PETITION FOR REVISED GENERATION TARIFF

For 3 years-controlled period From FY 2019-20 to FY 2021-22

Submitted to:

National Electric Power Regulatory Authority (NEPRA)

Submitted by:

NORTHERN POWER GENERATION COMPANY LIMITED (NPGCL/GENCO-III)

Financial Advisor

Technical Advisor





Glossary

BTU	British Thermal Unit
CDC	Current Dependable Capacity
Cft	Cubic Feet
COD	Commercial Operation Date
Company	Northern Power Generation Company Limited
СРРА	Central Power Purchase Agency
CPI	Consumer Price Index
СРР	Capacity Purchase Price
CV	Calorific Value
CW	Cooling Water
EPP	Energy Purchase Price
FCC	Fuel Cost Component
FSA	Fuel Supply Agreement
GOP	Government of Pakistan
HHV	Higher Heating Value
HR	Heat Rate
HSD	High Speed Diesel
IPP	Independent Power Producer
Kw	Kilowatt
kWh	Kilowatt hour
LHV	Lower Heating Value
MW	Mega Watt (1,000 kilowatts)
MWh	Mega Watt Hour
NEPRA/ Authority	National Electric Power Regulatory Authority
NTDC/Power Purchaser	National Transmission and Dispatch Company Limited
NPGCL	Northern Power Generation Company Limited
0&M	Operation & Maintenance
OEM	Original Equipment Manufacturer
PES	Pakistan Engineering Services (Pvt.) Limited
Petitioner	Northern Power Generation Company Limited
PKR/Rupees-/Rs.	Pak Rupees, Legal Currency of Pakistan
PPA	Power Purchase Agreement
PSO	Pakistan State Oil
RFO	Residual Fuel Oil
ROE	Return on Equity
ROI	Return on Investment
Ton	Metric Ton i.e. 1000 Kg
JSAID	U.S. Agency for International Development
WAPDA	Pakistan Water & Power Development Authority
WPI	Wholesale Price Index

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Section 1 Petition Summary

Name of Applicant	Northern Power Generation Company Limited (NPGCL)			
Registered Office: 197-WAPDA House, Lahore				
Mailing Address: Thermal Power Station,				
	Mehmood Kot Road, Tehsil & District Muzaffargarh			
Telephone:	066-9200151-156			
Facsimile:	066-9200166			
Licensee details	NPGCL is the licensee of National Electric Power Regulatory Authority (NEPRA) and holds the Generation License bearing No. GL/03/2002 dated 01.07.2002.			

Representative of NPGCL

The petition is being filed through Engr. Sabech-Uz-Zaman Faruqui, Chief Executive Officer of NPGCL who has been duly authorized by Board of Directors vide Resolution passed in its meeting held on 28thOctober 2019 to sign and file the Tariff Petition for revision of the Multi Year Tariff of NPGCL. Additionally, the following officers of NPGCL shall present any document, in support of the Tariff Petition, as needed and do all acts necessary for completion and processing of the application: -

Mr. Masood AhmadFinance DirectorEngr. Ghulam Haider SoomroChief Engineer/Technical Director

The Tariff Petition is being submitted with assistance of the following, and who shall also represent the case of NPGCL before NEPRA during hearing: -

- Financial Consultant: International Consulting Associates (Pvt.) Limited
- Technical Consultant: Elan Partners (Pvt.) Limited

The Affidavit of the signatory/ CEO is appended as and photocopy of the Bank Draft (tariff petition fees) attached.

Section 2 About the Petitioner and background of tariff

Consequent upon the restructuring of power wing of Pakistan Water and Power Development Authority, hereinafter referred to as the "WAPDA", its thermal power generation facilities have been split into four (4) independent generation companies, which are known as GENCO(s). Subsequent to this, GENCO - III, or Northern Power Generation Company Limited (NPGCL), was incorporated on October 15, 1998 as a Public Limited Company under the Companies Ordinance of 1984.

NPGCL commenced its commercial operation on March 01, 1999. It was originally organized to take over all the properties, rights, assets, obligation and liabilities of Power Stations of Thermal Power Station Muzaffargarh, Natural Gas Power Station Multan, Gas Turbine Power Station Faisalabad and Steam Power Station Faisalabad.

National Electric Power Regulatory Authority (NEPRA) granted NPGCL a Generation License bearing No. GL/03/2002 by, initially for a term of 25 years on July 01, 2002. NEPRA retired/excluded the three units of NGPS Multan i.e. Unit No. 1, 3 & 4 (each of 65.00 MW) from the Generation License of NPGCL through its decision dated April 18, 2014. However, NEPRA vide modification-II to the generation license dated October 31, 2014 included Combined Cycle Power Plant, Nandipur. NEPRA also re-fixed the term of generation license up to the year 2044 with the addition of Nandipur CCPP Block.

NEPRA through modification III dated May 2, 2018 bearing letter no NEPRA/R/LAG-03/7134-39 decided not to allow the extension in useful life of Unit No. 1-4 of the GTPS Faisalabad (operating in open cycle mode) and Unit No. 1-2 of SPS Faisalabad. However, the Authority further decided to extend the useful life of the Unit No. 5-9 of GTPS Faisalabad (operating in combined cycle mode) till June 30, 2022.

NEPRA determined tariff for NPGCL on January 22, 2016 for the control period of three years from the FY 2014-15, FY 2015-16 & FY 2016-17, replacing the earlier tariff determined on May 02 2006. NEPRA determined the revised tariff for NPGCL on October 19, 2016 after review motion. The said determination was notified vide S.R.O No. 702(1)/2017 dated July 21, 2017.

Section 3 Grounds of Tariff Revision Petition

NPGCL under its existing tariff has been incurring significant losses owing to the fact that the tariff determined on a cost-plus basis does not fully reflect the actual costs that the company has borne over its operational years. Based upon audited financial statement, a summary of such losses has been tabulated below;

	*			PKR mullon
-	Financial Year	EPP Variance	A CPP Variance	Net Effect
	2014-15	(3,402)	(184)	. (3,586)
	2015-16	(3,334)	(3,122)	(6,456)
	2016-17	(1,868)	(1,886)	(3,754)

The following factors, explained more comprehensively within the tariff petition which have contributed to the financial losses;

- i. The major component of tariff which contributed significant loss was salaries and pension benefits provided for employees of NPGCL. The reason behind the maximum loss was difference in rates of annual increase which were allowed by NEPRA and actual increase of the said costs. The epitome of the fact is that NEPRA allowed the adjustment of salaries and pension benefits with CPI whereas actual salaries and pension benefits were increased by revision of pay and allowances made by the federal government in the annual budget and annual compulsory increment in Basic Salary as per the service rules. The actual increase in pay & allowance were higher than the increase registered in CPI on annual basis.
- ii. Due to lower side FCC allowed by NEPRA in its previous tariff determination there was significant adverse impact on the revenue of all Blocks of Muzaffargarb and Faisalabad.
- iii. As against transformation & switchyard losses of 1.84% at TPS Muzaffargarh, NEPRA has allowed adjustment up to 0.5% only in the previous tariff determination, this has caused financial loss in fuel cost component part of tariff.
- iv. Some of the auxiliary were isolated while conducting Heat Rate test by the Independent Engineer conducted in December 2013 and did not include its impact in the net Heat Rates, reported in its report. NEPRA adopted the Heat Rates worked out by the Independent Engineer in its determination of 22.01.2016. NPGCL worked out the impact of isolation of oil decanting auxiliary and made request to NEPRA in Motion for Leave to Review, but NEPRA did not revise Fuel Cost Component (FCC) by making correction in Heat Rates, on the plea, that matter was not part of original petition. Since then NPGCL has sustained a substantial loss for less determined FCC revenue than the actual fuel cost incurred.
- v. While conducting Heat Rate test, the Independent Engineer did not account for the impact of Ambient Temperature as the correcting curves of two units out of six units, provided by OEM, were not readily available as a documentary evidence at that time. Later on, Independent Engineer revised the Heat Rates of all units of TPS Muzaffargarh and NPGCL made request to NEPRA to revise the FCC accordingly. NEPRA however, did not revise FCC on the mere ground that NPGCL could not trace correction curves of Two (2) units and provide as evidence. NEPRA could have revised FCC for Four (4) units of which

correction curves designed by OEM were provided by NPGCL. The NPGCL is suffering tangible loss since then in fuel cost.

vi. In the previous tariff determination, NEPRA has allowed VO&M in PKR only and has also allowed indexation with CPI on semi-annual basis. The major composition of VO&M is plant repair & maintenance expenses for which foreign material is purchased and services of expatriates are hired. The cost of foreign cost component in VO&M has been increased immensely through devaluation of PAK Rupees with relation to foreign currencies.

vii. In the previous tariff determination, NEPRA did not allow sustainability charges for operation and maintenance of switchyards of discontinued energy blocks of NGPS Piranghaib Multan, whereas NPGCL is still maintaining these switchyards being exclusively used by NTDC for operational needs of power dispersals in the local area. NPGCL is incurring O&M cost which is not covered in its power sale tariff and sustaining financial loss on this account.

Present petition is being made on the grounds to above factors contributing financial loss to NPGCL, the said grounds have been explained in detail in related sections of this tariff petition.

