# National Electric Power Regulatory Authority

**Islamic Republic of Pakistan**

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**Registrar**

No.NEPRA/R/TRF-124/OPCL-2009/9208-9210
September 17, 2009

Subject: **Determination of the Authority in the Matter of Tariff Petition filed by Orient Power Company Ltd. (OPCL) for Modification in Tariff [Case # NEPRA/TRF-124/OPCL-2009(2)]**
Intimation of Determination of Tariff pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997)

Dear Sir,

Please find enclosed the subject Determination of the Authority along with Annexure-I, II & III (23 pages) in Case No. NEPRA/TRF-124/OPCL-2009 (2).

2. The Determination is being intimated to the Federal Government for the purpose of notification of the approved tariff in the official gazette pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997) and Rule 16(11) of the National Electric Power Regulatory Authority Tariff (Standards and Procedure) Rules, 1998.

3. Please note that only Order of the Authority at para 13 of the Determination relating to the reference tariff, adjustments, indexations and terms and conditions along with Annexure-I, II & III needs to be notified in the official gazette.

Enclosure: As above

( Arshad Mehmood )

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
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The Secretary
Cabinet Division
Government of Pakistan
Cabinet Secretariat
Islamabad

CC:

1. Secretary, Ministry of Water & Power, Islamabad.
2. Secretary, Ministry of Finance, Islamabad.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
(NEPRA)
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Case No. NEPRA/TRF-124/OPCL-2009

# DETERMINATION

# OF

# TARIFF PETITION

# Filed by

# ORIENT POWER COMPANY (PRIVATE) LIMITED (OPCL)

September 16, 2009

NEPRA
AUTHORITY

# NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
# (NEPRA)

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Case No. NEPRA/TRF-124/OPCL-2009

Petitioner

Orient Power Company (Private) Limited (OPCL)

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**Authority**

Zafar Ali Khan
Member

10/9/09

Ghiasuddin Ahmed
Member

16/IX

Shaukat Ali Kundi
Member

Shaukat Ali Kundi
11.09.09

Maqbool Ahmad Khawaja
Vice Chairman/Member

Khalid Saeed
Chairman

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
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# Determination of the Authority in the matter of Tariff Petition filed by Orient Power Company Limited for Modification in tariff Case No. NEPRA/TRF- 124 /OPCL-2009

Orient Power Company Limited (OPCL) filed a tariff petition on January 28, 2009 for modification in the generation tariff in respect of its 225 MW gas combined cycle power plant located at Balloki, Tehsil Pattoki District Kasur. The petition was submitted before the Authority for admission on February 26, 2009. While considering the petition for admission, the Authority decided to hold a pre-admission hearing in the matter so as to provide an opportunity to the petitioner under the tariff rules for being heard and to ascertain whether or not a prima facie case exists for further consideration of the Authority. Pre-admission hearing in the matter was held on March 17, 2009, which was attended by the representatives of the power purchaser, PPIB, Ministry of Water & Power and the Petitioner. PPIB was directed to give its opinion on the issue "whether incentives allowed by GOP through amendments in the Power Policy 2002 are also available to the IPPs whose tariff determination has been made by NEPRA prior to such amendments in the policy'. Based on arguments given by the petitioner in the pre-admission hearing as well as PPIB's reply to the aforesaid query of the Authority, OPCL's tariff petition was admitted by the Authority on April 27, 2009 for further consideration.

2. Pursuant to admission of the tariff petition, notice for admission along with salient features of the petition was published in the daily newspapers on May 9, 2009 for information and invitation to all the stakeholders for their participation in the tariff setting process. Public hearing of the case was held on May 25, 2009 which was attended by representatives of PPIB, CPPA, the petitioner and other stakeholders.

3. The petitioner sought relief in respect of the following;

i) Approval of increase in the EPC cost by US$ 27.760 million
ii) Allowance for the cost of working capital with necessary provision in the tariff.

4. Accordingly, the petitioner proposed revised project cost of US$ US$ 206.55 million against the existing approved cost of US$ 178.79 million and the modified levellized tariff of US cents 2.9601/kWh (against existing tariff US cents 2.7643/kWh) based on the PKR/US$ exchange rate of 60 and other reference numbers.

## 5. Submissions of the petitioner

### 5.1 Increase in EPC Contract

OPCL submitted that the Company was the first IPP under the 2002 Power Policy to reach financial closing. The Company signed an Engineering and Procurement **("E&P")** contract with Skoda Export, a company owned by the government of Czech

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Republic and a Construction (**"C"**) contract with Albario Engineering (Private) Limited (collectively "EPC Contract") for a total of $147.79 million (the "FPC Cost") for a 225 MW (gross) plant. This EPC Cost is the current approved cost pursuant to NEPRA's latest determination in favour of the Company. The EPC Contract was signed in December 2005. However, the concession documents were not available until mid 2006 and were eventually executed in November 2006. The EPC Contract was released upon financial closing in December 2006 with a "Required Commercial Operations Date" of 16 April 2009. In mid 2008, Skoda Export was privatized by the Czech government and has now been renamed CKD Export. According to OPCL, the EPC Cost has increased due to the following reasons:

<u>Devaluation of US$ against Euro & Czech Crown</u>

5.1.1 In its original tariff petition, the Company had sought indexation to Euro as well as USD, but the Authority denied Euro indexation on the basis that the same was not allowed under the Power Policy 2002. During the hearings, the Company asked for hedging cost to be included in the allowable budget, if another currency was not allowed. The Authority denied this as well. The Company had been in discussions with the EPC Contractor which was asking for the contract to be split in two currencies. USD and Euro. The Company expressed its inability to allow the same, and also declined to offer any hedging costs due to the Authority's views in this regard. While the Company managed to get the EPC Contractors to sign the contracts in USD, the Contractor did a large part of his procurement in Europe with almost US$ 66 million being non-USD denominated. During the period that the project was in the procurement phase in later half of 2007 and early 2008, the USD started devaluing significantly against the Euro and Czech Crown and other European currencies. This is the same period that the procurement of the equipment was going on and so the Contractor was hit directly by the exchange rate movement. The actual cost impact has been demonstrated in the petition, together with auditors certificates from Ernst & Young, showing the actual dollar values paid by the EP Contractor based on the rapidly moving exchange rates. Subsequent to the tariff approval, the GOP amended its Power Policy 2002 and allowed indexation to four currencies. The Company, therefore, requested the Authority for an amendment to reflect the actual cost increase on this account being suffered. The Authority sought a view from the GOP, through PPIB, as to the applicability of this Policy change and PPIB stated, clearly and unequivocally, that the Policy changes apply to all projects under the Policy. In fact, the Authority had already taken a *suo moto* action in the case of Orient, once these policy changes had come about in November 2005, subsequent to its tariff determination, to allow for equity return during construction. With the allowance of such indexation being available to the Company, as demonstrated by *suo moto* actions by the Authority, and confirmed by GOP. another question that has been raised by the Authority is that since the Licensee is the Company, and its contracts with the EPC contractor are denominated in USD, why should the Authority consider any increase if such loss is being incurred by the EPC' Contractor? This has been explained by the Company in the



