

Before

**UTTARAKHAND ELECTRICITY REGULATORY COMMISSION**

**Petition No. 03 of 2016**

**&**

**Petition No. 40 of 2016**

**In the matter of:**

Petition filed under Section 62 & Section 86(1)(a) of the Electricity Act, 2003, read with the UERC (Terms & Conditions for Determination of Tariff) Regulations, 2011 and UERC (Terms & Conditions for Determination of Multi Year Tariff) Regulations, 2015 for determination of tariff for FY 2015- 16 & for the Control Period from FY 2016-17 till FY 2018-19 for supply of power to UPCL from 214 MW Gas based Kashipur Combined Cycle Power Plant of M/s Gama Infraprop Pvt. Ltd. at Mahuakhedaganj, Kashipur, District Udham Singh Nagar.

**In the matter of:**

Petition seeking approval of Business Plan for the Control Period starting from FY 2016-17 to FY 2018-19 for 214 MW Gas based Kashipur Combined Cycle Power Plant of Gama Infraprop Private Ltd. at Mahuakhedaganj, Kashipur, District Udham Singh Nagar, Uttarakhand.

**In the matter of:**

M/s Gama Infraprop Pvt. Ltd.

... Petitioner

**AND**

**In the matter of:**

Uttarakhand Power Corporation Ltd.

... Respondent

**CORAM**

**Shri Subhash Kumar      Chairman**

**Date of Order: May 16, 2017**

This Order relates to the Petitions filed by M/s Gama Infraprop Pvt. Ltd. (hereinafter referred to as "the Petitioner" or "Generator" or "M/s GIPL") for approval of Business Plan for the Second Control Period from FY 2016-17 till FY 2018-19 and determination of tariff for supply of power from its from 214 MW Gas based Kashipur Combined Cycle Power Plant to UPCL for FY 2015- 16 and for the Control Period from FY 2016-17 till FY 2018-19. The Petitioner had executed a

PPA for 107 MW capacity with the licensee and has initiated commercial operation of its one gas turbine generator and one steam turbine generator w.e.f. 16.03.2016.

## **1. Background and Submissions**

- 1.1 The Petitioner is a 214 MW gas based Combined Cycle Power Plant (CCPP) located in Mahuakheraganj, Kashipur, District Udham Singh Nagar Uttarakhand. This 214 MW gas based CCPP comprises of two gas turbine generator (GTG), each having a gross output of about 71 MW at site conditions, two heat recovery steam generators (HRSG) and one common steam turbine generator (STG) of about 72 MW capacity. The heat content of the exhaust gas from each of the gas turbine would be recovered from the associated dual pressure non reheat horizontal heat recovery steam generators (HRSG). The steam generated would then be expanded in a condensing type non-reheat steam turbine which drives an electric generator.
- 1.2 The name plate capacity of the gas based Power Station is 225 MW (ISO condition) which comprises of two GTGs, each having a gross output of about 76 MW, and one common steam turbine generator (STG) of about 73 MW. However, at site conditions the power plant will have a gross capacity of 214 MW. The Project is designed to use natural gas/Re-Gasified Liquefied Natural Gas (R-LNG) as the main fuels for power generation.
- 1.3 The Petitioner due to shortage of gas fuel allocation could not commission its plant which remained stranded for considerable duration until the Scheme for utilization of gas based power generation capacity was implemented by the Ministry of Power, Government of India vide OM No. 4/2/2015 - Th-1 dated 27.03.2015 (the "Scheme"). Subsequently, Power System Development Fund Support Agreement (PSDF Support Agreement) dated 18.09.2015 was signed between Government of India and the Petitioner and other agreements were executed pursuant to the requirements under the scheme.
- 1.4 UPCL had filed a Petition dated 11.12.2015 before the Commission seeking approval of the PPA it proposed to enter with the Petitioner for procurement of power from its 214 MW Gas based Kashipur Combined Cycle Power Plant. The Commission, in accordance with the provisions specified in the above referred Scheme dated 27.03.2015 of GoI, vide its Order dated 08.02.2016 approved the PPA for contracted capacity of 107 MW with certain modifications.
- 1.5 In the meantime, the Petitioner filed a Petition dated 22.12.2015 for determination of tariff for

supply of power from its 214 MW Gas based Kashipur Combined Cycle Power Plant to UPCL.