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Section 4 Statement of Compliance

4.1. Statutory Compliance

- i. Under Section 7 of the "Regulation of Generation, Transmission & Distribution of Electric Power Act, 1997 (hereinafter called as 'NEPRA Act')", the Regulator is responsible for determining tariff, rates, charges and other terms and conditions for the supply of electricity by the generation, transmission and distribution companies.
- ii. NEPRA is also responsible for determining the process and procedures for reviewing tariffs, recommending tariff adjustments, and revision thereof.
- iii. Under Section 15 of the NEPRA Act, the Regulator has granted a Generation License to NPGCL/ Petitioner for a period of 25 years with effect from 01 July 2002. Later, NEPRA has made three (3) modification in the generation licenses modifying the generating capacity and period of license.
- iv. Under Rule 6 of the Generation Rules 2000, the licensee can charge only such tariff for provision of electric power as approved by the Authority. Accordingly, on filing petitions by NPGCL for determination of its tariff for sale of its generated electricity, NEPRA has determined initial tariff as communicated through letter No. NEPRA/R/TRF 46/NPGCL-2005/3918-20 cated 02.05.2006. NEPRA has determined revised tariff through letter no. NEPRA/TRF-304/NPGCL-2015/832-834 dated January 22, 2016 and through letter no, NEPRA/TRF-304/NPGCL-2015/14377-14379 dated 09.10.2016 for the control period of three years for FY 2014-15, FY 2015-16 & FY 2016-17 subject to indexation/adjustments as factored in the tariff determination.
- v. As per NEPRA Regulations, the same generation tariff shall be applicable until new tariff is determined for the Petitioner. The tariff petition is being filed in compliance of aforesaid Rules and Regulations of NEPRA.

4.2. Regulatory Compliance

NEPRA has made certain directions to NPGCL in its determination of tariff dated 22.01.2016 and determination on Motion of Tariff review dated 19.10.2016. The status of compliance has been explained as hereunder:

- i. NPGCL and NTDC should approach NEPRA after mutual agreement on the usage of system charges of discontinued power stations of GTPS Shahdara Lahore and NGPS Piranghaib Multan. On the direction of Ministry of Energy (Power Division), NTDC has taken over operational control of Piranghaib Multan, but consideration price is yet to be settled.
- In compliance of directions of NEPRA made through letter NEPRA/DG(M&E)/LAG-3/ 9064-67 dated 27.05.2019 for handing / taking over of 220 kV Switchyard of TPS Muzaffarabad, NPGCL has constituted a committee vide letter dated 19.06.2019 and number of meetings have been held with NTDC. The matter is still un-resolved as both parties could not reach on amicable solution for settlement of consideration price and setting of handing/taking over modalities.

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The NEPRA while determining Heat Rates on RLNG for energy blocks of TPS Muzaffargarh has directed NPGCL to carryout Heat Rate tests on RLNG fuel. The SNGPL has agreed to supply 200 MMCFD RLNG to TPS Muzaffargarh on "as and when available" arrangement basis. SNGPL could however manage to supply only 1,575.743 and 7.15 MMCFT RLNG during FY 2017-18 and 2018-19 respectively. Therefore, having no firm commitment for consistent supply of RLNG, NPGCL has not carried out Heat Rate test on RLNG. Logically, the heat rate is calculated in terms of BTUs consumed per kWh, therefore Heat Rate on both fuels i-e; HSFO and RLNG will remain same. So, separate Heat Rate test on RLNG may not make any difference in efficiency and loading of the plant. The desired plant efficiency and loading data will be shared once the plant is operated fully on RLNG.

NEPRA considered the request of NPGCL with respect to start-up cost and decided not to allow the start-up cost as part of variable O&M. NEPRA, however directed that the power purchaser and power producer shall deal the matter in line with the PPA and submit the same to NEPRA for approval. NPGCL and CPPA-G have mutually agreed on start-up cost calculation mechanism and have submitted the same to NEPRA on 17.10.2019 vide CPPA-G.Letter No. DGMT-CONV/MT-N&G/GENCO-III/25278-82.

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Section 5 Comparison of Proposed and Existing Tariff

NEPRA determined two-part tariff of NPGCL for three (3) years i.e. FY 2014-15, 2015-16 and 2016-17 vide letter dated 22.01.2016 and decided review motion dated 19.10.2016. In the said tariff determinations, NEPRA has allowed adjustments with respect to periodic fuel price changes, indexation in fixed O&M and reimbursements of income tax payments as pass through item. NPGCL now proposes revision of tariff to be **effective from 1**st Jul 2019 after the conclusion of controlled period of three years which ended on 30.06.2017. During FY 2017-18 and FY 2018-19 NPGCL continued to address the plant operational matters despite considerable increase in the cost factors. Comparison of reference, current indexed and proposed tariff for CPP, Fuel and VO&M cost components of tariff is as under:

CPP Cost Components	RefTarif	Current Tariff w.e.f 01:07.2019	Proposed Tariff w.e.f 01.07,2019
Escalable	Rs/kW/hr.	Rs/kW/hr.	Rs/kW/hr.
Fixed O&M- Estab Expenses	0.1826	0.2268	0.4577
Fixed O&M- Admin Expenses	0.0141	0.0175	0.0411
Fixed Plant R&M Expenses-Local	-	~	0.0944
Fixed Plant R&M expenses- Foreign			0.1510
Fuel stock carrying cost	-	-	0.1139
Insurance & Regulatory cost	0.0039	0.0048	0.0064
Total Escalable	0.2006	0.2491	0.8644
Non- Escalable			
Regulatory revenue gap	-	-	0.4173
Depreciation	0.0806	0.0806	•
Interest cost	0.0022	0.0022	0.2461
Return on Equity/ Investment	0.1621	0.1621	
Total Non-Escalable	0.2449	0.2449	0.6634
Total CPP	0.4455	0.4940	1.5278

5.1 CPP Cost Component Tariff

5.2 Fuel Cost Component Tariff

Fuel Cost Component (Rs/kWh	Proposed Reference effective 1st July 2019					
Energy Blocks	. RFO 19.10.16	RLNG 19,10.18	19.10.18	RFO	RLNG	Gas
M/Garh Unit#1	10.6378	16.3940	6.6472	21.2958	18.9295	11.1407
M/Garh Unit#2	10.7819	16.6101	6.7348	21.5930	. 19.1938	11.2962
M/Garh Unit#3	10.4091	16.0520	6.5085	20.8643	18.5460	10.9150
M/Garh Unit#4	10.3936	16.0293	6.4993	20.7150	18.4133	10.8369
M/Garh Unit#5	11.0671	17.0359	6.9075	22.1482	19.6873	11.5867
M/Garh Unit#6	11.3698	17.4865	7.0902	22.7603	20.2314	11.9069
GTPS F/Abad unit 5-9 (Gas)	-	13.1515	5.3325	-	14.2311	8.3755

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5.3 Variable O&M Cost Component

	REALTS TRAD		2014 17 TAS	A CONTRACTOR	
M/Garh Unit#1	0.1200	0.1490	0.1010	0.9086	1.0095
M/Garh Unit#2	0.1200	0.1490	0.1010	0.9086	1.0095
M/Garh Unit#3	0.1200	0.1490	· 0.1010	0.9086	1.0095
M/Garh Unit#4	0.1200	0.1490	0.1010	0.9086	1.0095
M/Garh Unit#5	0.1200	0.1490	0.1010	0.9086	1.0095
M/Garh Unit#6	0.1200	0.1490	0.1010	0.9086	1.0095
GTPS F/Abad unit 5-9 (Gas)	0.1200	0.1490	0.1010	0.9086	1.0095
Indexation	CPI	CPI	CPI	US\$/Rs	

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Section 6 Relief Sought

The above proposed Revised Tariff is presented for the approval by the Authority on the basis of the above stated facts, circumstances and assumptions **effective from 1st Jul 2019** and for next Three (3) years up to June 30 2022, subject to necessary indexation/adjustments.

Раде

Section 7 Assumptions/ Basis of revised Revenue Requirement and Tariff calculation

7.1 Current Dependable Capacity

After un-bundling of WAPDA power wing, Northern Power Generation Company Limited has been operating power plants in Muzaffargarh, Multan and Faisalabad in line with parameters defined in the Generation License granted by NEPRA. The Company comprises of six blocks in Thermal Power Station Muzaffargarh, Gas Turbine Power Station Faisalabad and Steam Power Station Faisalabad Plant, with a total installed generation capacity of 1,726 MW. According to the recent Current dependability test (CDC) and HR Test Report in 2014, the CDC of these blocks was reduced to 1,472.52 MW.

The Thermal Power Station (TPS) at Muzaffargarh is located between rivers Indus and Chenab, and approximately 2.5 KM northwest of District Muzaffargarh. At Muzaffargarh, the Company is operating 6 dual fuel-based units with a total Gross Dependable Capacity of 1,184 MW that is spread into 3 blocks. The first block comprises of 3 Russian built units with installed capacities of 210 MW each. These Russian units were commissioned during 1993 to 1995. The second block contains one Chinese built unit with an installed capacity of 320 MW which was commissioned in 1997, while the third block has 2 Chinese built units with installed capacity of 200 MW each which were commissioned in 1995. These plants are capable of operating on RFO, Gas/RLNG and mixed fuel firing.

The Gas Turbine Power Station (GTPS) Faisalabad is located 10 Kms away from Faisalabad City on Faisalabad - Sheikhupura road. At this power plant, the Company is operating 8 German built gasfired units which were commissioned in 1975 and 1 Chinese Steam unit which was commissioned in 1994. Each of the gas-fired units has an installed capacity of 25 MW, while the steam unit has an installed capacity of 44 MW. All 9 units are classified into 2 separate blocks and all have provision of dual fuel combustion (Gas and HSD Oil). However, Units No. 1~4 operable on open cycle mode have been de-licensed by NEPRA on 02.05.2018.

Steam Power Station (SPS) was also being operated by the Company at the same site in Faisalabad. The power station has 2 identical American built steam units that were commissioned in 1967 with an installed capacity of 66 MW each. These machines also have a provision for dual fuel combustion (Gas & RFO). However, NEPRA has de-licensed said block through its decision dated 02.05.2018.

