



Registrar

National Electric Power Regulatory Authority

Islamic Republic of Pakistan

2nd Floor, OPF Building, G-5/2, Islamabad
Ph: 051-9206500, 9207200, Fax: 9210215
E-mail: registrar@nepra.org.pk

No. NEPRA/TRF-209/OPCL-2012/2999-3001
March 29, 2013

Subject: Decision of the Authority in the matter of Petition filed by Orient Power Company Ltd. (OPCL) for Revision / Modification of the Generation Tariff

Dear Sir,

Enclosed please find herewith the Decision of the Authority (21 pages) in the matter of petition filed by Orient Power Company Ltd. for revision / modification of the generation tariff, for information.

Encl: As above

(Syed Safeer Hussain)

Secretary
Ministry of Water & Power
'A' Block, Pak Secretariat
Islamabad

CC:

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



**NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
(NEPRA)**

PETITION NO: NEPRA/TRF-209/OPCL-2012

**DECISION OF THE AUTHORITY
IN THE MATTER OF PETITION FILED BY
ORIENT POWER COMPANY LIMITED (OPCL)
FOR
REVISION / MODIFICATION OF THE GENERATION TARIFF**

ISLAMABAD

March²⁹, 2013



**DECISION OF THE AUTHORITY IN THE MATTER OF PETITION FILED BY
ORIENT POWER COMPANY LIMITED (OPCL) FOR REVISION / MODIFICATION OF
GENERATION TARIFF**

CASE NO. NEPRA/TRF-209/OPCL-2012

PETITIONER

Orient Power Company Limited (OPCL), 10-Ali Block, New Garden Town, Lahore

INTERVENER

Nil.

COMMENTATOR

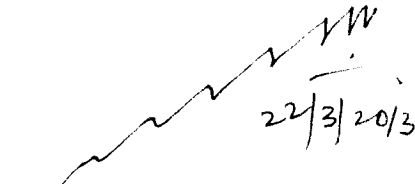
Nil.

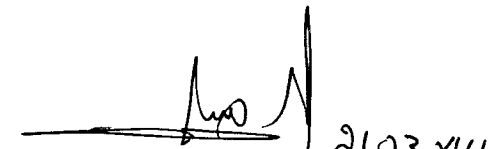
REPRESENTATION

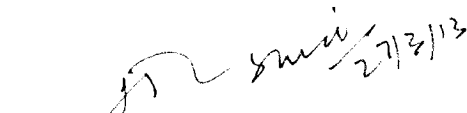
1. Mr. Khashif Bashir Rana, CFO as Representative of Power Purchaser
2. Mr. Javed Iqbal Consultant of Ministry of Water & Power
3. Mr. Tariq Mansoor, Representative of Central Power Purchasing Agency
4. Mr. Abdul Hayee, Representative of IESCO
5. Raja Usman from Samaa TV




The Authority, in exercise of the powers conferred on it under Section 7(3) (a) read with Section 31 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 and Rule 16 of NEPRA Tariff Standards and Procedure Rules, 1998 and all other powers enabling it in this behalf, and after taking into consideration all the submissions made by the parties, issues raised, evidence/record produced during hearings, and all other relevant material, hereby issues this decision.



(Habibullah Khilji)
Member


(Khawaja Muhammad Naeem)
Member

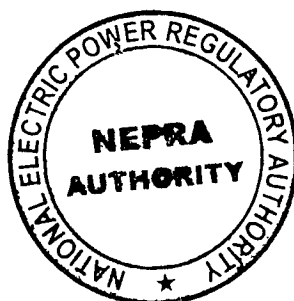

(Major Rtd. Haroon Rashid)
Member


(Shaukat Ali Kundi)
Vice Chairman




29.3.13

- 1.1 Orient Power Company Ltd. (OPCL) hereinafter referred as “the Petitioner” vide letter dated 3-7-2012, submitted the subject tariff petition in pursuance of Section 31 of the NEPRA Act read with Rule 3 of NEPRA (Tariff Standards and Procedure) Rules, 1998, for revision/modification of the Generation Tariff Decision dated 12th January 2012 read with Corrigendum dated 23rd April 2012.
- 1.2 The Petitioner stated that the Company’s operations, its rights and obligations are governed by the Implementation Agreement (IA) dated 10th November 2006, Power Purchase Agreement (PPA) dated 8th November 2006, Gas Supply Agreement (GSA) dated 18th October 2006 and Fuel Supply Agreement (FSA) dated 30th November 2006. The Petitioner stated that the aforementioned documents are structured and were executed based upon the Guidelines of the Power Generation policy of the Government of Pakistan 2002. The Petitioner further submitted that the tariff determination for the Company is issued in the light of 2002 policy, NEPRA Act & Rules and such tariff determination also takes into account the provisions of the above core agreements. According to the Petitioner, under the 2002 Policy Guidelines and with special reference to Guidelines for Tariff Determination, Section 1.4 (a) states;
- “Tariff should be determined allowing reasonable Internal Rate of Returns (IRR) on equity investment”*
- 1.3 Section 1.13 continues to say;
- “As fuel cost is a pass through, prices of different fuels e.g gas, oil, coal, etc., tend to distort the evaluation. Therefore, levelized tariff be evaluated on the basis of capacity purchase price, efficiency (taking into account fuel cost) and O&M costs.”*
- 1.4 Therefore, as Authority has already determined the IRR for the Company, any additional operations cost for the Company in current operation regime that is imposed by an external situation (relating to GOP) and is beyond Company’s control and is not covered under the existing tariff determination for the Company is a pass through item and needs to be treated as such to ensure that Company’s determined IRR is not diluted. According to the Petitioner, the revised tariff petition is submitted on the basis of Amended Operating Regime as authorized by the Economic Coordination Committee (ECC) of GoP which requires changes in tariff component of energy. The Petitioner has also enclosed a copy of PPIB letter no. 1(102)PPIB/11/PRJ dated July 15, 2011 which contained the aforementioned ECC Decision dated 30.06.2011 which is reproduced as under:
- i. Firm gas allocation of 76 MMCFD to IPPs namely Saif, Sapphire, Orient and Halmore till 30th November 2011.
 - ii. Cost differential on account of use of alternate fuel (HSD) by the four IPPs should be equally shared by the SNGPL and the Government; and





- iii. Modification of Tariff by NEPRA allowing operation of gas based IPPs on backup fuel (HSD) with full cost recovery for whatever period gas was not made available to them."