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hearing, but since this is the only remaining question in the context of whether such cost increase ought to be allowed. A summary of the reasoning is provided below:

a. Through the Power Policy 2002 the security documents, and through the Guidelines for Determination of Tariff, PPIB, NEPRA and WAPDA all recognize that the EPC contractors are acting on behalf of the project company for purposes of constructing the project. It is for this reason that the Implementation Agreement requires prior approval of the EPC contractor by the GOP, as well as any material changes to the EPC contract at least 15 days prior to execution. Similarly, NEPRA requires submission of the EPC contracts before processing any tariff case. Clearly, part of the objective is to ensure reasonableness of cost. By the same token, when actual costs can be demonstrated to be higher, on account of exchange rate movements that are in no one's control, the Authority cannot reasonably dismiss them. The entire purpose of these prior approvals and submissions is to ensure that the contractor is asking for reasonable cost and not any excessive amounts. That being said, since the Company asked for such indexation, was denied it at that time, and subsequently the Policy allows it, such cost increases by the EPC contractor cannot be denied. The whole purpose of such indexation is to permit purchases of equipment by contractors in more than one currency. Indexation permits adjustments due to currency fluctuations in the absence of hedging. This facility is designed to benefit the project as a whole.

b. The Company cannot amend the price in the EPC contract without prior approval of PPIB as per Clause 6.2 (b) of the Implementation Agreement. Any such approval cannot be obtained from PPIB without prior approval by NEPRA as per PPIB policy since it affects the tariff. Therefore, if any cost increase is required in the EPC contract, a Licensee has to necessarily first come to NEPRA and have the revised tariff approved, before going to PPIB to get approval for execution of the same. In the instant case, when the contractor approached the Company in October 2008, regarding the cost increases, the Company first wanted to make sure that it could authenticate the same based on actual contracts, before it approached NERPA. The Company required the EPC Contractors to have one of the big four Audit firms to audit the exchange rate impact and when the entire process was completed, the Company submitted the petition on January 20, 2009. Each sub-contract of the E&P Contractor attached with the Petition states the balance amount payable under respective sub-contracts together with the actual payments already made at actual exchange rates. It also stipulates that they be indexed to Euro moving forward. As for the impact already suffered the calculation were also shown. So, in effect the Company sought approval from NEPRA to make this change to allow indexation prospectively for remaining



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c. The beneficiary of the exchange rate fluctuation and protection afforded under the Power Policy 2002 are not the power companies or licensees, but the EPC contractors since they are companies that are simply the intermediaries which allow the benefit to be passed on to the projects. The EPC contractors would be charging much higher EPC prices if they were not provided such currency risk protections. Therefore, the benefit of lower pricing is being passed on the power purchaser through this mechanism. Therefore, given that the Policy application is available to OPCL, and that the ultimate beneficiary is clearly understood to be the EPC Contractors and not the Company, such protection not being afforded to our EPC Contractors would be clearly a discriminatory practice which would neither be appropriate, nor consistent with the letter and spirit of the Implementation Agreement.

Additional Equipment Required by NTDC

5.1.2 The EPC Contracts were finalized and signed in December 2005. The PPA was finalized and signed in November 2006 on account of late release of such standardized security documents duly approved by the ECC in mid 2006. When the PPA was finalized, NTDC imposed certain conditions which were additional to the plant requirement. In particular it decided that it wanted two double circuit transmission lines, thereby necessitating four line bays in the switchyard of the plant instead of two line bays. This has resulted in an increase of approximately US$ 1.1 million in the cost in the form of a change order. Additionally, the PPA requires certain telecommunication equipment that has to transmit data to the National Power Control Center through SCADA system. The contractor proposed equipment made by a French manufacturer. DIMAT, which met all the requirements of NPCC. However, since NPCC has ABB equipment at their end, they insisted that we switch to buying ABB equipment at our end even though the DIMAT equipment was perfectly compatible. This process continued for more than one and hall' year. Eventually, in order to ensure that there is no further delay, the Company had to cancel its previous order and buy ABB equipment, which cost almost $200,000 more, since ABB is NTDC's preferred customer in this matter. Another similar example is the PABX required for dedicated lines. NTDC insisted on Blue Corn make, which cost $48,000 versus other makes like Panasonic etc which cost less than $5,000.

Unprecedented Increase in cost of Equipment

5.1.3 At the same time, the cost of equipment and materials started rising at unprecedented rates. While the trends started reversing in later half of 2008, more than *95%* of equipment had been procured and most of it already shipped by that time.

Increase in Transportation Cost to Pakistan

5.1.4 Given the security concerns and the general tightness in the market, the ocean freight increased over this period by more than $1 million compared to original rates. Complete data for the Baltic Dry Cargo Index is provided in the petition. These factors, and others, resulted in the actual cost to be incurred by CKD Export to execute the Project exceeding the agreed contract value by a sizeable margin. In light of the above, the Company requests the Authority to review the sole issue of approved EPC cost, together with the documentation provided by the EPC Contractor to show that its actual cost is substantially higher than approved amounts.

5.1.5 Since there are two contracts, there are two separate requests, which combined together, results in a request for price increase of US$ 27.76 million. If approved, this will result in the new price being US$ 175.549 million. In addition to the Balloki project, there are five other gas turbine IPPs in construction using gas as primary fuel, with 3 being identical to Balloki. The following table shows the EPC prices of these projects as published by NEPRA.

| Project Name | Current EPC Cost Approved By Nepra (USS M) | EPC Petitions Decided by Nepra | Net MW | EPC Cost US$/MW Prior to Revision | EPC Cost US$/MW Revised |
|---|---|---|---|---|---|
| Orient | 147.79 | [TBD] | 209.00 | 0.707 | [TBD] |
| Sapphire | 158.85 | [TBD] | 209.00 | 0.760 | [TBD] |
| Star | 131.43 | Yes | 124.50 | 0.63 l | 1.056 |
| Uch II | 366.76 | [TBD] | 375.20 | 0.977 | [TBD] |
| Foundation | 161.70 | Yes | 176.66 | 0.853 | 0.915 |
| Halmore | 172.17 | Yes | 209.00 | 0.8) | 0.824 |
| Saif | 159.17 | Yes | 209.00 | 0.751 | 0.751 |

5.1.6 It can be seen from the above table that the request being made by the EPC Contractor is not out of line with the market conditions. Further, there are precedents of increases in EPC price being allowed by the Authority after financial close.