As per Dependable Capacity Test carried out in Dec 2013 and January 2014, of Unit 1-6 of TPS Muzaffargarh, the Net Dependable Capacity was recorded as 1,085 MW after deducting auxiliary load of 98 MW. The existing Net Dependable Capacity of GTPS Faisalabad is recorded as 117 MW, therefore this petition is based upon Net Dependable Capacity of 1,201.98 MW comprising of power complex of TPS M/Garh (unit 1-6) and GTPS Faisalabad (unit 5-9). The details are as below;

Energy	Generation Unit#	Installed Gross	Current : Gross	Current Net
Block#.		Capacity (MW)	Dependable Capacity (MW)	Dependable Capacity (MW)
1	M/Garh Unit #1	210.00	190.00	174.93
1	M/Garh Unit #2	210.00	182.50	. 168.26
1	M/Garh Unit #3	210.00	. 183.50	170.50
2	M/Garh Unit #4	320.00	272.20	245.96
3	M/Garh Unit #5•	200.00	181.44	167.25
3	M/Gath Unit #6	200.00	173.88	158.08
4	GTPS F/Abad Unit# 5-9	144.00	120.51	117.00
Total		1,726.00	1304.03	1,201.98

7.2 Fuel Cost Component

Power generating units of Thermal Power Station Muzaffargarh have been commissioned during 1993 to 1997. Since then the units are being operated on dual fuel firing. Due to degradation factor, heat rate of the machines is declined over the period of time. Previously Heat Rate tests were conducted by Pakistan Engineering Services (PES) for block 1, 2 and 3 of Muzaffargarh Plant under USAID Energy Power Policy after the rehabilitation of the plants.

7.2.1 Heat Rate

In its Determination of 22.01.2016, based upon the report of Independent Engineer, NEPRA adopted net Heat Rates (LHV) as 100% MCR allowing 0.25% transformation losses. On filing Review Motion, NEPRA adopted net Heat Rate as 100% MCR allowing 0.50% transformation losses as shown in the table below:

Unit#	Net Heat Rate (LHV) at 100% MCR i (As per PES report) (Btu/kWh)	Net Heat Rate (LHV) at 100% MCR (0.50% Trf. Loss) (Bu/kWh)
M/Garh Unit#1	10,464.90	10,517
M/Garh Unit#2	10,606.69	10,660
M/Garh Unit#3	10,239.86	10,291
M/Garh Unit#4	10,224.66	10,276
M/Garh Unit#5	10,887.16	10,942
M/Garh Unit#6	11,185.02	11,241

7.2.2 Heat Rate adjustment for Ambient Condition

NEPRA has been kind enough to consider the submission of NPGCL and also acknowledged that the application of Ambient Condition Correction Factor is a standard practice and the methodology has also been shared with NEPRA on 06.05.2013. As per determination dated 22.01.2016, Authority was of the view that;

QUOTE

As regards the ambient temperature conditions correction factor the same has been mentioned in Methodology and Test Procedure for Dependable Capacity and Heat Rate Tests, adopted by Independent Engineer and shared with NEPRA on 06.05.2013 (section 1.2.19), that the measured results of the test, recorded at site ambient conditions, will be corrected from the weighted average of these readings. It is observed that application of correction factors on the test results achieved at site ambient condition is a standard practice, and Independent Engineer (PES), on the basis of correction curve provided by the Petitioner, concluded an increase of 148 Btu/kWh, as correction factor of cooling water inlet temperature (average 38 degree centigrade on yearly basis).

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For justification of the requested claim, the Authority directed the Petitioner to *provide correction curves of all units of TPS M/Gath for analysis purpose* (because units are manufactured by different companies). However, the Petitioner was failed to provide documentary evidence in this regard. Since the Petitioner was unable to substantiate its claim through documentary evidence, the Authority has therefore decided not to allow ambient conditions correction factor to the Petitioner.

Unquote [Emphasis added]

In this regard the documentary evidence of four units duly vetted by Independent Engineer was also provided to the Authority. However, due to mere non providing of correction curves of two units, the Authority has not allowed to pass on the impact of ACCF to other four units. At the very minimum, the Authority could have allowed the ACCF to the extent of those 4 units as the heat rate test was conducted on unit wise basis. Moreover, provisionally the ACCF of remaining units could also have been allowed. NPGCL has now managed to locate the curves of those two units from the OEM manuals and all the curves along-with independent Engineer's recommendation are being attached for consideration of the Authority.

7.2.3 Heat Rate adjustment for Isolation of Auxiliary

The units were supposed to be consuming full auxiliaries during the Heat Rate and CDC test carried out by PES, the IE, that are to be used in normal operation of the plant but due to one or other reasons some of the auxiliaries were not in service at the time of tests.

The impact of these auxiliaries increases total auxiliary consumption at the unit, resulting in less Net Electrical Output, meaning thereby that actual net heat rate of the plant comes out to be on higher side than calculated in Heat Rate Test Report. The following Auxiliaries were isolated by the independent Engineer at the time of test:

a. Auxiliary steam for Soot blowing of units.

b. Auxiliary steam for heating RFO storage Tanks.

c. Auxiliary steam for heating decanting Lorries.

d. Auxiliary energy for RFO unloading pumps.

e. Auxiliary energy for RFO transfer pump.

f. Auxiliary energy for dirty oil pump.

g. Auxiliary energy for lighting load during night.

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The above-mentioned instances have been incorporated in its Report by the Independent Engineer, M/s PES. As for instance, the 'Isolation of Steam valves for heating of RFO for Unit No.1' is mentioned in Section 3.5.1 of CDC report.

The same impact was requested to Authority in the review petition filed by NPGCL, however on 19.10.2018, NEPRA conveyed that;

QUOTE

The Authority further observed that NPGCL requested for isolated auxiliaries, working capital, and maintenance cost of railway track which was not part of the original petition. The review can only be requested on account cf some error, new evidence with respect to the original decision. *However, the aforesaid issues were not part of the original petition.* Therefore, the Authority has decided to not consider the same in the instant review.

UNQUOTE [Emphasis added]

Now, NPGCL is making this request as part of its original petition and hereby requests to allow the same. The impact is shown as below:

Unit No.	S-Increase in Net Heat Rate (BTU/kWh)
1	220.73
2	229.69
3	226.17
4	161.88
5	231.48
6	245.37

Working of Isolated Auxiliaries is **attached**. At par with Review Determination of JPCL-2015, Authority is requested to incorporate the impact of auxiliary consumption which was isolated at the time of conducting Heat Rate Test by the Independent Engineer.

7.2.4 Adjusted Heat Rate

In view of above to save NPGCL from perpetual loss on account of fuel cost component, NEPRA is requested to please allow FCC for energy blocks of TPS M/Garh based upon the adjusted Heat Rates as shown in the table below:

Unit#	Net Heat Rate- Reference (BTU/kWh)	Adjustment for ambient: Temp (Btu/kWh)	Adjustment for Isolation of Auxiliary (Btu/kWh)	Net adjusted Heat Rate (Btu/kWh)
M/Garh Unit#1	10,517.00	148.00	220.73	10,885.73
M/Garh Unit#2	10,660.00	148.00	229.69	11,037.69
M/Garh Unit#3	10,291.00	148.00	226.17	10,665.17
M/Garh Unit#4	10,276.00	148.00	161.88	10,585.88
M/Garh Unit#5	10,942.00	148.00	231.48	11,321.48
M/Garh Unit#6	11,241.00	148.00	245.37	11,634.37

7.2.5 Fuel Cost Component

The Authority is requested that based upon the above proposed adjusted Heat Rate, the reference FCC w.e.f. 01.07.2019 may be approved as shown in the table below:

Fuel Cost Component (Rs/kWh)	Terrisian National Antonio References	Reference			Current		roposed Refer	ence effecti	ve 1st July 201
	RFO	RLNG	Gas	RFO	RLNG	Gas			
Energy Blocks	19.10.2016	19,10.2018	19.10.2018	15.06.2019	19.10.2018	19,10,2018	RFO	RLNG	Gas
M/Gath Unit#1	10.6378	16.3940	6.6472	20.5748	16.3940	6.6472	21.2958	18.9295	11.1407
M/Garh Unit#2	10.7819	16.6101	6.7348	20.8535	16.6101	6.7348	- 21.5930	19.1938	11.2962
M/Garh Unit#3	10.4091	16.0520	6.5085	20.1324	16.0520	6.5085	20.8643	18.5460	10.9150
M/Gath Unit#4	10.3936	16.0293	6.4993	20.1025	16.0293	6.4993	20.7150	18.4133	10.8369
M/Gath Unit#5	11.0671	17.0359	6.9075	21.4051	17.0359	6.9075	22.1482	19.6873	11.5867
M/Garh Unit#6	11.3698	17.4865	7.0902	21.9906	17.4865	7.0902	22.7603	20.2314	11.9069
GTPS F/abad unit 5-9 (Gas)		13.1515	5:3325	-	13.1515	5.3325	•	14.2311	8.3755

References Vahies	in the second	Reference			Current			ist July 2019	
Fuel Calorific Values (CV)	RFO	RLNG	GAS	RFO	RLNG	GAS	RFO	RLNG	GAS.
HHV/ LHV factor	-	1.1076	1.1076	-	1.1076	1.1076	-	1.1076	1.1076
RFO (BTU per K.g)	38,557.80	-	-	38,557.80	-	-	38,557.80	-	-
Gas/RLNG (MMBTU/cft) M/Garh	•	1,000	1,000	-	1,000	1,000	-	1,000	1,000
Gas/RLNG (MMBTU/cft) F/abad	-	1,050	1,050	-	1,050	1,050	-	1,050	1,050
Fuel Prices (HHV)			-	~	-	-	· · ·	-	-
RFO (Rs/M.T)	39,000.00			75,430.68	-	-	75,430,68	-	
Gas (Rs/MMBTU)	-	-	588.23	-		588.23	•		924.00
RLNG(Rs/MMBTT)	-	1,450 75	-		1,450.75	-	~	1,570.00	~

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7.3 Capacity Purchase Price

In its previous determination, based upon gross dependable capacity of 1,472.52 MW, NEPRA has determined Capacity Purchase Price Component (CPP) with break-up of following cost components:

i. Fixed O&M,

- ii. Depreciation,
- iii. Interest cost and
- iv. Return on equity.