1.5 The Petitioner has requested the Authority for the following:

- i) Adjustment on HSD O&M variable component to make it 2.39 times the cost of O&M Gas component as against existing cost factor of 1.64 times.
- ii) HSD heat rate test after each major maintenance
- iii) Specific gravity of HSD fuel may be adjusted to reflect the actual position
- iv) Adjustment for item No. 1 and 3 may be made effective from 1st July 2011.

2. PROCEEDINGS

In terms of rule 4 of the Tariff Standards and Procedure Rules 1998 (hereinafter referred to as "Rules"), the Petition was considered by the Authority. In order to arrive at a just and informed decision, the Authority while admitting the petition also decided to conduct a hearing into the matter on September 11, 2012. In terms of the provisions of rules 5 of the Rules, notice of admission and hearing along with the title and brief description of the petition was published on 19th August 2012 in the leading newspapers. Individual notices were also sent to the major stakeholders.

3. Filing of Objections/ Comments:

Comments/replies and filing of intervention petition was desired by any interested/affected person/parties within 7 days of the publication. In response thereof, no intervention request or comments were received.

4. Hearing

The hearing was conducted on September 11, 2012 at NEPRA Headquarter, Islamabad. During the hearing, CFO of the Petitioner, representatives of SPL, HPGCL along with financial and technical team presented its case. Power Purchaser, representatives of Ministry of Water & Power and other stakeholders also participated in the hearing. During the hearing the representatives of Ministry of Water & Power gave oral comments. The representative of Ministry of Water & Power was directed to submit written comments for consideration of the Authority.

5. Comments filed by Ministry of Water & Power on the Subject matter

5.1 Ministry of Water & Power vide letter No. PI-Tariff/OSH/2012 (received on 20th December 2012) submitted the following:

- The heat rate of the IPPs should be determined at Commercial Operation Date (COD) and each year thereafter as per regulatory practice. Moreover the rights and





obligations of the parties are governed in accordance with the PPA, duly approved by NEPRA.

- Adjustment of specific gravity of oil may only be considered by the NEPRA if the same allowance has been given to the other IPPs of similar technology.
- The aforesaid aspects are to be determined under and in accordance with NEPRA Act, Rules and Regulations.
- Since CPPA / NTDC is the power purchaser therefore its comments should be duly recorded and furthermore to protect the consumer interest, open hearing should be conducted.

6. Based upon the pleadings, comments of stakeholders and other relevant facts and circumstances of the case, following issues have been framed for discussion, consideration and decision of the Authority:

- O&M cost on HSD operation
- Heat rate test after each major maintenance
- Adjustment of specific gravity of HSD

7. **O&M Cost on HSD Operation**

7.1 According to the Petitioner, tariff determined by NEPRA for the Company at COD is as follows:

Component on Gas	=	Rs. 0.1459/kWh
Component on HSD	=	Rs. 0.2392/kWh

7.2 The Petitioner stated that HSD cost component is 1.64 times of the cost of the gas component while in reality and on actual basis the HSD component needs to be 2.39 times the cost component of gas. The above tariff is at exchange rate of Rs. 80.5/US\$ and US CPI of 212.709. The comparison of the above tariff with other gas based IPPs at same reference indices is as follows:

IPP	VOM Gas Rs./kWh	VOM HSD Rs./kWh
Saif Power	0.1746	0.2520
Sapphire	0.1748	0.2520
Halmore	0.1746	0.2520
Orient	0.0990	0.1623

7.3 The Petitioner stated that original higher cost of O&M during operations on liquid fuel was requested which was supported by submission of vendor documents showing that during operation of liquid fuel, higher O&M cost is incurred, with a multiplier ranging from 1.5x to



2.0x. This results in increase of Factored Fired Hours (and hence operations costs) in the case of HSD operation by a multiplier of 1.5x, as already evidenced by the O&M contract submitted to the Authority as part of the True Up process. However, the Authority denied the full cost impact in its latest true up determination dated 12th January 2012 and allowed Rs. 0.2392/kWh at the then indices or Rs. 0.1623/kWh. The allowed tariff on HSD is still less than 0.0897/kWh. The tariff allowed was based on the average three other IPPs. However as the base number in the case of the Petitioner was lower, therefore the resultant tariff on HSD also resulted in lower number as compared to others. The Petitioner referred the relevant clause 5.3(b) of O&M contract according to which:

"a monthly variable charge of Ninety Five United States Dollars as Sixty Cents (\$95.60) per Factored Fired hour per gas turbine Covered Unit. One hour of operation on natural gas shall be treated as one Factored Fired hour while one hour of operation on High Speed Diesel shall be treated as 1.5 Factored Fired Hours. If either gas turbine Covered Unit runs more than 1450 hours but less than, or equal to 2900 hours in a year on high speed diesel, then variable charge shall be One Hundred Fifteen United States Dollars (US\$ 115.00) per FFH per gas turbine Covered Unit for every hour of high speed diesel operation in excess of 1450 hours of per gas turbine Covered Unit in a year. If either gas turbine Covered Unit runs more than 2900 hours in a year on high speed diesel, then the variable charge shall be one hundred and twenty five United States Dollars (\$125.0) per FFH per gas turbine Covered Unit for every hour of high speed diesel operation in excess of 2900 hours per gas turbine Covered Unit in a year."