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**Working Capital**

6 The Company was not allowed any provision for working capital in its tariff. Subsequent to tariff determination of the Company, NEPRA has been allowing working capital cost to other projects. The Company is therefore making the request for allowing PKR 0.0241/KWh cost of working capital as part of Capacity Purchase Price in its tariff similar to what has been allowed to other companies. The above tariff calculation uses the reference numbers for KIBOR *(3* months), Gas and HSD Price, used in the original tariff determination of' the Company to ensure consistency. Based on this, true up would be required at the Commercial Operations Date for LIBOR (3 months), Gas and HSD prices together with other items of true up. Thereafter the working capital component of tariff would be indexed only to KIBOR (3 months) on a quarterly basis. The breakdown of the same is as follows:

**(i) Gas Bill**

Under the Power Purchase Agreement (PPA) dated 8th November 2006 signed between the Company and National Transmission & Dispatch Company ("NTDC"), the Company is to invoice NTD (for Energy Payment Price-EPP) on or after the first day of the month, following the month to which EPP relates. NTDC has to make the payment of the same by thirtieth day following the day of submission of the invoice i.e. 31st day. Under the Gas Supply Agreement dated l8" October 2006 signed between the Company and Sui Northern Gas Pipeline Ltd ('SNGPL). SNGPL has to invoice the Company for the gas delivered during the preceding month on or after first day of the following month. Payment of the same is to be made within fifteen days of submission of the invoice. There is time lag of sixteen days between payment to SNGPL and receipt of EPP from NTDC that needs to be financed through working capital line. The working capital tariff component of PKR 0.0024/KWh is for gas at reference rates.

**(ii) Stock of Diesel**

The PPA requires the Company to maintain seven days stock of HSD during nine months of gas availability period (March to November) and fifteen days of stock of HSD for three months of gas non-availability period (December to February). The stock of HSD has to be financed through working capital. The working capital tariff component of PKR 0.0068/Kwh is for HSD stock.

**(iii) HSD Consumption during Non Gas Months**

Under the GSA, three months in a year i.e. December to February are non-gas months. The Company has HSD as back up fuel. Non availability of gas during these three months requires the plant to be run on HSD. Under the HSD Supply Agreement **("HSDSA")** dated 28th November 2006 entered into between the Company and Shell Pakistan Limited ("Shell"). the Company has to make the payment for fuel deliveries in advance i.e. three days ahead of the week during which deliveries are to be made to Shell. The Company would get the payment from NTDC for its EPP invoice within the time frame as mentioned above.



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Therefore during any non-gas month there is a time lag ranging between 44—65 days. This requirement has to be financed with working capital. Plant load factor of 60% has been used while the plant uses HSD. The working capital tariff component of PKR 0.0062/KWh is for HSD consumption.

**(iv) Bank Fees**

Under the terms of the GSA, the Company has to provide security in the shape of a bank guarantee to SNGPL equivalent to three months of gas bill. On this guarantee, the Company would pay annual commission to the issuing bank calculated @ 1.5% per annum.

In addition, the Company has to pay one time arrangement fee at the time of sanctioning of working capital lines and thereafter annual renewal fee on renewal of working capital lines. This arrangement fee has been taken at 1% of the funded facilities and annual renewal fee at PKR I.0 million. The arrangement fee has been spread over a life of the project i.e. thirty years. The working capital tariff component of PKR O.0062/K\kWh is for bank fees.

**(v) Sales Tax**

Under the GSA, the Company would pay gas bill on 15th of the month along with sales tax to SNGPL. Under the GSA, the Company would pay in advance to Shell for supplying deliveries of HSD either for purpose of supplies for maintaining seven and fifteen days stock of HSD or for consumption during three months of non gas months. Payment profile to Shell has been explained above. Under the PPA, the Company would invoice EPP to NTDC on 1st day of the following month along with sales tax and would be paid on 31st day. The Company's obligation to pay sales tax to the Government is on 25 day of the following month to which the sales tax relates. Because of above arrangements, the Company would pay sales tax to SNGPL, Shell and Government earlier than its recovery from the NTDC. This has to be financed from the working capital. The working capital tariff component of PKR 0.0025/KWh is for sales tax. It is to be noted that the above calculation relates solely to the working capital related to fuel supply, both gas and HSD, and does not include any working capital for other Company expenses like insurance, O&M and administrative costs.

**Issues**

7 In view of the proceedings of the case, documentary evidence provided by the Petitioner, and comments of the Power purchaser (CPPA) the following issues have been considered by the Authority;

(i) EPC Cost increase due to exchange rate & other factors
(ii) Provision in tariff for the working capital component.



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## 8. EPC Cost Increase due to exchange rate & other factors

8.1 OPCL has sought an increase in the EPC Cost of US$ 27.76 million (from US$ 147.79 Mln to US$175.55 Mln) on account of the following factors;

i) Exchange Rate Fluctuation.
ii) Security situation in Pakistan
iii) International Raw material Cost increase (primarily metals)
iv) Equipment Cost increase (Market tightness)
v) Others (transportation, sea freight, WAPDA additional requirements etc.)