1.6 The Petitioner in its Tariff Petition made the following requests:

- a. Approve the Capital Cost of the Project which will be used for determination of Annual Fixed Charges for the Project;
- b. Determine the Tariff for the proposed supply of 107 MW (gross capacity) power to UPCL for the following period:
  - i. From first CoD till 31<sup>st</sup> March, 2017 under Section 62 of the Electricity Act, 2003 and the UERC MYT Regulations, 2011 and Regulation 55A of UERC MYT Regulation, 2015 read with the provisions of the GoI Scheme; and
  - ii. For FY 2017-18 to FY 2018-19, under Section 62 of the Electricity Act, 2003 and the UERC MYT Regulations, 2015 with specific reference to Regulation 55A.
- c. To allow the actual plant availability to be achieved based on the actual availability of gas in that particular financial year while carrying out the Truing-up exercise;
- d. To decide an interim tariff of Rs. 6.12/unit of electricity, which includes Rs. 4.70/unit as Capped Unit Price directly from the distribution licensee and Rs. 1.42/unit from the PSDF fund of the Government of India (through the distribution licensee), for supply of power to UPCL under the Scheme, for the period from CoD till 31<sup>st</sup> March, 2017;
- e. To direct UPCL to issue a Letter of Confirmation in the format provided in the PSDF Support Agreement executed by the Petitioner with the Ministry of Power, Government of India as per requirements of the Scheme;
- f. Provide approval for evacuation of power by injecting power at the adjoining 220 KV Mahuakheraganj sub-station of Power Transmission Company of Uttarakhand Limited (PTCUL) through 220 kV transmission line of the Petitioner already connected to the aforesaid sub-station for which the required Connection Agreement dated 13<sup>th</sup> October, 2011 has also been executed. The same evacuation system is being used for drawing start up power for the Power Station, till the time the Dedicated Transmission Line is commissioned.

1.7 The copy of the aforesaid Petition was forwarded to the Respondent (UPCL) for submission of its reply. A hearing was held on maintainability of the Petition on 08.01.2016 and the

Petition was admitted by the Commission.

1.8 On the Petitioner's request for grant of provisional tariff, the Commission asked the Respondent to furnish the written submissions on or before 12.01.2016 in the matter of determination of provisional tariff. The Respondent was also directed to issue Letter of Intent to the Petitioner for procurement of power latest by 15.01.2016 in accordance with the format provided at Annexure-I of the PSDF support Agreement executed by the Petitioner with MoP, GoI. Further, the Petitioner was directed to submit the following by 12.01.2016:

- a) *Basis of arriving at a station heat rate of 1925 Kcal/kWh.*
- b) *Basis of allocating the station assets amongst 107 MW proposed for sale to UPCL and balance 107 MW."*

1.9 Responses on the above referred queries were submitted by the Petitioner vide its letter dated 11.01.2016. UPCL vide its reply dated 12.01.2016 submitted that as there was no precedence of the terms and conditions to be incorporated in the PPA with a stranded gas based power station and genuine difficulty was being faced by it in drafting the terms and conditions, accordingly, guidance of the Commission with regard to relevant terms and conditions was required so that the same may be incorporated in the PPA.

1.10 The Commission in this regard clarified that both the parties may finalize the PPA having mutually agreed terms and conditions. UPCL had also submitted that the question of determining the interim tariff would only arise when a PPA is entered into by both the parties upon mutually agreed terms and conditions and hence, it would be proper that some more time is granted to it for filing its written submission in the matter. In this regard, the Commission had clarified that interim/provisional tariff is allowed to the generator to facilitate adhoc recovery of its charges pending determination of its tariff.

1.11 Accordingly, the Commission based on the information submitted by the Petitioner vide its Order dated 19.01.2016 had worked out the capacity charges and variable charges as Rs. 1.59 per unit and Rs. 4.88 per unit for the first year, total of which worked out to Rs. 6.44 per unit. Since in accordance with the PSDF Support Agreement entered into by the Petitioner with GoI on 24.09.2015, the capped unit price, i.e. the maximum price payable by the distribution licensee was Rs. 4.70 per unit and minimum PSDF support available to the generator was Rs. 1.20 per unit, making total recovery equivalent to Rs. 6.12 per unit, which was lower than the provisional tariff determined by the Commission. Hence, the Commission had allowed a provisional tariff of Rs. 4.70 per unit (exclusive of PSDF support) to be recovered by the

Petitioner from UPCL till determination of final tariff by the Commission.