7.4 The Petitioner stated that as per above clause, one hour operation on gas fuel is equal to 1 factored 3 As per the above clause, one hour of operation on gas fuel is equal to 1 factored fired hour and one hour of operation on high speed diesel is equal to 1.5 factored fired hours. So essentially what this factor does is that it increases the cost by 1.5 times as compared to gas. Secondly in addition to multiplying factor of 1.5, the cost per FFH on HSD operations is also higher as compared to gas as mentioned above. This factor works out to 1.59 times of gas cost/FFH. The factor of 1.59 times is higher as compared to others as the base number for gas is lower in case of Orient as compared to others. This means the cost to the Company on HSD is $1.59 \times 1.5 = 2.39$ times the cost of Gas component as against the existing factor of 1.64 times allowed by NEPRA. Since the existing tariff is based on Orient functioning on gas for 9 months and on HSD for 3 months, therefore, Orient appeals to the Authority to adjust the HSD O&M Variable cost to 2.39 times the cost of the Gas O&M variable component.

7.5 The Petitioner referred the Section 5.7 of the Implementation Agreement which states that;



"High Speed Diesel Cost Recovery after 30th June 2011"

- a) *If prior to June 30, 2010 the Gas Allocation for the firm delivery of Gas (as defined in the Gas Supply Agreement) during nine (9) Months of each Year will expire or shall materially reduce in duration within the following twelve (12) Months (the "Pre-Expiry Period") and (i) the firm delivery period in the Gas Allocation has not been extended for not less than nine (9) Months in each Year and a period of not less than twenty-four (24) Months so that the Company will be able to continue to operate the Complex on Gas in a manner consistent with its existing Tariff Approval or (ij) the Tariff Approval and Schedule I to the Power Purchase Agreement have not been modified or amended in a manner that will allow the Company to recover under the Tariff the cost of operating the Complex using additional quantities of high speed diesel during the extended non-firm Gas delivery periods, the GOP and the Company shall meet within ten (10) Business Days of the beginning of the Pre-Expiry Period and continue to meet at reasonable intervals until the Parties have agreed a mechanism reasonably acceptable to the Parties that will compensate the Company to the extent that the performance of the Company under the Power Purchase Agreement is consistent with the Complex performance requirements (i.e. the heat rate, as provided for in Annex-III of Schedule I of the Power Purchase Agreement as well as the generation capacity), for using additional high speed diesel fuel and for any additional Fixed and Variable O&M Component (as defined in the Power Purchase Agreement) costs if any, based on relevant NEPRA determinations and equipment manufacturer's guidelines. The mechanism for such compensation may include an approval from NEPRA for the recovery of the cost of additional quantities of high speed diesel fuel and the reasonable additional operation and maintenance expense of operating on high speed diesel during the extended non-firm Gas delivery periods.*
- (b) *Unless the Gas Allocation has been extended or the Tariff Approval and Schedule-I to the Power Purchase Agreement have been modified or amended as provided in Section 5.7(a), such mechanism, as agreed by the Company and the GOP, shall be put into effect prior to the end of the Pre-Expiry period.*
- (c) *If by the date that is five (5) Business Days prior to the end of the Pre-Expiry Period, the Parties have not agreed on the mechanism which will compensate the Company for the continued operation of the Complex or the Gas Allocation has not been extended or the Power Purchase Agreement has not been modified or amended as provided for in Section 5.7(a), either Party may terminate this Agreement by giving thirty (30) days prior notice to the other Party. Upon termination of this Agreement following the delivery of such notice, the Power Purchase Agreement shall immediately terminate and the provisions of Section 14.5 and Section 14.6 and the Article XV shall apply."*

7.6 The Petitioner stated that in the backdrop of Section 5.7 of the IA, various communications were exchanged between GOP and the IPPs. Eventually, a summary was moved to the ECC





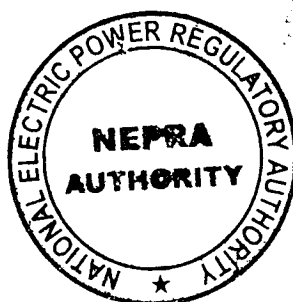
for a decision on this subject. The ECC gave its decision on June 30, 2011 which was communicated to the Company by PPIB through its letter no.1 (102) PPIB-1028/11/PR dated July 14, 2011. According to the Petitioner, ECC decision means::

- Gas allocation to IPPs has been cut by half so that instead of 152 MMCFD, the IPPs will now get only 76 MMCFD and, as such, they will run partly on Gas and partly on HSD till November 30, 2011.
- ECC also decided to continue with the existing terms of the GSA wherein if the Gas Supplier was not able to provide even 76 MMCFD for any reason, then the cost of using HSD will be shared evenly between GOP and SNGPL.
- ECC also emphasized that this situation requires a modification of the Tariff from NEPRA and that the IPPs should be able to operate in HSD regime with full cost recovery beyond June 2011 for whatever indefinite period gas is not made available to the IPPs.

7.7 As per the Petitioner, ECC upheld Section 5.7 of the IA which makes the same statement and emphasizes that IPPs be allowed full compensation to run under this regime beyond June 2011. In other words, current tariff structure where Complex is supposed to run on nine months on Gas and three months on HSD is being amended/changed so that Complex may run on HSD for unlimited periods when full Gas supply is not made available, Therefore, Tariff modification is required to ensure that Company recovers its full cost in this new regime.

7.8 The Petitioner requested the Authority to adjust HSD O&M variable cost to 2.39 times the cost of gas O&M variable component as against existing cost factor of 1.64 times. As per Clause 5.3 of O&M contract

"a monthly variable charge of Ninety Five United States Dollars as Sixty Cents (\$95.60) per Factored Fired hour per gas turbine Covered Unit. One hour of operation on natural gas shall be treated as one Factored Fired hour while one hour of operation on High Speed Diesel shall be treated as 1.5 Factored Fired Hours. If either gas turbine Covered Unit runs more than 1450 hours but less than, or equal to 2900 hours in a year on high speed diesel, then variable charge shall be One Hundred Fifteen United States Dollars (US\$ 115.00) per FFH per gas turbine Covered Unit for every hour of high speed diesel operation in excess of 1450 hours of per gas turbine Covered Unit in a year. If either gas turbine Covered Unit runs more than 2900 hours in a year on high speed diesel, then the variable charge shall be one hundred and twenty five United States Dollars(\$125.0) per FFH per gas turbine Covered Unit for every hour of high speed diesel operation in excess of 2900 hours per gas turbine Covered Unit in a year."