8.2 According to the information provided by the Petitioner, the total cumulative impact on its EPC Cost due to the above four factors has been worked out as US$ 27.761 million tabulated as hereunder;

| Category | Existing (US$ Million) | Price Difference (US$ Million) | Proposed (US$ Million) |
|---|---|---|---|
| Equipment EP costs (Offshore) | 129.790 | 14.154 | 143.944 |
| Construction Contract ("C") | 18.000 | 13.607 | 31.607 |
| EPC Cost | 147.790 | 27.761 | 175.551 |

8.3 In support of the above increase sought by the petitioner, it provided copies of invoices paid by its EPC Contractors (CKD Export & Al bario) to their equipment suppliers/sub-contractors duly verified by an independent auditor- Ernst & Young. The bases forming grounds for seeking increase over the contracted EPC price were discussed at length in the pre-admission hearing held on March 17, 2009 as well as in the public hearing of tariff petition. The Petitioner stated that substantial portion of the above increase was due to the exchange rate variation in Euro and CZK Crown. However, the impact of exchange rate variation on the offshore contract price was not provided separately, rather claimed on the basis of actual amount paid by the EP contractor to its sub-contractors and the amount due to be paid by COD. The Petitioner was asked to provide details of the cost claimed over EP contract price due to exchange rate variations in different currencies and other factors separately. In response, the petitioner provided additional information showing the price impact on the EP Contract due to the aforementioned factors as given hereunder.

| | | | |
|---|---|---|---|
| i) | Exchange Rate variation till November 2008 | = | US$ 5.292 million |
| | Exchange Rate variation estimated till COD | = | US$ 4.312 million |
| ii) | Increase in cost of equipment | = | US$ 1.999 million |
| iii) | Transportation Costs | = | US$ 1.093 million |
| iv) | Other Costs (insurance, legal, financing and EPC Fees, Additional scope of work etc | = | US$ 1.459 million |
| | Total | = | US$ 14.154 million |

8.4 OPCL further stated that the above cost increases were based on exchange rate of different currencies prevailing on the date of payment by the EP contractor till



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November 26, 2008. While there were certain payments which were yet to be made by the EP Contractor before the COD for which it requested for provision of exchange rate adjustment in accordance with the GOP Power Policy 2002.

8.5 OPCL also claimed an increase in cost over the On-shore contract price ("C" Contract with Albario Engineering) which is equivalent to US$ 13.607 million. The existing construction contract price was US$ 18.000 million which has now been increased to US$ 31.607 million. According to the information provided by the Petitioner, the Construction Contract includes the following scope of work.

i) Civil Works
ii) Erection and commissioning including gas turbine services
iii) Supply and erection of certain operation units, subgroups and equipment namely relating to the Balance of Plant (BOP).
iv) Other services connected with provision and support of the site activities.

8.6 It was stated that due to the delay in achieving financial close by the company, and hence issuance of Notice to Proceed (NTP), the prices offered by the sub-contractors were no more valid for which the contractor had to re-negotiate several times during the whole year of 2006. Therefore, when the contractor started placing orders right after the financial close in December 2006, the prices were in excess of original numbers. As a consequence of the aforesaid, all construction costs have been affected by the price increase. Accordingly, the cost escalation was on account of the following five main factors.

i) Raw materials cost increase (Cement, steel, fuel (Diesel/petrol).
ii) Labour Cost increase - Direct and Indirect mainly due to inflation
iii) Costs of utilities and rental of Equipment and Consumables
iv) Supplier's market premium - Driven by increased demand of energy equipment.
v) Local situation - security reasons demanding increased security measures at site and places of stay of experts and staff.

8.7 According to the information provided by the Petitioner as well as examination of the EPC contracts (E&P Contract and Construction Contract) along with subsequent amendments to the original contracts and other relevant documents, it transpired that the Petitioner's request for increase in the EPC Cost is not supported by the facts and documentary evidences on the following grounds.

i) OPCL signed an EPC contract with Skoda Export and Al-bario Engineering collectively its EPC contractor at US$ 143.09 million in a single currency i.e USD on December 30, 2005, as Euro/US$ indexation initially requested by OPCL was not allowed by the Authority in its determination dated June 12, 2005.

ii) The EPC Contract was amended twice i.e firstly on July 12, 2006 and secondly on August 31, 2006 thus increasing EPC contract price to US$ 146.79 million and US$ 147.79 million respectively.

iii) OPCL was allowed US$ 8.79 million as EPC cost increase in September 2006, on account of delay in finalization of standard security documents by GoP.

iv) The existing EPC contract price US$ 147.79 million is the cumulative fixed contract price to be paid by the company to the EPC contractor in a single currency i.e. USD, with no provision for adjustment in any other currency. The EPC contract price is the same as already approved by the Authority.

v) The EPC contractor, however, entered into various sub-contracts with the equipment suppliers/manufacturers based on terms of payment in different currencies i.e. Euro and mainly Czech Crown (CZK).

vi) The increase in the EPC cost as claimed by the Petitioner has resulted due to increased price of various equipment and supplies paid by the EPC contractor to its sub-contractors due to exchange rate fluctuations and increase in the cost of materials during the project construction period.

8.8 In view of the above its is quite evident that OPCL's liability towards its EPC contractor is limited to the extent of fixed EPC contract price of US$ 147.79 million which is binding on both the parties. The increase in the EPC cost as sought by the EPC contractor is his liability and the company can not be made responsible and liable either legally or commercially for payment of any amount over the contracted price. The EPC contractor while signing the fixed price EPC Contract must have taken into account the risk factor for future increases in the material and equipment cost due to exchange rate fluctuations and other inflationary impacts on the cost, during the period of project construction. Based on the aforesaid, the increase in the EPC cost sought by the Petitioner is not justified.

8.9 Further, OPCL's claim for increase in the EPC cost has not been supported with the documentary evidence i.e. EPC Contract which has not been amended by the company to include provision for adjustment/indexation based on Euro/US$ parity, although it had amended its EPC contract twice subsequent to signing of the contract in December 2005 and its determination of tariff by the Authority in June 2005..

8.10 The petitioner's argument that it could not make any amendment in the EPC contract price without prior approval of PPIB and/or NEPRA as stated at Para 5.1.1(b) of this document and reproduced here "*The Company cannot amend the price in the EPC contract without prior approval of PPIB as per Clause 6.2 (b) of the Implementation Agreement. Any such approval cannot be obtained from PPIB without prior approval by NEPRA as per PPIB policy since it affects the tariff. Therefore, if any cost increase is* *required in the EPC contract, a Licensee has to necessarily first come to NEPRA and have the revised tariff approved, before going to PPIB to get approval for execution of the same"* is also not maintainable in light of the provisions of clause 6.2(b) of the Implementation Agreement. The option to amend the contracted price by inserting provision for adjustment of applicable currencies was available to the petitioner to support his case based on the documentary evidence. The aforesaid clause of Implementation Agreement primarily provides for GOP's approval with regard to change of EPC contractor or design of plant and equipment as reproduced hereunder.