The Fixed O&M cost component has been determined with following breakdown;

- i. Administration and establishment,
- ii. Insurance & Regulatory cost and
- iii. Other Income.

The Fixed O&M cost component is allowed to be indexed on 1st July and 1st January twice in a financial year with relation to changes in CPI, whereas no indexation has been provided for cost components of depreciation, interest and return of equity. In order to ensure recovery of determined annual revenue requirement, the capacity purchase price is however allowed to invoice monthly of equal amount in terms of Rs/kW/hrs. for capacity generation.

7.3.1 Escalable Cost components of CPP

The assumption basis of proposed Escalable cost components of CPP in this petition has been explained in the succeeding paragraphs.

7.3.1.1 Fixed O&M Cost

The fixed O&M component of the Escalable CPP represents the fixed costs of all the staff for O&M and firefighting, plant administration, security, transportation, overheads, office costs, professional fees such as Audit, tax and legal, as well as some other fixed operational cost such as environmental monitoring and auxiliary used during standby operation of machines that do not change with the dispatch level of the plant. Fixed O&M cost component has been prepared based on the local and foreign parts;

Fixed O&M cost component has been sub divided among following;

- i) Fixed O&M Establishment Expenses
- ii) Fixed O&M Admin Expenses
- iii) Fixed Plant R&M Expenses

The same has been further explained below.

7.3.1.1.1 Salaries, Wages and Fringe Benefits cost

On unbundling of WAPDA, through Business Transfer Agreement (BTA) and ancillary manpower transition program, the employees working in the power plants were transferred to NPGCL and absorbed in the company protecting their all the emoluments enjoyed in WAPDA service. Being owned by Federal Government, WAPDA has adopted national pay scales and pension scheme for its employees, therefore, NPGCL has also to maintain continuity in the adoption of national pay scales and pension scheme of Federal Government.

Employees Cost	Reference Tariff 2014-15	Adj Tariff Revenue t Myw.e.f 01.07.2019	(Actual/ audited)	(2018-19 (Provisional)	2019-20 (Proposed)
Establishment Expenses	Mln.Rs	Min.Rs	'Mln.Rs'	Mln:Rs	Mln.Rs
Pay & Allowances	1,355.0	1,682.6	1,905.4	2,057.8	2,343.6
Contribution for Retiring Benefits	902.0	1,120.1	2,013.0	2,250.3	2,475,4
Total	2,257.0	2,802.8	3,918.4	4,308.1	4,819.0

The establishment cost mainly comprised of salary and wages expense of the employees of the Company which includes basic pay, ad-hoc allowance, cash medical allowance, conveyance allowance, dual charge allowance, entertainment allowance, deputation allowance, group life insurance, house rent allowance, job allowance, livery allowance, local compensatory allowance, special pay, other allowance, overtime, off day wages, qualification pay, shift allowance etc. This also includes fringe benefits like education and training, sports and recreational benefits, EOBI, social security charges, pension charges and free electricity etc.

NEPRA in its previous tariff determination for NPGCL, allowed indexation of Administration & Establishment expenses to be adjusted by changes in CPI. However, NPGCL suffered a significant loss due to the difference in rate of increase of salaries as compared to what was allowed by the NEPRA i.e. Adjustment with relation to CPI. The below table illustrates the difference in rates of increase in salaries in different years and their comparison with annual consumer price index (CPI).

The comparison between the income allowed in the CPP tariff component for salaries and pensions and actual expenses provides an understanding that NPGCL suffered significant loss due to inappropriate and inadequate indexation with relevant inflation factor.

It can also be observed from the audited financial statements that a significant increase in pension benefits was occurred in 2015-16. NPGCL has not yet established a pension fund by placing adequate funds as per funding liability worked out by the actuarial consultant whereas its employees are retiring each year and funding liability is being increased accordingly.

The Company has not made fresh hiring since 2011 except for filling strategic positions, hence manpower strength of serving employees is decreasing gradually, however number of retired employees is increasing on retirement of the serving employees. The comparison of status of serving and retired employees at the end of financial year has been shown in the table below:

Description	CPI	CPI Incr %	Pay/ Pension Incr%
Reference CPI	198.05		-
CPI PAK 1st July 2015	199.66	0.8%	7.5%
CPI PAK 1st July 2016	205.99	3.2%	10.0%
CPI PAK 1st July 2017	216.33	5.0%	10.0%
CPI PAK 1st July 2018	225.40	4.2%	10.0%
CPI PAK 1st July 2019	245.94	9.1%	10.0%

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Amounts recognized in the statement of profit or loss against defined benefit scheme and the liability for staff retirement benefits has been shown in the table below:

Year ·	Net yearly service charge (Mln.Rs)	Pension Funds liability at year end (Mln:Rs)
June 2015	1,379.4	11,323.1
June 2016	3,248.0	15,415.8
June 2017	2,289.7	18,799.1
June 2018	2,011.6	20,247.6

The above table shows that yearly charge and liability on accounts of post-retirement benefits has been almost doubled in just four years.

Number of Employees	Active	<u>Retired</u>	<u>Total</u>
	2,247	1,657	3,904
As on 30.06.2018	2,277	1,627	3,904
As on 30.06.2017	2,667	1,308	3,975
As on 30.06.2016	2,695	1,198	3,893
As on 30.06.2015	2,726	1,117	3,843

Therefore, in order to meet the pension expense, it is necessary for the NPGCL to contribute dues, on actual basis, into the pension plans for which the company request Authority to allow the contribution into pension benefits based on budgetary allowance instead of actual pension payments made to retired employees and their adjustments with CPI.

Since increase in pay and pension of NPGCL employees is being made linking it to the revision of pay and pension made by federal government, the Company makes request to the Authority to allow the segregation of administration and establishment expenses into two separate heads i.e. Administration expenses and Salaries and pension expenses. Where Administrations expense may be allowed to be adjusted with the prevailing CP1 rate and salaries and pension expenses may be increased by linking to the revisions of pay and pension made by the federal government for its employees in the annual budget yearly along with annual increment. Such adjustment will enable NPGCL to recover actual establishment costs through tariff.

The latger number of serving employees of the Company are of lower scale working as unskilled and semi-skilled employees relating to the functions which are generally outsourced by the IPPs. The break-up of serving employees as on 30.06.2019 has been shown in the table below:

Employees Scales	Total
Executives/ Managers (BPS-17 & above)	106
Supervisors/ support staff (BPS-11 to 16)	1,070
Labor & Security staff (BPS-1 to 10)	1,071
Total	2,247

The Company therefore propose establishment cost for FY 2019-20 as Rs 4,819 million. The proposed establishment cost per employees (2,247 active and 1,657 retired) works out as Rs 102,864 translated into Rs 0.4577/kW/hr., is much lower than the establishment cost allowed by NEPRA to the thermal IPPs.

7.3.1.1.2 Administration Cost

The Administrative costs includes taxes and licenses, travelling and conveyance, utilities, subscription and periodicals, supervisory overheads, communications, legal and professional fee, printing and stationery fee, auditor's remuneration, advertisement, Management Fee and Miscellaneous. In its last determination, based upon the actual expenses of last years, NEPRA allowed admin expenses of Rs 148 million per annum. The actual admin expenses for FY 2018-19 has been recorded as Rs 215.81 million. As per adjustment / indexation mechanism provided, the indexed revenue in tariff allowed for admin expenses for FY 2019-20 revenue of Rs 237.39 million has been proposed with Quarterly indexation. The proposed admin cost translates into Rs. 0.0225 per kw/hr. The break-up of proposed admin cost is shown in the table below:

Admin Expenses	Reference. Tariff 2014-15	Adj /Tariff Revenue w.e.f. 01.07.2019	A 2017-18 (Actual/,- audited)	2018-19 (Provisional)	2019-20 (Proposed)
Travelling & Conveyance	20.50	25.46	27 34	28.71	31.58
Management fee charges etc.	100.00	124.18	109.00	171.25	188.38
Printing & communication	8.10	10.06	14.00	7.91	8.70
Legal & professional charges	4.30	5.34	7.00	3.58	3.94
Others	15.10	18.75	5.50	4.36	4.80
Total	148.00	183.79	162.84	215.81	237.39

7.3.1.1.3 Fixed Repair & Maintenance of Plant

Contrary to RFO based IPPs, CPP allowed to NPGCL is far less than the requirements to fulfill contractual obligations under Power Purchase Agreement, to ensure availability of units, as and when required by System Operator. This is as tabularized below;