<i>Cumulative FFH Payment Trigger</i>	<i>Payment</i>	<i>Cumulative FFH Payment Trigger</i>	<i>Payment</i>
Cover Unit 1		Covered Unit 2	
20,000	\$ 1,000,000	20,000	1,000,000
44,000	2,000,000	44,000	2,000,000
68,000	1,000,000	68,000	1,000,000
92,000	2,000,000	92,000	2,000,000
118,000	1,000,000	118,000	1,000,000
140,000	2,000,000	140,000	2,000,000

7.9 The Petitioner requested the Authority to adjust HSD O&M variable cost to 2.39 times the cost of gas O&M variable component.

7.10 Comments of the Power Purchaser

7.10.1 On the issue of revision of the O&M cost on HSD operation, the power purchaser raised oral objections during the course of hearing. The Authority directed the Power purchaser to submit written objection to the Petitioner for response along with copy to NEPRA. The Power Purchaser vide letter No. COO (CPPA)/Dir (Tech-I)/OPCL/8147-48 dated 13th September 2012:

- Service fee of the O&M Operator on kWh basis for day to day management of the plant.
- Replacement of spare parts on completion of service life of such parts as well as replacement of permanent failure of parts.
- Cost of unscheduled maintenances which is separate from major overhaul.
- Consumption of lubricants
- Water Treatment
- Chemicals

Pursuant to decision of the Authority in the matter of tariff determination dated 1st September 2006 with respect to HPGCL for Variable O&M component is as follows:

- VO&M Component on Gas = Rs. 0.1459 /kWh.
- VO&M Component on HSD = Rs. 0.2392 /kWh.

Annual amount to be paid by the power purchaser to the Company through VO&M with 92% plant availability and exchange rate of 1 US\$ = 80.50/-

- VO&M cost of gas operation (9 months) = US\$ 2.330 million
- VO&M cost of HSD operation (3 month) = US\$ 1.273 million





Amount to be paid annually by the Power Purchaser to the Company for maintenance cycle as per PPA is US\$ 21.621 million.

A) For extended operation on HSD (suppose 50% of time) the cost which the Company will recover

- i) VO&M cost of gas operation = US\$ 1.553 million
- ii) VO&M cost of HSD operation = US\$ 2.547 million

Amount to be paid annually by the power purchaser to the Company for maintenance cycle as per PPA is US\$ 24.601 million.

B) For 100% HSD operation of plant with 92% of plant availability and exchange rate of 1 US\$ = 80.50/-

Annual amount of VO&M to be paid by the Power Purchaser to the Company is US\$ 5.094 million.

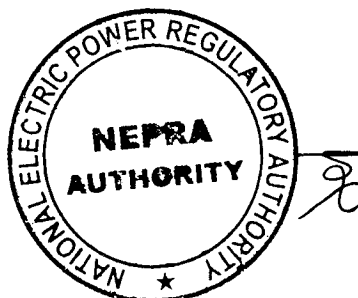
7.10.2 Total VO&M payment to be made by the Power Purchaser to the Company for maintenance cycle as per PPA is = US \$ 30.561 Million.

7.10.3 Keeping in view the above, NTDC / CPPA believes that any upward revision (i.e. Rs. 0.3487/kWh) as demanded by the Company is not justified as the Company is fully recovering its cost for VO&M through already awarded tariff.

7.11 The Petitioner's response w.r.t Comments of the Power Purchaser

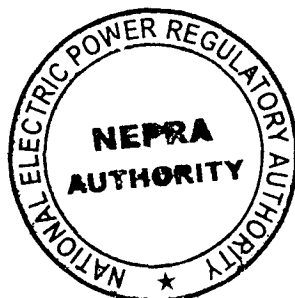
7.11.1 The Petitioner in response to the objections raised by the Power Purchaser stated that brief background of the case needs to be clarified before responding to the comments of the Power Purchaser. According to the Petitioner:

- The Implementation Agreement envisaged that Gas may not be available beyond June 2011 and, if this were to happen, the Implementation Agreement authorizes the parties to operate the Complex using High Speed Diesel beyond ninety (90) days in a year through a mechanism which will compensate the company for the continued operation of the Complex. (Authority may kindly read our petition pages under headings of "Basic Facts" and "Provisions of the Agreement");
- As a matter of fact, NEPRA's own tariff determination for the Company states that it is based on 9 + 3 operating regime. This means that the assumption is already built in, that the tariff would need to be changed for an operating regime where gas allocation is not extended use of HSD. OPCL is also of the view that tariff adjustment on the basis of above is well within the jurisdiction of the Authority under the NEPRA Act & Rules;
- The ECC decision has simply reinforced this implementation process as given in the



Implementation Agreement and directs "Modification of Tariff by NEPRA allowing operation of gas based IPPs on backup fuel (HSD), with full cost recovery, for whatever period gas was not made available to them".