> " *Prior to the date hereof, the EPC Contractor has been approved by the GOP. The Company shall provide the GOP with a certificate of duly authorized officer of the Company setting out any proposed amendment (a "Proposed Material Amendment") to the EPC Contracts that would result in (i) a change in the EPC Contractor, or (ii) a change in a major piece of equipment as to either its company or country of manufacture, not later than fifteen (15) Business Days prior to execution thereof, setting forth the proposed changes".*

8.11 Regarding the petitioner's claim of about US$ 1.34 million due to additional scope of work as per specific requirement of the power purchaser, the Authority has been informed by the CPPA that no such request for additional equipment has been made to the company. The power purchaser at the time of public hearing of the case as well as in its subsequent comments stated that the make, manufacturer and other requirements of the SCADA system have been provided in the standard Power Purchase Agreement which has been duly complied with by all other IPPs. The power purchaser stated that it had not asked for anything additional but what was necessary for reliable operation of the power plant. The power purchaser further stated that relevant provisions of PPA give right to the power purchaser to approve telecommunication & protection scheme of the complex, and therefore, recommended that no such claim of the petitioner be accepted by the Authority.

8.12 In view of pleadings of the case as well as documentary evidence provided by the Petitioner, the Authority considers that though GoP Power Policy 2002 does provide for adjustment of EPC price due to exchange rate fluctuations of other currencies such as Euro, Pound Sterling and Yen in equivalent US dollars at the time of COD as agreed in the EPC contracts, but in the instant case the claimed increase in the EPC cost due to exchange rate variation and other factors has not been substantiated through the documentary evidence (EPC contacts) of the Petitioner. The cost over run due to various factors as stated by the Petitioner is outside the scope of EPC Contract, and therefore, it is primarily EPC contractor's liability. The company is not bound to make good any loss incurred by the EPC contractor due to the reasons as stated in the preceding paragraphs. The Authority, has, therefore, decided that increase in the EPC cost based on the grounds as sought by the Petitioner is not justified and hence not allowed.



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**Provision for the Working Capital Requirement**

9. The petitioner stated that it was not allowed a provision for working capital in the tariff as requested in its initial tariff petition on the basis that the same was not allowed to any other IPP. Subsequently the Authority did allow a tariff for the working capital cost to other IPPs. OPCL, therefore, requested for provision of Working capital cost in the tariff on the basis of the following factors.

i) Seven (7) days stock of fuel (HSD) during the nine months of gas availability (March to November).
ii) Fifteen (15) days stock of fuel during the non-Gas period (December to February).
iii) Time lag of sixteen (16) days between payment to SNGPL and receipts from NTDC as per the Gas Supply Agreement.
iv) Time lag of 44 to 65 days between payment to Shell and receipts from NTDC per payment terms of the Fuel Supply Agreement.
v) Arrangement fee to lenders for working capital lines (spread over project life and commission on bank guarantee on annualized basis).

9.1 Based on the above factors OPCL requested a working capital component of tariff as Rs. 0.0241/kWh (at reference prices).

9.2 The cost of financing (interest) for meeting the working capital requirements of the company has been allowed by the Authority to other such IPPs, therefore, the request of the petitioner for financing cost of fuel stock is justified and, therefore, allowed by the Authority. However, the Authority has not allowed to any other IPP, the cost of financing for the time lag between payment made by the company to its fuel suppliers and realization of the same from the power purchaser through monthly invoicing, on the ground that though the company will be making certain payments in advance but at the same, for certain components of tariff (such as Debt servicing, ROE & ROEDC) the company shall also receive payment from the power purchaser through monthly invoices before its actual disbursement on which it will realize profits/gains. On the basis of same principle, the annual bank fees for providing financing and commission on the bank guarantee equivalent to 3 months supply of gas as requested by the petitioner is not justified and can not be allowed.

9.3 The Authority, however, understands that any time lag between actual realization of its fuel cost and payments made by it to fuel suppliers can at least be minimized if not completely eliminated, by making certain amendments in the billing/invoicing mechanism stipulated in the standard Power Purchase Agreement for the IPPs. The Power Purchaser is also in agreement with the views of the Authority and proposed certain amendments whereby this time lag could be reduced. The Authority therefore, directs the Power purchaser to devise a billing mechanism in consultation with the power producers and PPIB for revision in the existing standard provisions of the Power Purchase Agreement within a period of two months of this determination.

9.4 In line with Authority's decisions for other such IPPs, a working capital component of tariff for financing cost of 7 days stock of HSD during the 9 months of gas availability and 15 days stock of HSD during the non-gas months (3 months) has been allowed and worked out as Rs.0.0348/kW/h Rs 0.0745/kW/h respectively.

10. Recapitulating, OPCL's tariff has been modified based on revised reference numbers as mentioned below and to the extent as indicated herein in the order of Authority.

| **Description** | **Existing** | **Modified/Revised** |
|---|---|---|
| PKR/US$ exchange Rate (Rs) | 60.00 | 60.00 |
| KIBOR | 4.4%+3% | 13.72%+3% |
| Fuel Price LHV (Gas) (Rs/MMBtu) | 190.499 | 326.76 |
| Fuel Price HSD Excluding GST (Rs/Litre) | 23.25 | 48.03 |

11. While the determination of the Authority in the matter was in process of finalization, OPCL vide its letter No. OPCL/2009/7/NB27 dated July 29, 2009 informed the Authority that certain recent material developments with regard to issues relating to the EPC contractor may have serious financial consequential effects on its project cost and, therefore, requested that the Authority may not issue determination in the aforesaid matter and defer its decision till such time the matter is either resolved and/or situation is clarified.

12. The Authority considered the request of the OPCL and decided that since the determination on the tariff petition has been processed and finalized based on the pleadings of the case, therefore, OPCL's request cannot be entertained at this belated stage. OPCL, however, has the option to come before the Authority at any time before or at the time of Commercial Operation Date (COD) of the power complex with a fresh tariff petition