'Tariff Component	Atlas Power Limited (225 MW RFO CCPP)	Hub Power Company Limited Narowal (213 MW RFO CCPP)	Nishat Power Limited (200 MW RFO CCPP)	Nishat Chunian Power Limited (200 MW RFO CCPP)	Attock Gen Limited (165 MW RFO Based CCPP)	Liberty Power Tech Limited (202 MW RFO CCPP)	NPGCL old blocks (1350 MW RFO Fired Steam Power Plant)
Capacity Charge (Rs/k	W/Hour)				•		
Fixed O&M Foreign	0.2119	0.3172	0.2198	0.2194	0.2543	0.2620	-
Fixed O&M Local	0.1897	0.0882	0.1965	0.1962	0.2232	0.1543	0.2441
Total Fixed O&M	0.4016	0.4054	0.4163	0.4156	0.4775	0.4163	0.2441
Cost of Working Capital	0.2167	0.3205	0.2206	0.2116	0.0441	0.2299	-
ROE	0.8011	1.0046	0.6305	0.6510	0.6796	0.8216	0.1621
ROEDC	0.0862	0.2058	0.1097	0.1243	0.1002	0.1308	-
Sub Total	1.5056	1.9363	1.3771	1.4025	1.3014	1.5986	0.4062
Debt Servicing	1.4785	1.5438	1.6145	1.7534	-	1.7919	0.0022
nsurance Dealt separately					0.0050		
Other Income	-	-	-	-	-		(0.0125)
Depreciation	- · · ·	-	-		-	-	0.0806
Total	2.9841	3.4801	2.9916	3.1559	1.3014	3.3905	0.4815

This unjustified treatment has compelled NPGCL to forego its compulsory repairs and maintenance, which in turn causes excess forced outages. NPGCL is bound to perform Annual Boiler Inspection of each unit on yearly basis as per rerms of PPA and Boiler Inspector requirements. Similarly, Major Overhauling of units is to be performed after every 5th year of operation as per terms of PPA. This is to ensure availability of units and is to be performed regularly. Unfortunately, in past, NPGCL has never been allowed the allowance in CPP for Fixed R&M expenses and currently the Fixed O&M part of CPP allowed to NPGCL contains;

- i. Administration and establishment,
- ii. Insurance & Regulatory cost and

iii. Other Income.

NPGCL is bound to cover its expenses on fixed R&M through its VOM component, which is also far lagging as compared to RFO based IPPs. Due to reduced generation in recent years, revenue through Variable O&M charge has also been reduced and the cost of preventive maintenance has not been covered in any other tariff component at present. This has prompted the Company to make request to the Authority to allow fixed plant repair &

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maintenance cost component of Rs 2,584 million (994.40 Million Local + 1589.60 Million Foreign) in the proposed tariff through this tariff petition, which translates into Rs 0.2454/kW/hour in the proposed CPP cost component (0.0944 Rs/kW/Hr. Local + 0.1510 Rs/kW/Hr. Foreign) in tariff. This amount is meant for purchase of consumable material and carrying our repair works in connection with preventive maintenance as per detail given below:

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			Willion Ks
Fixed Ö&M Expenses	Million Rs	Local	Foreign
Fixed R&M- Boiler Inspection etc.	728.0	364.0	364.0
Firefighting refilling	110.0	110.0	-
Consumable material	1,532.0	306.4	1,225.6
Mandatory Auxiliary	180.0	180.0	-
Switchyard maintenance	34.0	34.0	-
Total	2,584.0	994.4	1,589.6

7.3.1.1.4 Transportation/ vehicle maintenance cost

For operational needs, NPGCL is maintaining transport vehicles which are being maintained though they have completed their economical useful life. For better upkeeping of vehicles, Authority is requested to allow revenue of Rs 75 million per annum which translate into Rs. 0.0071/kW/hr. The break-up of proposed transportation cost has been in the table below:

Description		Numbers
Number of Transport vehicles (Nos)		45
Number of Operational vehicles (Nos)		52
Total Vehicles	t ^h	97
Petrol, Oil & Lubricants (Mln. Rs)		55.0
Repair & Maintenance (Mln. Rs)		18.0
Token renewal expenses (Mln.Rs)		2.0
Total Transportation cost (Mln. Rs)		75.0

7.3.1.1.5 Repair & Maintenance expenses of buildings, roads & general plants

NPGCL is maintaining operational & residential buildings and civil works structures of M/Garh and Faisalabad power plants. These civil work structures are growing older and need maintenance to keep them in use. For this purpose, Authority is requested to allow revenue of Rs 120 million per annum which translates in to Rs. 0.0114/kW/hr. The break-up of proposed repair & maintenance cost has been tabularized as below:

Description		Million Rupees
Repair & Maintenance – Plant Buildings		35.0
Repair & Maintenance- General Plants		20.0
Repair & Maintenance – Residential colony		65.0
· · · · · · · · · · · · · · · · · · ·	Total	120.0

7.3.1.1.6 Insurance

The insurance premium is estimated to be Rs. 25.30 Million and the insurance component amounts translate into Rs 0.0024 per kW/hr. based on the insurance agreement. The, insurance cost is calculated based on the previous year's insurance costs.

7.3.1.1.7 Regulatory fee

The regulatory fee includes renewal of Generation license fee which is estimated to be Rs. 41.76 Million. This translates into proposed tariff of Rs 0.0040 per kW/hr.

7.3.1.2 Fuel Stock Carrying Cost

As per terms of PPA, NPGCL is required to maintain RFO stock of 15 days. If all units are operated at full load, on average, there will be consumption of 7,827 M.T RFO in a day. Therefore, RFO stock of 117,354 M.T. for 15 day's consumption is required to be maintained by NPGCL. Due to financial constraints, NPGCL could not maintain said level of RFO, hence certain times could not comply to the dispatch request of NPCC due to shortage of RFO stock. The NPCC terms said outage as forced outage during 2015-16 and 2016-17 and the CPPA-G has accordingly imposed LDs for FY 2015-16 and 2016-17 for failure to dispatch of the M/Garh power plant on this account. However, with the support of federal government, NPGCL has managed to maintain adequate stock of RFO during 2017-18 and FY 2018-19. But maintaining RFO stock for 15 days consumption as per PPA is costing carrying cost of Rs 1,199.36 million per annum to NPGCL at prevailing RFO price and financing rates. It is therefore Authority is requested to allow revenue for RFO carrying cost of Rs 1,199.36 million in the tariff, which translates into Rs.0.1139 /kw/hour. The working of RFO carrying cost has been shown in the table below:

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Avg daily RFO consumption (M.T)	7,824
Mandatory RFO stock (days)	15
RFO stock for 15 days (M.T)	117,354
RFO price (Rs/M.T)	73,000
Fuel stock cost (Mln.Rs)	8,567
Fuel stock carrying cost @ 14% (Mln.Rs)	1,199

7.3.1.3 Regulatory Revenue Gap (CPP)

NEPRA determined tariff for a controlled period of 3 three years i.e. for FY 2014-15, 2015-16 and 2016-17. The indexed revenue however, earned through tariff was not adequate to meet with prudently incurred actual expenses and NPGCL has been suffering operational losses. The shortfall in revenue forced NPGCL to delay making payments to fuel supplier and a huge amount has been accumulated as payable to fuel suppliers. NPGCL has continued to face shortfall in the revenue as compared to actual expenses prudently incurred by NPGCL during FY 2017-18 and FY 2018-19. The detail has been shown in the table as under:

	ALC: AND AND AND A	2018-19 - 10				
Capacity Charge	CPP	CPP Expenses	Surplus/ (Deficit)	CPP I.Income	CPP Expenses	Surplus/ (Deficit)
. Adm. & Estab Exp	2,601.05	4,655.51	(2,054.46)	2,740.60	4;453.36	(1,712.76)
Insu & Regulatory	52.97	53.60	(0.62).	56.26	56.49	(0.23)
Fixed O&M	2,654.03	4,709.11	(2,055.08)	2,796.87	4,509.85	(1,712.99)
Depreciation .	918.24	781.57	136.67	1,019.39	1,782.15	(762.76)
Interest cost	25.06	25.06	-	27.82	27.82	_
Return on Equity	1,846.73	1,846.73	-	2,050.15	2,050.15	
Total	5,444.06	7,362.48	(1,918.42)	5,894.23	8,369.98	(2,475.75)

Financial years 2017-18 and 2018-19 have not been covered in the controlled period, therefore, NPGCL makes request to Authority to please allow recovery of shortfall in revenue of Rs 4/394.16 million (2,475.75 during 2017-18 & Rs 1,918.42 during 2018-19) on account of regulatory revenue gap of CPP cost component of tariff. This translate into additional CPP charge of Rs 0.4173/kW/hr. for a year.

7.3.1.4 Capital Expenditures (CAPEX)

NPGCL is suffering losses for not getting adjustment in Heat Rate by carrying out Heat Rate Test as already directed by NEPRA. NPGCL intends to carry out Heat Rate Test and has obtained quotes for the same from Independent Engineers. As per fee quotes, carrying out Heat Rate test will cost Rs 85 million to NPGCL. The cost of carrying Heat Rate Test is not covered in any cost component of tariff already determined by NEPRA.

Due to not having installed Energy/ Revenue meters at bus bars, the Net Electrical Output of TPS M/Gath and GTPS Faisalabad is being worked out as difference between export and import of power in the switchyards of said power complexes. The transmission losses of the switchyards are costing NPGCL heavily therefore NPGCL intends to arrange installation of Energy/ Revenue meters at the busbars of the power stations of M/Gath and Faisalabad in coordination with NTDC. The section of "Metering and Protection Code" with caption of Installation of Grid Code states that "installation of revenue meter and ancillary equipment at substation for point of connection shall be the responsibility of the Generator". As per quotes, the purchase and installation of Energy/ Revenue meters would cost NPGCL as Rs 125 million. The said cost is not covered in the tariff already determined by NEPRA.

It may be noted that most of operation and transport vehicles maintained by NPGCL have completed their economical useful life and are in bad shape now. To keep them roadworthy, NPGCL has to incur heavy running cost which is not covered in the tariff. NPGCL therefore intends to replace 30 vehicles by purchasing the new vehicles at an estimated cost of Rs 90 million in three years.