- 7.11.2 The Petitioner further stated that the Power Purchaser does not have the background of the O&M Tariff allocated to the Company by the Authority; such Tariff was determined bilaterally between Company and the Authority. The assertions made by the Power Purchaser are misleading and contrary to the facts. The actual facts are as follows:
- 7.11.3 In its arguments, CPPA has only looked at the revenue side of variable O&M cost in isolation without any regard to the variable O&M or O&M revenue and O&M cost in totality and have then gone on to justify reasonableness of the variable O&M at COD. Secondly it has also totally ignored the fact that present tariff petition is based on changed operating regime for extended HSD operation, which was not incorporated in the original tariff determination. Taking the position that the tariff determined for nine months of operations on gas and three months operation on HSD, is also good enough for extended period of HSD operation and to recover the incremental costs, at best is imaginary on the part of the power purchaser.
- 7.11.4 When the regime is changed and operations on HSD are done throughout the year, this loss increases substantially and company is looking to recover this increased cost caused by the change in regime. While the Company's total revenues in the O&M area are already negative as against such total costs (even if such loss is one dollar only), then it is a simple arithmetic and economics rule that any incremental cost not covered 100 percent by offsetting revenue, would further increase the losses. For example, if Company is getting revenue of 1.64 a unit and is paying a cost that has a factor of 2.39, it is obvious that with every increase of dispatch on HSD beyond envisaged originally, the absolute costs to the Company would further increase and the negative margin would further widen.
- 7.11.5 At the same time, it may be noted that Company's request for increase in HSD O&M Variable component would be applicable on the actual dispatch only i.e. if the Complex is run only 20% on HSD, only 20% of the HSD variable component would be applicable during the year in terms of absolute figures; similarly, if 40% dispatch is done, only 40% of the component would apply in a year for absolute value purposes. So while the number may look deceptive on paper, it would be lower in absolute terms depending on dispatch levels.
- 7.11.6 With reference to above presentation about total costs and total revenue, we would also like to highlight that certain aspects and certain costs factors have been conveniently ignored by the Power Purchaser. For example; (a) negative variation in indexation (difference of what is paid to Company through tariff and what company has to pay to operator); (b) grossing up of withholding tax on payments to Operator as per OMS&A; (c) Import duties and clearance charges on spare parts which are also of substantial amounts; (d) out of scope items and items





with annual monetary caps for unscheduled maintenance; (e) certain bonuses (indexed) to be paid to operator; (f) import of electricity etc.

7.11.7 Power Purchaser has mentioned in points 1 A) and 1 B) the amounts to be paid annually to the Company by the Power Purchaser. However, what the Power Purchaser has ignored is the incremental cost of running HSD operations at 50% and 100%. On top of (a) the routine incremental costs including consumables spares and consumables lubricants etc, the overhauling costs (b) are doubled due to the fact that operations on HSD speeds up the major overhauling maintenance cycle from around 6 years to around 3.5 years. This also means that Combustion inspections, Hot Gas path inspections and other inspections are also more frequent. The Operator/Contractor recovers both of these costs on the basis of FFH after applying the factor of 1.5 on HSD and through higher variable O&M fee on HSD as compared to Gas.

7.11.8 The requested factor of 2.39 needs to be explained further. As per O&M agreement, the rate of US\$ 95.6 applies up to the first 1,450 hours, US\$ 115/FFH between hours exceeding 1450 but up to 2900 hours and then a rate of US\$ 125/FFH applies to hours in excess of 2900 hours in a year. The factor of the 2.39 is explained in the following calculations;

US\$

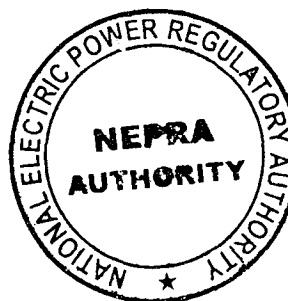
Variable cost / FFH / GT (Base) with tax grossing up as per OMS&A	134.38
Event based cost / FFH / GT (Base) with tax grossing up as per OMS&A	70.40
Other variable costs / FFH / GT (backfeed, duties, transportation, insurance etc. on spares)	75.05
Total Variable Cost / FFH GT	279.82

US\$

US Cents Variable Cost / kWh (At reference rate of PKR 60)	\$ 0.3947
PKR variable cost / kWh	PKR 0.2368
PKR Variable cost / kWh as allowed by NEPRA (Reference)	0.0990
Total Variable Cost / FFH GT	2.39

Note: The above calculations are at reference exchange rate of PKR 60.

7.11.9 However in order to fully explain the numbers, the scenarios presented in the CPPA letter have been expanded to include cost comparison also for variable O&M. As the revenue and indexation used by CPPA are at COD therefore the O&M variable costs as on COD has been used i.e. after applying the applicable indexation factor of 1.1255 (3% compounded annually for four years to bring it at COD) and tax grossing up of 80% portion as per the terms of the OMS&A. Detailed calculation of cost and revenue by extending the same scenarios are attached as Annexure A to this letter. This calculation is over a period of six years and only demonstrates the incremental variable O&M costs impact due to extended O&M operations. The Petitioner also draw NEPRA's attention to Para 2 on page 9 of tariff petition which explains the reasons for apparently higher factor in case of Orient which in absolute numbers is not the case.





7.12 Decision of the Authority

7.12.1 The Authority has examined and considered the Petitioner's submissions, comments of Ministry of Water & Power, CPPA and petitioner's response thereof in detail. The Authority has noted that the issue of variable O&M cost has been deliberated in detail at paras 48 to 52 of the original determination dated 14th June 2005. The Authority having considered all the relevant aspect allowed the O&M cost to the Petitioner. The Authority further observed that based on the request of the Petitioner during the review motion against the COD adjustment, fuel cost component for operation on HSD was allowed vide decision dated 12th January 2012. The decision of the Authority dated 12th January is reproduced as under:

"The Authority has carefully considered the arguments of the Petitioner and is of the view that arguments raised are reasonable and based on the principle of equity and justice and considering the peculiar circumstances of the case and to avoid discrimination between the IPPs, the Petitioner's request to this extent is acceded to and O&M during operations on HSD being the average of three similar IPPs has been allowed."

7.12.2 The Petitioner in response to the CPPA's comments submitted the detailed working for the variable O&M cost on HSD. The Petitioner calculated the cost on two assumptions (i) 50% plant operation on HSD and 50% plant operation on gas and (ii) 100% plant operation on HSD with 92% availability. According to the Petitioner the weighted average cost / GT/hour (base) is US\$ 117.91 and total variable O&M cost of the six years operation is US\$ 34.71 million in Scenario-I and US\$ 41.67 million in Scenario – II. The actual generation from 1st July 2011 to 31st December 2012 on gas and HSD was 57% and 49% respectively.