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**Order.**

13. Pursuant to Rule 6 of the NEPRA Licensing Generation Rules 2000, Orient Power Company (Pvt) Ltd is allowed to charge the following tariff for sale of electricity to Central Power Purchase Agency of NTDC on behalf of Ex-WAPDA Distribution Companies:

| DESCRIPTION | YEAR 1-10 | YEAR 11-30 | INDEXATION |
|---|---|---|---|
| **For Operation on Gas** | | | |
| **Fixed Charges** | **Rs/kW/Hour** | **Rs/kW/Hour** | |
| Fixed O&M | 0.1445 | 0.1445 | WPI, US CPI, US$/PKR |
| Insurance | 0.0484 | 0.0484 | |
| Working Capital Component | 0.0348 | 0.0348 | KIBOR |
| Debt Service | 0.9120 | - | KIBOR |
| Return on Equity (ROE) | 0.2197 | 0.2197 | US$/PKR |
| Return During Construction (ROEDC) | 0.0168 | 0.0168 | US$/PKR |
| **Total Fixed Charges** | **1.3762** | **0.4642** | |
| **(A) Variable Charges** | **Rs/kWh** | **Rs/kWh** | |
| Fuel Cost Component | 2.1782 | 2.1782 | Gas Price |
| Variable O&M | 0.0990 | 0.0990 | US CPI, US$/PKR |
| **Total Variable Charges** | **2.2772** | **2.2772** | |
| **For Operation on HSD** | | | |
| **(B) Variable Charges** | **Rs/kWh** | **Rs/kWh** | |
| Fuel Cost Component | 9.9456 | 9.9456 | Fuel Price |
| Variable O&M | 0.0990 | 0.0990 | US CPI, US$/PKR |
| **Total Variable Charges** | **10.0446** | **10.0446** | |

i) The above tariff is applicable for a period of 30 years commencing from the date of Commercial Operation.
ii) Dispatch criterion will be based on the variable charge.
iii) Component-wise tariff tables for operation on gas and HSD are attached herewith as Annex-I&II respectively.
iv) Debt Service Schedule is attached herewith as Annex-III

The following items on which costs have been based and which are expected to be varied during the tenure of the PPA are not in the control of the operator and therefore are considered pass-through items, such that the sale purchase rate is varied to incorporate the variation in the relevant elements.

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i) Indexation applicable to O&M

In future the 50% of Fixed O&M part of Capacity Charge will be adjusted on account of local Inflation (WPI) and 50% on account of US CPI and variation in Dollar/Rupee exchange rate. Adjustment for local and foreign inflation will be made on quarterly basis, on the basis of WPI as notified by the Federal Bureau of Statistics (FBS) and US CPI issued by US Bureau of Labor Statistics for the month of August, November, February & May respectively. Indexation for variation in dollar/rupee exchange rate will be made on October 1, January 1, April 1 & July1 on the basis of revised TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan. The mode of indexation for escalable component will be as under:

(a) Fixed O&M

$F\ O\&M_{(RWPI)} = Rs.0.1445 * 50\% * WPI_{(REV)} / 111.37$

$F\ O\&M_{(RE)} = Rs.0.1445 * 50\% * US\ CPI_{(REV)} / US\ CPI_{(REF)} * ER_{(REV)} / 60$

Where:

| | | |
|---|---|---|
| $F\ O\&M(_{RWPI})$ | = | The revised applicable Fixed O&M Component of the Capacity Charge indexed with WPI |
| F O&M (RE) | = | The revised applicable Fixed O&M Component of the Capacity Charge indexed with Currency fluctuation |
| $WPI_{(REV)}$ | = | the Revised wholesale Price Index (manufactures) |
| Reference WPI | = | 111.37 wholesale price index (manufactures) of December 2004 as notified by Federal Bureau of Statistics |
| $US\ CPI_{(REV)\,)}$ | = | the revised US CPI |
| $US\ CPI_{(REF)}$ | = | 190.3 US CPI for the month of December 2004 as issued by the US Bureau of Labor Statistics |
| $ER_{(REV)}$ | = | the Revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan |
| Reference ER | = | the Revised Exchange Rate |

(b) Variable O&M

The formula of indexation for variable O & M component will be as under:

$V\ O\&M_{(REV)} = Rs.0.0990 * US\ CPI_{(REV)} / US\ CPI_{(REF)} * ER_{(REV)} / Rs.60$



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Where:

$V\ O\&M_{(REV)}$ = the revised applicable Variable O&M Component of Energy Charge

$US\ CPI_{(REV))}$ = the revised US CPI

$US\ CPI_{(REF)}$ = 190.3 US CPI for the month of December 2004 as issued by the US Bureau of Labor Statistics

$ER_{(REV)}$ = the Revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

ii) Adjustment for KIBOR variation

The interest part of non-escalable fixed charge component will remain unchanged throughout the term except for the adjustment due to variations in interest rate as a result of variation in quarterly KIBOR according to the following formula;

$$\Delta I = P_{(REV)} * (KIBOR_{(REV)} - 13.72\%) / 4$$

Where:

$\Delta I$ = The variation in interest charges applicable corresponding to variation in KIBOR. $\Delta I$ can be positive or negative depending upon whether KIBOR REV > or < 13.72%. The interest payment obligation will be enhanced or reduced to the extent of $\Delta I$ for each quarter under adjustment applicable on quarterly basis.

P(REV) = is the outstanding principal (as indicated in the attached debt service schedule to this order) on a quarterly basis on the relevant quarterly calculations date. Period 1 shall commence on the date on which the 1st installment is due after availing the grace period.

Note; Working capital component of tariff will also be adjusted after COD on quarterly basis on account of any variation in the quarterly KIBOR.

(iii) Fuel Price Variation

The Variable Charge part of the tariff relating to fuel cost shall be adjusted on account of the fuel price variations as and when notified by the relevant authority, which in the instant case is the Oil & Gas Regulatory Authority. In this regard, the



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variation in OPCL's allowed rate relating to fuel cost shall be revised according to the following formula:

| | | |
|---|---|---|
| FCg(Rev) | = | Rs. 2.1782 per kWh * FP(Rev)/Rs.326.76 per MMBTUs |
| Where: | | |
| FCg (Rev) | = | Revised fuel cost component of Variable Charge on gas |
| FPg (Rev) | = | The new price of gas as notified by the relevant Authority per MMBTUs of fuel adjusted for LHV-HHV factor. |
| FCd(Rev) | = | Rs.9.9456 per kWh * FP(Rev)/Rs. 48.023 per Litre excluding GST. |
| Where: | | |
| FCd (Rev) | = | Revised fuel cost component of Variable Charge on High Speed Diesel (HSD) |
| FPd(Rev) | = | The new price of HSD/litre (exclusive of GST) as notified by the relevant Authority. |

Adjustment on account of inflation, foreign exchange variation, KIBOR variation and fuel price variation will be approved and announced by the Authority within seven days of request made by OPCL. OPCL will submit its request for adjustment of relevant components of tariff within 7 working days of the applicable adjustment/indexation date.

**Terms and Condition of Tariff:**

i) Gas usage will be considered the primary fuel subject to the condition as stated at serial No. (iii) below

ii) All equipment installed will be new and the plant will be of standard configuration.

iii) Dispatch will be based on the variable charge applicable at the time as under:

a) Variable Charge A:

Variable charge during nine months in a year for operation on gas. Dispatch criterion for nine months in a year (March to November) will be the variable charge A.