SNGPL supplies gas to the residential colony of TPS M/Garh through bulk meter. NPGCL maintains gas supply system in the residential colony at its own. The Gas meters already installed in Residential colony have become faulty and NPGCL has taken up the case with SNGPL to replace the existing faulty meters with new meters and maintain the gas supply

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systems in the residential colony as well. SNGPL has quoted price of Rs. 90 million for this purpose which is not covered in the existing tariff. NPGCL therefore, makes request to the Authority to allow revenue in tariff to make spending for replacement of faulty meters.

NPGCL is required upfront revenue for procurement of aforesaid capital nature items, for which Company has no resources. It is therefore, Authority is requested to allow aforesaid capital expenditures of Rs 390 million altogether and adjust in tariff to recover the amount over the remaining years under license period of the respective power plant.

7.3.2 Non-Escalable Cost Component of CPP

The Authority has determined non-Escalable cost components of CPP containing of Depreciation, Interest on loans and Return on Investment in its previous Determination. The depreciation charge has been allowed as worked out in accordance with depreciation rate as per adopted accounting policy of the Company. The interest on loan has been allowed as per debt retirement schedule of the outstanding loans. The return on equity has been allowed @11.2% for the portion of equity investment made in the operational assets of the energy blocks covered in the generation license of the Company.

As per generation license, the allowed period of GTPS Faisalabad (Unit 5-9) will expire in the year 2022 and of TPS M/Garh will expire in 2033. In view of the above situation, NPGCL has proposed in this tariff petition to recover amount of regulated capital assets cost including stock of spare parts with due return within the remaining period of license of old blocks. The annual capital redemption charge is therefore proposed as Rs 2,591.2 million as per calculation shown in the table below:

Description	TPS M/Garh	GTPS Fsd	Total
Net depreciable capital cost as on 30.06.2019 (Mln.Rs)	11,875.7	1.179.6	13,055.3
Remaining years of license period (Yrs.)	14	3	
Rate of return on capital investment (%)	15%	1.5%	
Yearly Return and capital redemption charge (Mln.Rs)	2,074.5	516.6	2,591.2

The yearly return and capital redemption charges amounting to Rs. 2,591.28 Million translates into the tariff component of Rs 0.2461 per kW/hr.

7.4 Variable O&M Expenses

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Variable Operations & Maintenance (O&M) costs include Repairs & Maintenance of power plant

and cost of Chemical & Fuel Additives as well. In the previous tariff determination, NEPRA has allowed VO&M in PKR only and has also allowed indexation with CPI on semi-annual basis. The comparison of VOM allowed to RFO based IPPs and NPGCL is as below, which clearly shows the discrimination in the component of VO&M being made to NPGCL as compared to IPPs. This compels NPGCL to forego even necessary maintenance and parts replacements compromising the safety, reliability and availability of the power plants.

Tariff Component	Atlas Power Limited (225 MW RFO CCPP)	Hub Powet Company Limited Natowal (213 MW RFO CCPP)	Nishat Power Limited (200 MW RFO CCPP)	Nishat Chunian Power Limited (200 MW RFO CCPP)	Attock Gen Limited (165 MW RFO Based CCPP)	Liberty Power Tech Limited (202 MW RFO CCPP).	NPGCL old blocks (1350 MW RFO Fired Steam Power Plant)
Variable O&M (Rs/kW	7 <u>h)</u>						
Variable O&M Foreign	1.1181	0.7773	1.1181	1.1155	1.1225	1:1563	-
Variable O&M Local	0.2703	0.4777	0.2703	0.2696	0.2855	0.3712	0.1490
Total	1.3884	· 1.2550	1.3884	1.3851	1.4080	1.5275	0.1490
Indexation	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Six Monthly

The major composition of VO&M is the routine plant repair & maintenance expenses for which foreign material is purchased and services of expatriates are hired. The foreign cost component in VO&M has been increased immensely through devaluation of PAK Rupees with relation to foreign currencies. In this essence, NPGCL requests the Authority to allow variable O&M cost into foreign and local components with the ratio of 90:10 respectively.

The Variable O&M cost of Rs 1,800 million has been proposed as Rs 1,620 million (foreign) and Rs 180 million (local) which translate into variable O&M rate of Rs 0.9086/kW/hr. (foreign) and Rs 0.1010/kW/hr. (Local) for an estimated net electrical output of 1,783 GWh during FY 2019-20 from energy blocks of TPS Muzaffargarh and GTPS Faisalabad.

It is worth mentioning here that it requires almost 2 years in arranging purchase of foreign material through International competitive bidding therefore, Company propose reference US\$ conversion rate as 121.6 as was on 29.06.2018.

7.5 Regulatory Gaps

7.5.1 Startup charges:

First Tariff for the plants of NPGCL was determined on May 02, 2006. However, the said determination did not account for startup charges borne by NPGCL on account of start-up of units.
Due to which NPGCL could not raise the invoice for start-up charges till June 2014.

NEPRA determined revised tariff for NPGCL on January 22, 2016 for the control period of three years from the FY 2014-15, FY 2015-16 & FY 2016-17, replacing the earlier tariff determined on May 02 2006. NEPRA determined the revised tariff for NPGCL on October 19, 2016 after review motion. As per decision of 19.10.2016, NEPRA has allowed to invoice the actual start-up cost in line with IPP's. As per decision;

Quote

The Authority considered the request of NPGCL with respect to start-up cost. The Authority is of the view that the start-up cost should be in line with the Independent Power Froducers and separate invoice should be raised based on actual cost in accordance with the Power Purchase Agreement. The Authority has therefore decided not to allow the start-up cost as part of variable O&M. The power purchaser and power producer shall deal the matter in line with the PPA and submit the same to NEPRA for approval.

Un-Quote

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CPPA-G and NPGCL have finalized working of start-up charges for approval of NEPRA on actual basis and have sent the same to NEPRA on 17.10.2019. NPGCL has not been granted these charges for the period from July 2004 to June 2014, due to which NPGCL has sustained huge financial losses, reflected in our audited financial statements for the stated period. It is therefore requested to allow the same on actual basis in line with decision of the Authority on 19.10.2016, as a regulatory gap item.

7.5.2 Partial load adjustment charges:

The conventional steam plant is primarily designed for base load operation wherein the load variation is kept at minimum. This gives the best efficiency of the plant. However, the system operator tends to frequently vary the load as per requirements of system, thereby affecting efficiency.

Reduced load operation increases auxiliary consumption on one hand and heat rate causing decreased efficiency of the machine on the other. This results in high per unit cost of electricity produced. Moreover, reduced load causes frequent choking of RAH elements due to less Flue Gases outlet temperature, which in turn aggravates the situation.

In the first tariff granted to NPGCL by NEPRA in 2006, the effect of Partial loading was not taken into consideration. Therefore, impact of part load operation during the period of 2004 to 2014 was not granted to NPGCL and NPGCL had to bear significant losses on account of Heat Rate difference/EPP cost during the said period. This can be well witnessed in the financial statements of the company. However, after determination of second tariff for NPGCL on January 22, 2016 for the

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control period of three years from the FY 2014-15, FY 2015-16 & FY 2016-17, the impact of Partial Loading has been mitigated to some extent for its plants at TPS Muzaffargarh.

As per tariff determination para 12.5, it is decided that;

Quote

......The Authority keeping in view the documentary evidence considers that the Petitioner's request for part-load adjustment seems legitimate. Based on the OEM data and partial loading curves the correction factors are being determined for part load operation of the Petitioner's units 1-6

Un-Quote

Pray

As the claim of NPGCL has been declared legitimate by the Authority, keeping in view the OEM provide data, it is therefore also logical that the impact of Partial Loading may be allowed to the plants of Thermal Power Station Muzaffargarh from July 2004 to June 2014 also as regulatory gap item.

7.5.3 Adjustment of calorific value of HSFO:

Reference to NEPRA's determination No. NEPRA/TRF-46/NPGCL- 2006 dated May 02, 2006, the calorific value of furnace oil taken was 40,800 for calculation of Fuel Cost Component (FCC). However, Fuel supplied by the OMCs and under the Fuel Supply Agreement (FSA) between NPGCL and Pakistan State Oil (PSO), offered fuel with the specification of minimum calorific values of 39,672 Btu/ Kg for local and 40,112.8 Btu/ kg for imported fuel with an average calorific value of 39,892.4 BTU/kg.

NEPRA considering the request of NPGCL devised a mechanism of CV adjustment in line with NEPRA's policy for all Power producers. However, this adjustment was not given in first determination of NPGCL plants in May 2006 for the period from July 2004 to June 2014. The adjustment mechanism of CV was allowed by NEPRA in Tariff determination of 22.01.2016 and is reproduced as below:

Quote

The adjustment on account of variation in calorific value will be allowed as per the following mechanism:

- a) The reference CV will be 18364 Btu/lb. There will however be no adjustment below the minimum limit of 18200 Btu/lb.
- b) NPGCL shall maintain and submit, annually a detailed record of consignment wise CV of the oil received and consumed for power generation for the adjustment on account of variation against the reference calorific value duly supported with the copies of test reports certified by the fuel supplier.

Un-Quote

Pray

NEPRA has allowed CV adjustment to all power producers, which was not taken into account in first tariff determination of NPGCL. It is therefore requested that the CV adjustment mechanism,

already devised by the Authority be extended to NPGCL from July 2004 to June 2014, in line with NEPRA's Policy, as regulatory gap item.