7.12.3 In order to assess the reasonability of the petitioner's request for reviewing its variable O&M cost on HSD in-house exercise was carried out to analyze payment to O&M contractor as per the terms of the O&M contract and revenue receipt in accordance with the determined tariff for O&M component. The Petitioner's contention was examined in the light of the terms of O&M contract and provisions of Power Purchase Agreement (PPA). From the examination of the terms of O&M contract it was revealed that the power producer will pay bonus in case there is improvement in the agreed efficiency as well as improvement in average net output. It may be noted that the power producer is required to pay bonus against the gains of efficiency improvement and average net output improvement. The Petitioner has shown the bonus as cost but it has not provided any corresponding gain on account of improvement on these two factors. According to the O&M contract dated 31st October 2006:

Bonus/Liquidated Damages

The following incentive arrangement will be implemented during the term of this Agreement. This incentive arrangement has been designed to measure an Average Heat Rate Improvement and Average Net Output Improvement for the Combined Cycle Power Island





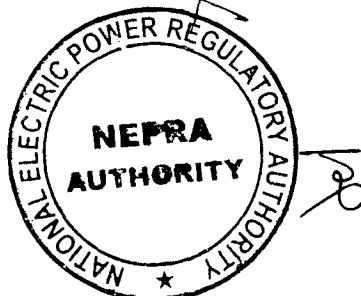
during a calendar year. Owner shall pay applicable bonuses in the next periodic payment invoiced by Contractor. Contractor shall apply liquidated damages as a credit in the next periodic payment invoiced by Contractor.

The Heat Rate and Output shall be measured every quarter, using station instrumentation, and shall be performed within 100 hours of Off-line water-washing being completed. If water washing is not performed by the Contractor for a period exceeding 120 days from the last water-washing, then the Heat Rate and Output tests shall be performed regardless within a period of 7 days after expiration of such 120 day period. The Bonus and/or Liquidated damages shall be applied only one time per year.

- 7.12.4 The components of the tariff cannot be considered in isolation and outside the premise of the agreements between the power producer and O&M contractor and power producer and Power Purchaser. The Authority further noted that another factor which is not considered in the calculations by the power producer was return on the advance payment received against milestone payment whereas the same has to be paid to the O&M contractor after completion of 20,000 FFH.
- 7.12.5 In order to assess that whether the existing tariff is sufficient to account for the full cost recovery of the Petitioner's plant operation on HSD, the relevant information was required to be provided by the Petitioner. The Authority during hearing directed the Petitioner to provide relevant information which was not provided. The Petitioner did not comply with the directions of the Authority; therefore the Authority considers that Non-compliance of its directions with respect to provision of the information is violation of the NEPRA Licensing Rules and terms. The Authority considers that O&M contractor fee depends upon achieving certain reference benchmarks i.e. efficiency and net output. The bonus is paid only if the O&M contractor achieves better efficiency and net output. However, the Petitioner has not provided complete relevant information / calculations indicating the impact of loss in revenue. In the absence of such information, the Authority has decided not to entertain the instant request of the Petitioner and decided to decline the relief prayed for under this head.

8. Heat Rate Test after each Major Maintenance

- 8.1 The Petitioner stated that the HSD fuel component initially determined for all the four similar IPPs were discrepant. The Power Purchaser, GOP and the Company/ies agreed that a heat rate test would be conducted after the major maintenance (when the turbines would be brought back to the near brand new position). In this way, the heat rate benchmark would be reestablished again to allow a more true representation. The results of such heat rate test would become the benchmark for the HSD fuel cost component in the tariff till next major maintenance which has a cycle of around 5-6 years. OPCL requested the Authority to allow HSD Heat rate test after each major maintenance.





8.2 Comments of the Power Purchaser

- 8.2.1 NEPRA determined Tariff for HPGCL dated 15-12-2005 on the basis of Plant efficiency on Gas as 51.2% (Heat Rate 6666 BTU / kWh) and in HSD as 48.5% (Heat Rate 7037 BTU / kWh). It may please be noted that there is no provision to conduct heat rate test at COD or during the operation regime of the plant neither in the PPA nor in the tariff determinations. Hence power purchaser believes that the demand of the Company is beyond the scope of the agreement.
- 8.2.2 It may please be noted that a heat rate degradation charge i.e. Annex-5, Schedule – 1 of the PPA was agreed between the Company and Power purchaser, the same chart may be adopted for HSD operation, since heat rate degradation is independent of the fuel used for operation of the plant. Power Purchaser provided the GE's degradation curve of heavy duty product line gas turbines (519HA745 and 519HA772) as reference. The power purchaser believes that the demand to conduct heat rate test after each major maintenance is out of the scope of the PPA.

8.3 The Petitioner's response w.r.t Comments of the Power Purchaser & NEPRA

- 8.3.1 The Power Purchaser has commented that there is no provision to conduct Heat Rate Test at COD or during the operation regime of the plant. The Petitioner referred Section 5.7 of the Implementation Agreement (IA) and the decision of the ECC. The Power Purchaser's statement is incorrect in the context of 5.7 of IA which states a mechanism for full recovery of costs to the Company and GOP, through ECC has gone on to recommend NEPRA to that effect.
- 8.3.2 A meeting was held on August 9, 2011 where Power Purchaser along with GOP participated to discuss the heat rate tests. It was proposed at the time that Heat Rate Tests should be performed at every major overhauling and all parties agreed to it. It now appears that power purchaser is having second thoughts on this issue. The main objective of this whole discussion with power purchaser was that there should neither be any loss nor any profit to either the Company or power purchaser on account of heat rate.
- 8.3.3 Furthermore nowhere in the FSA, it is stated that there would be any adjustment of specific gravity. It is also being confirmed through this letter that no adjustment of specific gravity has taken place with Shell either under the FSA or otherwise.
- 8.3.4 The Power Purchaser himself agreed that Heat Rate Tests should be performed at every major overhauling. The Heat rate tests before November 2011 could not be performed as Power Purchaser deliberately kept stalling the exercise. Further to that, as time passed away and substantial degradation took place in the turbines, there was no purpose of conducting such tests anymore at that stage as no one would have been able to determine the original heat rate figure given the fact that actual degradation could very well vary against the degradation estimated on papers. Therefore, subsequently, this exercise was not