1.12 Thereafter, in compliance to the deficiencies pointed out by the Commission vide its letter dated 05.04.2016, the Petitioner filed another petition dated 06.07.2016 seeking approval of Business Plan for the Control Period from FY 2016-17 to FY 2018-19 under Regulation 8 of UERC (Terms and Conditions for Determination of Tariff) Regulations, 2015 (in short, UERC MYT Regulations, 2015). The Petitioner in its Business Plan made the following requests:

- a. Admit the Business Plan and approve the Business Plan for GIPL for the Control Period from FY 2016-17 to FY 2018-19 in accordance with Regulation 8 of UERC MYT Regulations, 2015.
- b. Approve the Capital Cost of the Project which will be used for determination of Annual Fixed Charges for the Project.
- c. Approve planned outages of Power Station and also grant permission for change in planned outages depending upon requirement of SLDC, Discom and Petitioner.
- d. Allow the Petitioner to make revision to the current petition and submit additional & relevant information that may emerge or become available subsequent to this filing.
- e. Condone any inadvertent omission/errors/shortcomings and permit the "Petitioner" to add/change/modify/alter this filing and make further submissions as may be required at a future date.

1.13 During scrutiny of the Petitions, further additional deficiencies were sent to the Petitioner vide Commission's letters dated 07.01.2016, 05.04.2016, 31.08.2016, 26.10.2016, 30.11.2016, 08.12.2016, 30.03.2017 and 17.04.2017. The Petitioner submitted its reply on the deficiencies vide its letters dated 07.01.2016, 29.07.2016, 10.11.2016, 14.12.2016, 19.01.2017 and 24.04.2017.

1.14 UPCL submitted its reply on 21.09.2016 on the tariff Petition. The Respondent's reply was sent to the Petitioner for its comments. Respondent's comments, Petitioner's reply and Commission's views have been discussed in the subsequent Paras.

1.15 A meeting was held with the representatives of the Petitioner on 25.10.2016, wherein, the Petitioner was informed that the replies on the deficiencies pointed out by the Commission were partially submitted by the Petitioner with considerable delay. During the meeting, submissions made by the Petitioner were also discussed and it was asked to furnish

complete information latest by 10.11.2016. In response, the Petitioner vide its replies dated 02.11.2016 and 10.11.2016 made its submissions.

## **2. Petitioner's Submissions**

- 2.1 The Petitioner vide its petition dated 22.12.2015 submitted that the completed cost of project was estimated to be Rs. 834.64 Crore at the time of financial appraisal by Banks. Its funding was structured with a Term Loan of Rs. 584.25 Crore and promoter's equity of Rs. 250.39 Crore at a Debt:Equity Ratio of 70:30. The lead lender had appraised the Project in January 2011. The Petitioner had placed the EPC contract with M/s Luna Infraprop Private Limited with specific conditions to procure critical equipment from reputed suppliers. Accordingly, the Gas Turbine generator (GTG) had been sourced from GE, France while orders for steam turbine generator and HRSG were placed on reputed capital equipment suppliers namely M/s Hangzhou Steam Turbine Co. Ltd. (China) and M/s Thermax Ltd. Pune. The orders for utility and ancillary equipment have been placed on reputed suppliers like Areva, ABB, Atlas Capco, Voltamp, Thermo Systems and so on.
- 2.2 The Petitioner submitted that project was initially expected to achieve date of commercial operation by 31.03.2012. However, the country suffered deficit in supply of domestic natural gas and prices in the spot market for imported RLNG sky rocketed whereby making the cost of energy unviable for Discoms to procure. The existing gas based power plants as well as those power plants which were under construction got stranded. The Petitioner submitted that it had drawn major portion of debt and had incurred capital expenditure on the Project. After the commitment from Government of India in respect of supply of gas under the Scheme, the commissioning and balance activities were taken up at Gama Kashipur CCPP. The Petitioner had in its petition submitted that the project was expected to achieve date of commercial operation by January 2016. As a result of this delay which was purely due to uncontrollable factors (non-availability of domestic gas) substantial amount of interest during construction (IDC) has been incurred.
- 2.3 The Government of Uttarakhand vide Government Order No. 456(2)/1/2015-04(03)/160/2010 dated 28.04.2015 directed UPCL to purchase power from Gama Kashipur CCPP equivalent to 50% of its Installed Capacity, i.e. 107 MW on gross capacity basis at a net capped tariff of Rs. 5.50 per unit of electricity. Subsequently, the Government of India, based on the bidding process under the Scheme revised the net capped tariff payable by the Distribution Companies at Rs. 4.70 per unit of electricity, excluding the PSDF support.