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b) Variable Charge B:

Variable charge for three months (January, February & December) in a year for operation on diesel. Dispatch criterion for three months in a year will be variable charge B.

c) If gas is available for more than nine months in a year the variable charge as well as dispatch criterion will be based on variable charge (a) for the energy generated on gas as fuel.

iv) Diesel oil will be used only for startups and other contingent requirements save to the extent of usage allowed for variable charge application and dispatch criterion as per clause (iii) above. Use of Diesel oil as main fuel during the nine months in a year other than the months of January, February and December in case of non-availability of gas (except in Force Majeure conditions as declared by the Authority) dispatched on variable charge (A) during the period shall not entitle OPCL to claim a charge higher than variable charge (A).

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Annex

# Orient Power Company Ltd.
## Modified Tariff (GAS)

| Year | Variable Charge (PKR/kWh) | | | Capacity Charge (PKR/kW/Hour) | | | | | | | | CPP | Tariff |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Fuel | Variable O&M | Total | Fixed O&M | Insurance | Working Capital Component | Return on Equity (ROE) | Return on Equity during Construction (ROEDC) | Loan Repayment | Interest Charges | Total Tariff | 60% Plant Factor PKR/kWh | PKR Pe kWh |
| 1 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | 0.1887 | 0.7233 | 1.3762 | 2.2936 | 4.570 |
| 2 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | 0.2223 | 0.6897 | 1.3762 | 2.2936 | 4.570 |
| 3 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | 0.2618 | 0.6502 | 1.3762 | 2.2936 | 4.570 |
| 4 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | 0.3084 | 0.6036 | 1.3762 | 2.2936 | 4.570 |
| 5 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | 0.3633 | 0.5487 | 1.3762 | 2.2936 | 4.570 |
| 6 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | 0.4280 | 0.4840 | 1.3762 | 2.2936 | 4.570 |
| 7 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | 0.5042 | 0.4078 | 1.3762 | 2.2936 | 4.570 |
| 8 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | 0.5939 | 0.3181 | 1.3762 | 2.2936 | 4.570 |
| 9 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | 0.6996 | 0.2124 | 1.3762 | 2.2936 | 4.570 |
| 10 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | 0.8241 | 0.0879 | 1.3762 | 2.2936 | 4.570 |
| 11 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 12 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 13 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 14 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 15 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 16 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 17 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 18 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 19 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 20 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 21 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 22 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 23 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 24 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 25 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | - | 0.4641 | 0.7736 | 3.050 |
| 26 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | | 0.4641 | 0.7736 | 3.050 |
| 27 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | | 0.4641 | 0.7736 | 3.050 |
| 28 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | | 0.4641 | 0.7736 | 3.050 |
| 29 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | | 0.4641 | 0.7736 | 3.050 |
| 30 | 2.1782 | 0.0990 | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | | | 0.4641 | 0.7736 | 3.050 |
| Levelized Tariff (1-30 Years) | | | 2.2772 | 0.1445 | 0.0484 | 0.0348 | 0.2197 | 0.0168 | 0.2525 | 0.3420 | 1.0586 | 1.7644 | 4.04 |

| | |
|---|---|
| Net Capacity | 209 MW |
| Reference Exchange Rate | PKR 60=1 US$ |
| Reference Fuel Price (Gas) LHV | PKR 326.76 per MMCFT |
| Reference US CPI | 190.3 for December 2004 as notified by the US Bureau of Labor Statistics. |
| Reference WPI (manufacturers) | 111.37 for December 2004 as notified by the Federal Bureau of Statistics |
| Net Efficiency | 51.20% |
| Levelized Tariff (at 60% plant factor) per kWh | US Cent = 6.7359 |

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Annex- II

# Orient Power Company Ltd.
## Modified Tariff (HSD)

| Year | Variable Charge PKR/kWh | | | Capacity Charge (PKR/kW/Hour) | | | | | | | | CPP | Tariff |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Fuel | Variable O&M | Total | Fixed O&M | Insurance | Working Capital Component | Return on Equity (ROE) | Return on Equity during Construction (ROEDC) | Loan Repayment | Interest Charges | Total Tariff | 60% Plant Factor PKR/kWh | PKR Per kWh |
| 1 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | 0.1887 | 0.7233 | 1.4159 | 2.3599 | 12.4045 |
| 2 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | 0.2223 | 0.6897 | 1.4159 | 2.3599 | 12.4045 |
| 3 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | 0.2618 | 0.6502 | 1.4159 | 2.3599 | 12.4045 |
| 4 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | 0.3084 | 0.6036 | 1.4159 | 2.3599 | 12.4045 |
| 5 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | 0.3633 | 0.5487 | 1.4159 | 2.3599 | 12.4045 |
| 6 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | 0.4280 | 0.4840 | 1.4159 | 2.3599 | 12.4045 |
| 7 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | 0.5042 | 0.4078 | 1.4159 | 2.3599 | 12.4045 |
| 8 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | 0.5939 | 0.3181 | 1.4159 | 2.3599 | 12.4045 |
| 9 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | 0.6996 | 0.2124 | 1.4159 | 2.3599 | 12.4045 |
| 10 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | 0.8241 | 0.0879 | 1.4159 | 2.3599 | 12.4045 |
| 11 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 12 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 13 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 14 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 15 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 16 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 17 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 18 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 19 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 20 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 21 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 22 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 23 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 24 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 25 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | - | 0.5039 | 0.8398 | 10.8844 |
| 26 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | | 0.5039 | 0.8398 | 10.8844 |
| 27 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | | 0.5039 | 0.8398 | 10.8844 |
| 28 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | | 0.5039 | 0.8398 | 10.8844 |
| 29 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | | 0.5039 | 0.8398 | 10.8844 |
| 30 | 9.9456 | 0.0990 | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | | | 0.5039 | 0.8398 | 10.8844 |
| Levelized Tariff (1-30 Years) | | | 10.0446 | 0.1445 | 0.0484 | 0.0745 | 0.2197 | 0.0168 | 0.2525 | 0.3420 | 1.0984 | 1.8306 | 11.8752 |

| | |
|---|---|
| Net Capacity | 209 MW |
| Reference Exchange Rate | PKR 60=1 US$ |
| Reference Fuel Price (HSD) Excl. GST | PKR 48.03 per Litre |
| Reference US CPI | 190.3 for December 2004 as notified by the US Bureau of Labor Statistics. |
| Reference WPI (manufacturers) | 111.37 for December 2004 as notified by the Federal Bureau of Statistics |
| Net Efficiency | 48.50% |
| Levelized Tariff (at 60% plant factor) per kWh | US Cent = 19.7920 |