carried out as it was also not acceptable to all the four IPPs and none of the IPPs would actually allow any test at this stage as it would not reflect the true position at all. However, the Heat Rate test after a major maintenance was agreed since the degradation is recovered during such overhauling and therefore it is possible to determine the original heat rate number of the Complex. Further, it is only just and fair that any error in the heat rate value is rectified so that the Power Purchaser only pays for the actual fuel costs; nothing more and nothing less.

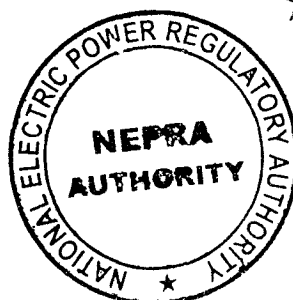
8.3.5 Company also does not agree to the comments from Power Purchaser regarding heat rate degradation factors. Company is already using the heat rate degradation factors in Annexure 5 of the PPA which are based on the assumption of Gas efficiency of 51.2 %. However, If the degradation table is reworked by changing the base from Gas efficiency to HSD efficiency of 48.5%, the values will be different for the same degradation as plotted in the referred graph. However, in any case, this is beside the point since our objective is to determine the original value of the heat rate and nothing else.

8.3.6 The Petitioner was directed vide letter No. NEPRA/TRF-209/OPCL-2012/9924 dated November 7, 2012 to provide the relevant documentary evidence with respect to the efficiency established by the EPC contractor at the time of Commercial Operation Date (COD). In response OPCL vide letter dated 12th November, 2012 stated that:

- Skoda Export (renamed to CKD Export and then to PA Export) was the EPC contractor of OPCL. In summer of 2009, Skoda Export was declared bankrupt by the Czech Court resulting in termination of the EPC contract with Skoda Export in September 2009. The Company then completed the project itself achieving COD in May 2010.
- Since there was no EPC contractor and Orient itself completed the plant, no heat rate test was conducted at COD as it was irrelevant in the absence of valid EPC contract. The Authority is well aware of the above background and facts through our tariff petition filed in January 2009 for increase in EPC cost, which was denied and then our tariff true up at COD. Orient also clarified the above position before the Authority during the hearing dated 11th September 2012.
- Orient in its tariff petition dated 3rd July 2012, has asked for heat rate to be determined at the start of each maintenance cycle i.e. through a test to be carried out after completion of each major overhaul. Please note that such tests are conducted in new and clean conditions, at the start or after every overhaul.

8.4 Decision of the Authority

8.4.1 The Petitioner's contention has been examined in the light of the determinations made by the Authority from time to time, O&M contract and PPA. In order to verify and validate the Petitioner's stance, the Authority during hearing dated 11th September 2012 directed the Petitioner to provide documentary evidence in support.





- 8.4.2 The Petitioner's submission, comments of the power purchaser and response of the Petitioner in response to Power Purchaser and NEPRA letter have been examined carefully. From going through the terms of O&M contract with respect to heat rate LDs/Bonus, it reveals that for determining the quantum of Bonus or LDs there must be some reference heat rate which O&M contractor has to ensure. The relevant terms of O&M contract of the O&M contract are as under:

Heat Rate

Owner shall pay Contractor for each positive percentage point of Average Net Heat Rate Improvement, rounded to the nearest one-hundredth of a point, a bonus equal to US Dollars one hundred thousand (USD 100,000) per calendar year to a maximum cap of USD 300,000 per calendar year. Contractor shall owe Owner for each negative percentage point of Average Net Heat Rate Improvement, rounded to the nearest one-hundredth of a point, a liquidated damage equal to US Dollars One hundred and fifty thousand dollars (USD 150,000) per calendar year up to a maximum of USD 450,000 per calendar year

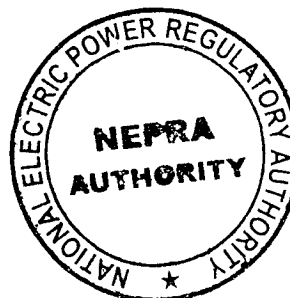
If the heat rate demonstrates an increase of more than 2%, the Contractor shall have the right to make improvements to the Complex, at its own cost and risk, and the retest once within 30 days, provided however, such relief shall not relieve the Contractor of any of its obligations under the Capacity Guarantee and Availability Guarantee and the results of heat rate test being repeated shall remain binding until after it is changed through a retest.

Output

Owner shall pay Contractor for each positive percentage point of Average Net Output improvement, rounded to the nearest one-hundredth of a point, a bonus equal to US Dollars one hundred and fifty thousand (USD 150,000) per calendar year up to a maximum of USD 450,000 per calendar year. Contractor shall owe Owner for each negative percentage point of Average Net Output Improvement, rounded to the nearest one-hundredth of a point, a liquidated damage equal to US Dollars one hundred and fifty thousand (USD 150,000) per calendar year up to a maximum of USD 450,000 per calendar year

The foregoing liquidated damages shall be in lieu of all actual damages and shall be Owner's sole remedy and Contractor's sole liability for failure to achieve positive Net Heat Rate Improvement and positive Net Output Improvement. The above liquidated damages are a reflection of actual damages and are therefore not a penalty.

