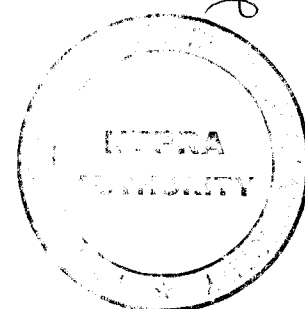
$FCC_{(Rev)}$	$FCC_{(Ref)} \times P_{(Rev)} / P_{(Ref)} \times CV_{(Ref)} / CV_{(Rev)}$
Where:	
$FCC_{(Rev)}$	Revised Fuel cost component.
$FCC_{(Ref)}$	Reference Fuel cost component.
$P_{(Rev)}$	Revised Ex-GST delivered RFO price per ton.
$P_{(Ref)}$	Reference Ex-GST delivered RFO price of Rs. 62,586.93/ton.
$CV_{(Ref)}$	Reference LHV calorific value of 38,584.49 BTUs/Kg.
$CV_{(Rev)}$	Revised LHV actual calorific value subject to minimum of 17,333 BTUs/lb.

III. Terms & Conditions

The following terms and conditions shall apply to the determined tariff:

- The approved tariff shall be applicable w.e.f. 20th June 2019 for a term of three years or till the time CPPA-G/NTDC are willing and capable of supplying equivalent additional power to KE, whichever comes earlier.
- The early termination of the power purchase agreement during the extended term of the PPA shall be subject to reasonable notice period which shall be incorporated in the PPA.
- Dispatch shall be in accordance with the merit order as defined in the grid code.
- In case of plant operation in excess of 71% in a year, the power purchaser shall make payment for the excess units on the basis of energy charge only i.e. fuel and variable O&M. None of the components of the capacity charge shall be paid for units delivered in excess of 71% plant/dispatch factor in a year.
- In case the Petitioner procure fuel on discount, the same shall be passed on to the consumers and fuel cost component shall be adjusted on actual discounted price.
- No bonus payments shall be allowed over and above the approved tariff.
- WWF and WPPF shall be pass-through items.
- Taxes on income, if any, shall be pass-through.
- In case the regulated return increases over 12% due to saving in other tariff components, the gain shall be shared as per the following mechanism:

Percentage of ROE	Sharing	
	IPP	Consumers
Upto 12% of Reference Equity	100%	-
> 12% but < 15% of Reference Equity	50%	50%
> 15% of Reference Equity	25%	75%



- x. All adjustments/indexations i.e. fuel price, CPI, KIBOR and insurance shall be done by KE in accordance with the stipulated mechanism.

IV Notification

The above Order of the Authority shall be notified in the Official Gazette in terms of Section 31(7) of the Regulations of Generation, Transmission and Distribution of Electric Power Act, 1997.

AUTHORITY



Saif Ullah Chattha
Member 12.5.2020



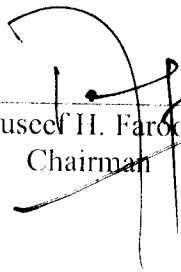
Rehmatullah Baloch
Member



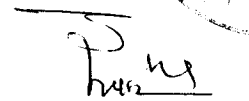
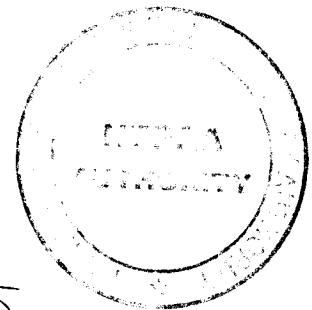
Rafique Ahmed Shaikh
Member

— NOT ATTENDED —

Engr. Bahadur Shah
Member



Tauseef H. Farooqi
Chairman



09.06.20