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Annexure III

# Orient Power Company Ltd.
## Debt Servicing Schedule

KIBOR 13.72%
Premium 3.00%

| Period | Principal Million $ | Repayment Million $ | Mark-Up Million $ | Balance Million $ | Debt Service Millin $ | Annual Principal Repayment $ Million | Annual Interest $ Million | Annual Principal Repayment Rs. Million | Annual Interest Rs. Million | Principal Repayment Rs./kW/ Hour | Interest Rs./kW/ Hour | Total Debt Service Rs/kW/Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 134.0925 | 1.3523 | 5.6051 | 132.7402 | 6.9574 | | | | | | | |
| 2 | 132.7402 | 1.4088 | 5.5485 | 131.3314 | 6.9574 | | | | | | | |
| 3 | 131.3314 | 1.4677 | 5.4897 | 129.8637 | 6.9574 | | | | | | | |
| 4 | 129.8637 | 1.5291 | 5.4283 | 128.3346 | 6.9574 | 5.7579 | 22.0716 | 345.4721 | 1,324.2937 | 0.1887 | 0.7233 | 0.9120 |
| 5 | 128.3346 | 1.5930 | 5.3644 | 126.7417 | 6.9574 | | | | | | | |
| 6 | 126.7417 | 1.6596 | 5.2978 | 125.0821 | 6.9574 | | | | | | | |
| 7 | 125.0821 | 1.7289 | 5.2284 | 123.3532 | 6.9574 | | | | | | | |
| 8 | 123.3532 | 1.8012 | 5.1562 | 121.5520 | 6.9574 | 6.7826 | 21.0468 | 406.9588 | 1,262.8070 | 0.2223 | 0.6897 | 0.9120 |
| 9 | 121.5520 | 1.8765 | 5.0809 | 119.6755 | 6.9574 | | | | | | | |
| 10 | 119.6755 | 1.9549 | 5.0024 | 117.7206 | 6.9574 | | | | | | | |
| 11 | 117.7206 | 2.0366 | 4.9207 | 115.6839 | 6.9574 | | | | | | | |
| 12 | 115.6839 | 2.1218 | 4.8356 | 113.5622 | 6.9574 | 7.9898 | 19.8396 | 479.3888 | 1,190.3771 | 0.2618 | 0.6502 | 0.9120 |
| 13 | 113.5622 | 2.2105 | 4.7469 | 111.3517 | 6.9574 | | | | | | | |
| 14 | 111.3517 | 2.3029 | 4.6545 | 109.0489 | 6.9574 | | | | | | | |
| 15 | 109.0489 | 2.3991 | 4.5582 | 106.6497 | 6.9574 | | | | | | | |
| 16 | 106.6497 | 2.4994 | 4.4580 | 104.1503 | 6.9574 | 9.4118 | 18.4176 | 564.7097 | 1,105.0561 | 0.3084 | 0.6036 | 0.9120 |
| 17 | 104.1503 | 2.6039 | 4.3535 | 101.5465 | 6.9574 | | | | | | | |
| 18 | 101.5465 | 2.7127 | 4.2446 | 98.8338 | 6.9574 | | | | | | | |
| 19 | 98.8338 | 2.8261 | 4.1313 | 96.0076 | 6.9574 | | | | | | | |
| 20 | 96.0076 | 2.9442 | 4.0131 | 93.0634 | 6.9574 | 11.0869 | 16.7425 | 665.2160 | 1,004.5498 | 0.3633 | 0.5487 | 0.9120 |
| 21 | 93.0634 | 3.0673 | 3.8901 | 89.9961 | 6.9574 | | | | | | | |
| 22 | 89.9961 | 3.1955 | 3.7618 | 86.8006 | 6.9574 | | | | | | | |
| 23 | 86.8006 | 3.3291 | 3.6283 | 83.4715 | 6.9574 | | | | | | | |
| 24 | 83.4715 | 3.4682 | 3.4891 | 80.0032 | 6.9574 | 13.0602 | 14.7693 | 783.6102 | 886.1556 | 0.4280 | 0.4840 | 0.9120 |
| 25 | 80.0032 | 3.6132 | 3.3441 | 76.3900 | 6.9574 | | | | | | | |
| 26 | 76.3900 | 3.7643 | 3.1931 | 72.6258 | 6.9574 | | | | | | | |
| 27 | 72.6258 | 3.9216 | 3.0358 | 68.7042 | 6.9574 | | | | | | | |
| 28 | 68.7042 | 4.0855 | 2.8718 | 64.6186 | 6.9574 | 15.3846 | 12.4448 | 923.0761 | 746.6897 | 0.5042 | 0.4078 | 0.9120 |
| 29 | 64.6186 | 4.2563 | 2.7011 | 60.3623 | 6.9574 | | | | | | | |
| 30 | 60.3623 | 4.4342 | 2.5231 | 55.9281 | 6.9574 | | | | | | | |
| 31 | 55.9281 | 4.6196 | 2.3378 | 51.3086 | 6.9574 | | | | | | | |
| 32 | 51.3086 | 4.8127 | 2.1447 | 46.4959 | 6.9574 | 18.1227 | 9.7067 | 1,087.3639 | 582.4019 | 0.5939 | 0.3181 | 0.9120 |
| 33 | 46.4959 | 5.0138 | 1.9435 | 41.4821 | 6.9574 | | | | | | | |
| 34 | 41.4821 | 5.2234 | 1.7340 | 36.2587 | 6.9574 | | | | | | | |
| 35 | 36.2587 | 5.4417 | 1.5156 | 30.8169 | 6.9574 | | | | | | | |
| 36 | 30.8169 | 5.6692 | 1.2881 | 25.1477 | 6.9574 | 21.3482 | 6.4812 | 1,280.8915 | 388.8744 | 0.6996 | 0.2124 | 0.9120 |
| 37 | 25.1477 | 5.9062 | 1.0512 | 19.2415 | 6.9574 | | | | | | | |
| 38 | 19.2415 | 6.1531 | 0.8043 | 13.0885 | 6.9574 | | | | | | | |
| 39 | 13.0885 | 6.4103 | 0.5471 | 6.6782 | 6.9574 | | | | | | | |
| 40 | 6.6782 | 6.6782 | 0.2791 | 0.0000 | 6.9574 | 25.1477 | 2.6817 | 1,508.8628 | 160.9030 | 0.8241 | 0.0879 | 0.9120 |

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