- 8.4.3 The Authority feels that the petitioner's stance with respect to heat rate test on HSD fuel is not valid because the petitioner entered into an agreement with the O&M contractor to ensure the minimum efficiency benchmarks for determining LDs or bonus as the case may be on the basis of certain tests. The Authority noted that the power producer is required to pay bonus against the gains of efficiency improvement and average net output improvement. The reluctance in provision of the relevant documentary evidence by the



petitioner indicates that the actual efficiency is higher than the efficiency allowed by the Authority. The components of the tariff cannot be considered in isolation and outside the premise of the agreements between the power producer and O&M contractor as well as power producer and Power Purchaser. Generation tariff is a package where loss in some components is compensated by surplus in the other tariff components. In view thereof, the tariff components cannot be considered in isolation. Since the Petitioner was unable to justify its claim with respect to heat rate test through documentary evidence, the Authority has therefore decided not to consider the Petitioner's request in the instant case.

9 Adjustment of Specific gravity of HSD

- 9.1 The petitioner submitted that specific gravity value of 0.84 at 15° C was incorporated in HSD Fuel Cost Component calculations. On the other hand, the actual average HSD supply on site is collected at much higher temperatures, i.e., approximately 25° C — resulting in the much lower specific gravity of less than 0.84. This translates to significant annual losses for the Company. The petitioner requested the Authority to allow adjustment in HSD fuel component on account of change in reference specific gravity value from 0.84 to 0.833, in accordance with the actual average ambient site temperature of 25° C.

9.2 Comments of the Power Purchaser

The Authority determined the tariff for the project on 15-6-2005 and HSD supply agreement was signed between the Company and Shell Pakistan on 30th November 2006 with specific gravity of 0.87 / kg / Liter at 15 ° C (60° F) as per Schedule-I to the HSD Supply Agreement with Cost recovery for calorific value adjustment formulated in Schedule-6 of the HSD Supply Agreement. NTDC believes that the Company's demand for downward revision in specific gravity is not justified and its revision will extend undue benefit to the Company.

9.3 The Petitioner's response with respect to the comments of the Power Purchaser

- 9.3.1 The attention of the Authority is drawn to clause 10.1 of the Fuel Supply Agreement which states that:

"10.1 The Company's Authorized Representative shall measure the Product at the time of arrival of the tank lorry at the Site, by using a standard calibrated dip rod at normal temperature (emphasis added). The correct volume of the Product delivered will be calculated through the calibration chart of dips written on invoice available with the driver of the tank lorry, which shall be used as the basis for payment."

The annexure attached with the letter of CPPA and taken from the FSA of the Company refers to the "specification limits" which should not be breached. For instance the specific gravity cannot exceed MAXIMUM OF 0.87 at 60/60 °F it does not in any way mean that the specific gravity for HSD deliveries is to be taken at or converted to 0.87 nor such adjustment is stated or envisaged in the FSA. The Agreement signed between Company and



Shell Pakistan states under the head of General Specifications that MAXIMUM Density at 60 °F could be 0.87 at any given time but it does not mean that actual Density would be the same. From the very start of the Company's operations till this date, the density has never been 0.87 the Hydrocarbon institute which regulates such standards in Pakistan, has determined that based on actual data the fuel density at 15 degrees centigrade that same 0.84. Authority has used the same standard to allow tariff to the Company. If the density were to actually exceed 0.84, the Oil producing and distribution Companies would incur such huge losses in their fuel in their fuel inventory that they would stop selling the product to IPPs. What the Authority needs to note from these result is that while the Density is coming below 0.84 i.e. 0.83 or similar values, yet, Company has to apply a fixed density figure of 0.84 throughout the year in its calculation of fuel component thus incurring losses on the financial side.

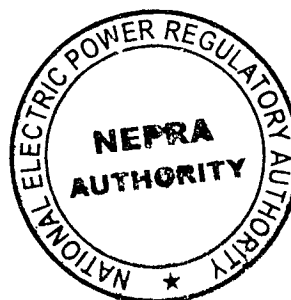
With regard to the adjustment of CV it is relevant to mention here that Company has not asked for any adjustment in this regard. However we feel it appropriate to clarify this issue as the same has been raised by CPPA. As per Schedule 1 Part A of FSA, the CV cannot fall below MINIMUM OF 1900 btu/lb (41887btu/kg). Unlike any adjustment for specific gravity, Section 805 and Schedule 6 of FSA stipulates the conditions for CV adjustment Section 805 state that:

Promptly offer the end of each Month during the term of this Agreement, the Company shall Compare the actual calorific value of all deliveries of HSD to the Complex during such Month on a weighted average basis with the expected calorific value of HSD deliveries to the Complex as set forth in Schedule 1, Part A..."

To put simply, company is exposed under the FSA to pay back the CV adjustment differential to Shell for any Btu in excess of 19000/lb (or 41887 btu/kg) and on the other hand in the tariff the Authority has used 42880 btu/kg to determine the HSD fuel cost component.

9.4 Decision of the Authority

- 9.4.1 In accordance with the decision of the Authority the fuel cost component of the energy charge part of the tariff of the Petitioner is subject to adjustment on the basis of variation in HSD price. The fuel cost component of the Petitioner is adjusted as per the reference values on the request of the Petitioner; however the Petitioner did not provide the authentic documentary evidence with respect to flash point, specific gravity and calorific value duly verified by the Power Purchaser through which the Petitioner's claim could be substantiated. Since the Petitioner did not provide any documentary evidence in support of its claim despite Authority's clear directions, the Authority has therefore decided to maintain its earlier decision in this regard.





3 Adjustment for Item No. 1 & 3 may be made effective from July 01, 2011.

- 3.1 The petitioner requested to make the revision of the relevant tariff components from 1st July 2011.
- 3.2 The Power purchaser stated that since the Company is not justified in its claim and its retrospective application is also out of scope of the Power Purchase Agreement (PPA).
- 4 In view of the issue-wise discussion made by the Authority in the preceding paragraphs; the Authority considers that the non-compliance of the information directions by the Petitioner is violation of the NEPRA Act and licensing terms and conditions. The Petitioner did not provide the information necessary to process the case. In view thereof the Authority has decided not to entertain the instant petition; accordingly the petition is hereby dismissed.
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