7.5.4 Transformer Losses

Reference to NEPRA's determination No. NEPRA/TRF-46/NPGCL- 2006 dated May 02, 2006, the Heat Rate of Thermal Power Station Muzaffargarh was approved by Authority on historical grounds, based upon reading of backup meters installed on Generator Terminals before transformer. The reading of energy meters installed at generator terminal were taken to calculate Net energy exported to NTDC, due to unavailability of Revenue Grade Meters at each unit after the transformer. However, as a standard practice net energy export is recorded at the outgoing gantry of power plant switchyard.

Based upon our historical data and Independent Engineers report, NPGCL requested the Authority for incorporation of 1.84% transformation & Switchyard Losses in 2015. Authority being convinced with the stance of NPGCL allowed NPGCL a margin of 0.50% as transformation & Switchyard losses on 19.10.2016 against our pray of 1.84%, by stating;

Quote

The Authority considered the submissions of the NPGCL and documentary evidence produced in support of their claim. The Authority observed that the nameplate loss in capacity mentioned by the manufacturer is 0.5%. The Authority considers that the loss beyond this is on part of NPGCL and cannot be allowed. The Authority has therefore considering the nameplate loss in capacity mentioned by the manufacturer reasonable decided to allow 0.5% of the transformer and switchyard losses to NPGCL.

Un-Quote

Pray

As the claim of NPGCL has been considered legitimate by the Authority, keeping in view the OEM provided data, it is therefore also logical that the impact of Transformer Losses may be allowed to the plants of Thermal Power Station Muzaffargarh from July 2004 to June 2014 also as regulatory gap item, as we have been suffering in FCC portion of the tariff since 2004.

7.5.5 Ambient Condition Correction Factor:

As already stated, that NEPRA has been kind enough to consider the submission of NPGCL and also acknowledged that the application of Ambient Condition Correction Factor is a standard practice and the methodology has also been shared with NEPRA on 06.05.2013 in its determination on 22.01.2016, however same was not allowed due to mere unavailability of curves of 2 units.

NPGCL has now managed to locate the curves of those two units also from the OEM manual and all the curves along-with independent Engineer's recommendation are being attached for consideration of the Auchority.

Pray

As Authority has considered the stance of NPGCL and also acknowledged that the application of ACCF is a standard practice but the impact could not get mature due to unavailability of 2 No.

curves which have now been provided by NPGCL. It is therefore requested that the impact of ACCF may be allowed w.e.f. July 2004 onward.

7.5.6 Degradation of Plant:

It is a well-known reality and proven truth that the performance of machine is directly dependent upon its aging. This has been highlighted by the Independent Engineer M/s PES in its report submitted after the performance of CDC and Heat Rate Tests of units of TPS Muzaffargarh. As per . PES, the internationally acceptable values for output degradation and heat rate deterioration for a 19-20-year-old plant are within a range of 2.5% to 3%, both for output and heat rate, which translates to 0.15% degradation of Heat Rate per year of the Plant.

Pray

As it is a standard practice of the Regulator to allow aging factor of the plants on Heat Rate, it is therefore requested that 0.15% degradation of Heat Rate may be allowed to NPGCL w.e.f July 2004 onward.

7.5.7 Impact of Delayed Heat Rate Test of TPS Muzaffargath

As stated earlier, Heat Rate of Thermal Power Station Muzaffargath was approved by Authority on historical grounds, based upon 5 years historical data of the plants. The historical based Heat Rate was granted till the performance of Heat rate Test on all plants of NPGCL.

However due to one or more reasons, NPGCL performed the tests in 2014 and same results of Heat Rate report were allowed by NEPRA after margin of 0.5% Transforme: losses. The heat rate allowed by NEPRA in 2016 is based upon LHV and are tabularized as below;

	NetHeat(Rate-Reference LHV /(BTU/kWh)
M/Garh Unit#1	10,517.00
M/Gath Unit#2	10,660.00
M/Garh Unit#3	10,291.00
M/Garh Unit#4	10,276.00
M/Gath Unit#5	10,942.00
M/Garh Unit#6	11,241.00

However; the historical Heat Rate allowed by NEPRA in 2006 are based upon HHV and are tabulated as below;

Unit#	Net Heat Rates	NEI Heat Rate-	Net: Heat, Rate-
	(2004)	(2004)	(2014)
M/Garh Unit#1	10,788.00	10,274.28	10,517.00
M/Garh Unit#2	10,788.00	10,274.28	10,660.00
M/Garh Unit#3	10,788.00	10,274.28	10,291.00
M/Garh Unit#4	10,692.00	10,182.85	10,276.00
M/Garh Unit#5	. 12,158.00	11,579.04	10,942.00
M/Garh Unit#6	12,158.00	11,579.04	11,241.00

The Heat Rate allowed after Heat Rate Test and other corrections as requested in the instant petition, is requested to be allowed from July 2004 to June 2014 as a regulatory gap item.

7.5.8 Isolation of Auxiliaries during heat rate tests

As explained above, some of the auxiliary were isolated while conducting Heat Rate test by the Independent Engineer and did not include its impact in the net Heat Rates, reported in its report. NEPRA adopted the Heat Rates worked out by the Independent Engineer in its determination of 22.01.2016. NPGCL worked out the impact of isolation of auxiliary and made request to NEPRA in Motion for Leave to Review, but NEPRA did not revise Fuel Cost Component (FCC) by making correction in Heat Rates on the ground that matter was not part of original petition. Since then NPGCL has sustained a substantial loss for less determined FCC revenue than the actual fuel cost incurred. It is therefore, requested to allow the impact of isolation of auxiliaries during heat rate tests from July 2014 to June 2019, as a regulatory gap item.

7.5.9 Fuel Stock Carrying Cost

As per terms of PPA, NPGCL is required to maintain RFO stock of 15 days. If all units are operated at full load, on average, there will be consumption of 7,827 M.T RFO in a day. Therefore, RFO stock of 117,354 M.T. for 15 day's consumption is required to be maintained by NPGCL. Due to financial constraints, NPGCL could not maintain said level of RFO, hence certain times could not comply to the dispatch request of NPCC due to shortage of RFO stock. The NPCC terms said outage as forced outage during 2015-16 and 2016-17 and the CPPA-G has accordingly imposed LDs for FY 2015-16 and 2016-17 for failure to dispatch of the M/Garh power plant on this account.

As NEPRA has never allowed fuel stock carrying cost to NPGCL, for which NPGCL has sustained losses in terms of financial charges and LDs imposed by power purchaser on account of forced shutdown due to unavailability of fuel, therefore it is requested to allow NPGCL fuel stock carrying cost for TPS Muzaffargarh, NGPS Multan and SPS Faisalabad for the period from July 2004. onwards.

Section 8 Indexations and Pass through Items

8.1 Escalable Cost Component of CPP

8.1.1 Establishment cost

The Establishment Cost Component of the Capacity Purchase Price shall be adjusted against variation in the rate of annual increase made by Federal Government in Pay & Pension as per the following formula:

EstabC (Rev):	EstabC (Current) * Increase % age Annual Increment (Rev) * Increase % age GoP (Rev)
Where:	·
EstabC (Rev):	Revised applicable Establishment Cost Component of the Capacity Purchase Price
EstabC (Current):	Current Establishment Cost Component of the Capacity Purchase Price
Increase % Annual Increment (Rev):	Revised Percentage of Pay & Pension due to annual increment
Increase % GoP (Rev):	Revised Percentage of Pay & Pension granted by GoP from time to time
Additionally, authority benefit after the age of 7	is requested to allow the pass through of increase in pension 2 years and free electricity to the employees

8.1.2 Other Escalable Components

The other Escalable Cost Component of the Capacity Purchase Price shall be adjusted quarterly against variation in the quarterly Consumer Price Index (CPI) as per the following formula:

EC (Rev):	EC (Ref) * CPI (Rev) / CPI(Ref)
Where:	
EC (Rev):	Revised applicable Escalable Cost Component of the Capacity Purchase Price
EC (Ref):	Reference Escalable Cost Component of the Capacity Purchase Price
CPI (Rev):	Revised Consumer Price Index
CPI (Ref):	Reference Consumer Price Index

Additionally, foreign Escalable components of capacity charge shall be adjusted with exchange rate and US CP1

Fixed O&M-F (Rev):	Fixed O&M-F (Ref) * USCPI (REV)/ USCPI (Ref) * ER (Rev)/ER (Ref)
Where:	
Fixed O&M-F (Rev):	The revised applicable Fixed O&M foreign component of tariff indexed with US CPI and exchange rate variation
Fixed O&M-F (Ref):	Reference applicable Fixed F O&M Cost Component
USCPI(Rev):	Revised US Consumer Price Index
USCPI(Ref):	Reference US Consumer Price Index
ER(Rev):	Revised Exchange rate notified by State Bank of Pakistan
ER(Ref):	Exchange rate PKR 121.6 per USD

8.2 Variable O&M Cost Component of Energy Purchase Price

Similarly, the indexation of the variable O&M Cost Component of the EPP will be carried out pursuant to the following formula:

Variable O&M-L (Rev):	Variable O&M-L (Ref) * CPI (Rev)/ CPI (Ref) .
Variable O&M-F (Rev):	Variable O&M-F (Ref) * USCPI (REV)/ USCPI (Ref) * ER (Rev)/ER (Ref)
Where:	
Variable O&M-L (Rev):	The revised applicable Variable O&M local component of tariff indexed with local CPI.
Variable O&M-F (Rev):	The revised applicable Variable O&M foreign component of tariff indexed with US CPI and exchange rate variation
Variable O&M-L (Ref):	Reference applicable Variable O&M Local Cost Component
Variable O&M-F (Ref):	Reference applicable Variable O&M Foreign Cost Component
CPI (Rev):	Revised Consumer Price Index
CPI (Ref):	Reference Consumer Price Index
USCPI(Rev):	Revised US Consumer Price Index
USCPI(Ref):	Reference US Consumer Price Index
ER(Rev):	Revised Exchange rate notified by State Bank of Pakistan
ER(Ref):	Exchange rate PKR 121.6 per USD