- 2.4 The Petitioner submitted that in order to supply 107 MW (gross capacity) of power to UPCL at normative availability of 85%, the Petitioner has to operate one GTG (out of 2 GTGs) and common STG (at partial load) at partial load and there cannot be any other combination in the combined cycle operation given the present configuration of the Power Station. Thus, the installed capacity to be utilized by the Petitioner for supply of power to UPCL would be 143 MW (one GTG 71MW+STG 72MW=143 MW). As the STG is designed to take steam from both HRSGs (Waste heat recovery boiler) waste heat of both the Gas turbines, therefore, it could not have been operated at full capacity. The Petitioner requested the Commission for considering the installed capacity as 143 MW for the purpose of determination of capital cost of Rs. 694.66 Crore. Further, the Petitioner also requested the Commission to consider the operational capacity of the plant as 107 MW (in line with the Power Purchase Agreement proposed to be executed with UPCL) for the purpose of calculation of O&M expenses and interest on working capital since these costs are closely related to the operational capacity.
- 2.5 The Petitioner also submitted that the Gas allocation from the Government of India for FY 2016-17 is likely to be at the 50% PLF of the total plant capacity and based on the said allocation the plant will be able to achieve the Normative Plant Availability Factor as specified in the Regulations for the capacity to be utilized for UPCL. If this does not happen then the Petitioner would request the Commission at an appropriate stage to relax the Normative Plant Availability Factor.
- 2.6 The Petitioner had in its Petition claimed a tariff based on the estimated capital cost of Rs. 694.66 Crore being the cost of the commissioning of one GTG (out of 2 GTGs) and STG as on 20.01.2016. The Petitioner had also submitted an estimated overall project cost of Rs.1057.72 Crore as on 20.03.2016.
- 2.7 Since the petition for fixation of tariff had been filed prior to commissioning of the project based on the estimated capital cost, the Commission asked the Petitioner to submit actual executed (duly audited) cost of the project and corresponding computation of tariff in accordance with the Regulations. The Petitioner had furnished the details of capital cost as on first CoD, i.e. 16.03.2016 vide its letter dated 29.07.2016 and letter dated 10.11.2016 subsequent to commissioning of the project. The Petitioner's submissions, Respondent's comments and the Commission views/decisions on the same have been discussed in subsequent paras.

### 3. Respondent's Submissions

- 3.1 The Respondent submitted that the Petitioner in its DPR and also in the petition has stated the name plate rating/gross capacity of the plant as 225 MW. While the Petitioner in its petition has shown the capacity as 214 MW due to site condition against 225 MW for the purpose of determination of tariff and the said assumed capacity is totally hypothetical and is not permissible as per Regulation. The Respondent submitted that as per Regulation the total cost of the generating station must correspond to its total capacity of 225 MW. The Respondent also submitted that the generator in its petition has stated the capital cost of the generating station as per DPR is Rs. 834.64 Crore for 225 MW and for the contracted capacity, i.e. 107 MW the related cost proportionately comes out to Rs. 397 Crore. The Respondent stated that correctness of capital cost is required to be scrutinized.
- 3.2 The Respondent submitted that the Petitioner has admitted that there has been time over run and cost over run in the project, however, the Petitioner has failed to show that the same was not attributable to the causes for which the generator himself is responsible. The Respondent submitted that the Interest During Construction as name itself suggest is to be considered for the construction period itself and the same cannot be stretched so as to include the time which the generator spent in procuring the fuel or commencing test and trial of the plant and also ultimately commissioning the same irrespective of the fact whether the delay after completion of the construction of the plant is attributable to the generator or not.
- 3.3 The Respondent submitted that Regulation 21(9) of MYT Regulation, 2015 categorically provides that interest during construction shall be computed from the date of infusion of the debt fund and after taking into account the prudent phasing of fund upto SCOD, and the same caters to the situation upto the Schedule Date of Commissioning in principle. The Respondent also mentioned that there may be a situation where the generator during the period of construction tied up the generated power by entering into a power purchase agreement and therein also agreeing to the schedule date of commissioning as mentioned in the PPA and the terms of PPA may include the effect in not being able to commission the plant within schedule time, in such cases the other party has an opportunity to find out the reasons for delay and is available with the documents to establish the cause for the delay and hence would be in a position to