8.3 Fuel Cost Component(s)

The Fuel Cost Component of the Energy Purchase Price will be adjusted against the variation in the fuel prices as and when revised by the relevant Authority as per the following formula:

FCC (Rev):	FCC (Ref) * FP (Rev) /FP(Ref)
•Where:	
FCC (Rev):	The applicable Fuel Cost Component as revised in accordance with the revised fuel price.
FCC (Ref):	The Fuel Cost Component: as indicated in the reference tariff or that adjusted pursuant to the heat rate tests
FP (Rev):	The HHV fuel price as notified by the relevant Authority per unit of fuel (residual fuel oil, and RLNG/natural gas)
FP (Ref):	The reference HHV fuel price per unit of fuel (residual fuel oil, and RLNG/natural gas)

8.4 Pass through Items

In addition to the financial impact of the technical parameters elaborated in this document, this tariff takes into account the following general assumptions;

- i. Any taxes on any income of the Company, including taxes on sale proceeds from CPPA-G, general sales tax and all other corporate taxes shall be treated as pass-through.
- ii. Withholding tax on supply of plant & equipment or spares has been assumed at zero.
- iii. The Company has not assumed any costs that may be incurred for the Worker's Welfare Fund or Workers Profit Participatory Fund. Any such costs shall be considered as passthrough items as per terms and conditions of the PPA.
- iv. It has been assumed that any benefits, concessions or incentives made available to other Independent Power Producers (IPPs) or projects, shall also be made available to the Company.
- v. The adjustment on account of variation in calorific value will be allowed as per the following mechanism:
 - a. The reference CV will be 18364 Btu/lb. There will however be no adjustment below the minimum limit of 18200 Btu/lb.
 - b. NPGCL shall maintain and submit, annually a detailed record of consignment wise CV of the oil received and consumed for power generation for the adjustment on account of variation against the reference calorific value duly supported with the copies of test reports certified by the fuel supplier.
- vi. The start-up cost will be in line with the Independent Power Producers and separate invoice will be raised based on actual cost in accordance with the Power Purchase Agreement.
- vii. The cost of partial loading will be claimed, applying the correction factor as provided at para 12.5 of NEPRA's determination dated 22.01.2016.

Any additional costs incurred to cater for modification or additions required by the Power Purchaser including prudently incurred costs on account of Heat Rate tests and replacement of CDP meters along with primary elements.

ix. Any changes in these assumptions shall result in a change to the tariff proposed in this document.

viii.

Section 9 Use of System Charges

r 9.1 Energy Block# 7 NGPS Piranghaib Multan

The NTDCL has been using switchyard of NGPS Piranghaib Multan to serve different feeders for . transmission of electricity. The Authority vide its letter no. NEPRA /R/LAG-03/3943-49 dated April 18, 2014 modified Generation License (GL/03/2002) and decided to decommission Unit 1, 3 & 4 of Block 7 NPGS, Piranghaib Multan. NPGCL has been maintaining this switchyard, however it is temporarily handed over to NTDC as decided by the Ministry of Energy (Power Division) through letter No GPI-1 (47)/2012 dated 4th Jan 2019 for one month for proper maintenance. Even after expiry of one month, the NTDC is still maintaining said switchyard and raising claim on NPGCL for the maintenance charges. After discontinuation of power plant, the switchyard of Piranghaib is of no use of NPGCL, therefore, it is more logical to be handed over to NTDC permanently. However, the NTDC may pay consideration price at fair value to NPGCL. In order to ensure operations of switchyard of NGPS Multan for smooth transmission of electricity by NTDC, a minimum manpower, equipment, Auxiliary consumption etc. has been deployed by NPGCL, which if withdrawn will affect operation of NTDC in proper dispatch of the electricity to the system. The Authority is hereby requested to approve the Use of System charges to meet with the operating expenses being incurred by NPGCL, until switchyard is permanently handed over to NTDC for operation and maintenance. The detail of power transmitted during FY 2016-17 to FY 2018-19 has been shown in the table.

Financial Year	Power Import (GWh)	Power Export (GWh)
2016-17	1,392.7	1,375.5
2017-18	1,547.7	1,486.0
2018-19	1,288.4	1,177.4

The Company therefore requests NEPRA to allow compensation to NPGCL on account of system usage charges for the interim period until NTDCL takeover the system permanently by paying agreed consideration price.

9.2 GTPS Faisalabad

In addition to power evacuation of GTPS Faisalabad, the switchyard of GTPS Faisalabad is also being used by NTDC/FESCO for dispersal of power in the local area being injected from other sources. NTDC has not installed energy/ revenue meters at the busbars of generating units of GTPS Faisalabad, hence owing to inclusion of switchyard transmission loss in the net electrical output of GTPS Faisalabad, NPGCL has to incur more fuel cost than the FCC allowed by NEPRA. The import and export data shown in the table below indicates that import of power to the export of power from switchyard of GTPS Faisalabad works out as 46% and 34% during FY 2017-18 and FY 2018-19 respectively.

Financial Year	Power Import (GWh).	Power Export (GWh)	Imports to Export Ratio
2017-18	86.608	190.246	46%
2018-19	75.205	222.622	34%

In view of the above, the Authority is hereby requested to direct NTDC to install energy meters at the busbar of the generating units of GTPS Faisalabad and approve the Use of System charges to meet with the operating expenses being incurred by NPGCL, until switchyard is permanently

handed over to NTDC/ FESCO to own, operate & maintain and energy meters are installed at busbars of the generating units of GTPS Faisalabad.

9.3 TPS Muzaffargarh

The NTDCL has been using switchyard of TPS Muzaffargarh to serve 15 different feeders for transmission of electricity. In compliance of directions of NEPRA made through letter NEPRA/DG(M&E)/LAG-3/ 9064-67 dated 27.05.2019 for handing/ taking over of 220 kV Switchyard of TPS Muzaffargarh, NPGCL has constituted a committee vide letter dated 19.06.2019. NPGCL held number of meetings with NTDC without fruitful results.

At present, monthly joint Energy meter reading is recorded at the meters installed on the 15 Nos. outgoing/incoming feeders which are connected /routed through the 220KV switch yard. The import and export energy readings of all above feeders are recorded and Net export of TPS Muzaffargarh is calculated as follows;

Net Electrical Output of TPS M-Garh = Total Export Energy-Total Import Energy

The detail of power transmitted during FY 2017-18and FY 2018-19 has been shown in the table.

Financial Year	Power Imports (GWh)	Power Export (GWh)	M/Garh (GWh)	Import to export ratio (%)
2017-18	4,311.5	7,341.4	3,029.9	59%
2018-19	5,551.2	6,378.5	827.3	87%

The Company therefore request NEPRA to direct NTDC to install energy meters at busbar of TPS Muzaffargath and allow compensation to NPGCL on account of system usage charges for the interim period until NTDC takes over the system permanently by paying agreed consideration price.

In accordance with the decision of the Authority in the matter of LESCO, the LESCO is allowed to charge the user of its system a "Use of system charge" (UOSC) equal to:

iii) Where Both 132 kV and 11kV distribution system are Involved

UOSC= DM(Gross) x $\frac{(1-L)}{(1-0.06)}$ x AFI(TD) Paisa / kWh

Where:

Gross Distribution Margin for FY 2015-16 is set at Rs. 1.51/kWh (without excluding impact of other income)

'L' is the overall percentage loss assessment for the respective year.

AFI(TD) = Adjustment factor for investment at both 132kV & 11kV level i.e. 76%."

It is therefore requested to the Authority to determine use of switchyard charges for NGPS Multan, GTPS Faisalabad and TPS Muzaffargarh on similar pattern allowed to LESCO and other Discos in their tariff determinations.

Section 10 Determination Sought

The learned Authority is kindly requested to approve the Company's generation tariff, along-with
the pertinent indexations, in accordance with the parameters & assumptions mentioned above. The
Petitioner would be pleased to provide any further information, clarification, or explanation that may be required by the Authority during its evaluation process.

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Annexures and Appendices

A. Schedule of Annexures

- 1. Bank Draft bearing No. BBB-13311866 drawn on Allied Bank Limited Muzaffargarh dated 22.11.2019 for Rs. 1,663,581 after deduction of Income Tax Rs. 144,652 @ 8%, as tariff petition filing fee.
- 2. Copy of BOD resolution approving filing of tariff petition in NEPRA.
- 3. Affidavit signed by Engr. Sabeeh-Uz-Zaman Faruqui, Chief Executive Officer of NPGCL.

B. Schedule of Appendices

- 1. Auditéd Financial Statements of NPGCL for FY 2017-18 & FY 2018-19
- 2. Actuarial valuation report for FY 2018-19
- 3. Letter dated 28.01.2015 from Independent Engineer for impact of Ambient Condition Correction Factor (ACCF)
- 4. ACCF OEM Provided Curves for all 6 units of TPS Muzaffargath
- 5. Working on isolation of Auxiliary
- 6. Working of yearly charge of capital redemption
- 7. Executive summary of CDC and Heat Rate Test report by M/s PES 2013
- 8. Copies of LDs Invoices of CPPA-G for FY 2015-16 and 2016-17.
- 9. Copy of letter dated 15th Apr. 2016 of NPCC terming standby status of units on account of fuel shortage is considered under forced outage category.
- 10. Notifications of Finance Division for increase in pay and pension of federal government employees for 2014-15 to 2018-19.

Note: Copies of appendices are contained in the separate folder.