show that the same is attributable solely to the generator however in cases like the present one when the plant whose construction has been completed long time back enters into a PPA after more than 3 years and commissions the plant, it is not possible for the other party to counter or find the falsity of the statement made by the Petitioner, hence, in such cases the IDC cannot be considered for a period beyond the time when the construction was completed which in the present case is 31<sup>st</sup> March, 2012. It is pertinent to mention here that during this period as the Respondent had no control over the Petitioner or any interest in the fact whether the Petitioner was getting delayed in commissioning or is not for any other reason being able to commission within time, the effect of the delay should be borne by the petitioner himself otherwise it would imply that the generator in any case will get the full recovery of all the cost incurred whereas the same without any reason would be borne by the consumers of the State. The Respondent submitted that in the present case the petitioner is not entitled to any IDC for period beyond the date of completion of construction.

3.4 The Respondent further submitted that out of 27,000 MW Stranded Gas project around 9,000 MW has procured the domestic gas during this period and it is surprising that the Petitioner all this while did not make any effort to run the plant or procure the fuel, therefore, it is the incompetency of the Petitioner who failed to secure the domestic gas and commission the plant within time, and, therefore, claiming IDC and pre-commissioning expenses is not justifiable as it would amount to compensating the Petitioner for its own wrong. It is also pertinent to mention here that the petitioner all this while has not obtained any open access neither it has any understanding of arrangement with any consumer of the licensee in the State, which clearly show that the generator all this while was never ready to run the plant, it would be totally inequitable to burden the consumer of the state with the extra cost for making the recovery possible for the generator. That the State of Uttarakhand is one of the first state to come forward and make long term arrangement to purchase power from the stranded gas plant, thereby cooperating with the policy of the Central Government to help the stranded gas plant from becoming a non performing asset however the same cannot go to the disadvantage of the respondent rather the petitioner in all fairness should have not claimed any IDC in the first place.

3.5 Also, the Respondent submitted that due to the reason of delayed commissioning the

petitioner is claiming the IDC for the entire period as well as also claiming the pre-operative expenses which can't be claimed as the same has been included in the capital cost in DPR. If any maintenance was required after 31<sup>st</sup> March, 2012, it would be on the part of petitioner and cannot be more than the one provided for in the Regulations. That the Petitioner has just made a bald statement regarding having no guarantee cover, the same needs to be proved by producing relevant and authentic document. The respondent would like to humbly submit that apart from the guarantee cover the Petitioner might have, certain equipment themselves may have manufacturer guarantee, whether the supplier of the equipments has given the guarantee need to be disclosed by the Petitioner, and further it has to be shown whether the guarantee extends from the supply of the equipment or from the date of commissioning because if the guarantee has been given from the date of supply then the total guarantee of the equipments will be reduced by the time of delay hence the total life of the equipments will not be 25 years and it may be possible that after 22 years of plant life the petitioner may claim R&M or will provide less generation as the case may be.

- 3.6 Further, the Respondent submitted that even if, for the sake of evaluating the calculation of the petitioner, the capital cost is considered as Rs. 397 Crore as shown above, as per MYT Regulation 2015 the loan part comes to Rs.  $397 \times 0.7 =$  Rs. 278 Crore, therefore, the IDC claim upto March, 2015 @ 11.2% p.a. comes out to Rs. 93 Crore for 3 years as the PSDF scheme was applicable from 1<sup>st</sup> April, 2015 onwards.
- 3.7 The Respondent submitted that the initial expected commissioning date of project was 31<sup>st</sup> March, 2012 but the Petitioner in its petition has shown the 1<sup>st</sup> CoD on 20<sup>th</sup> January, 2016 with the reason that the non-availability of gas was the reason for delay of the project and has claimed IDC of Rs. 183.67 Crore upto the 1<sup>st</sup> CoD with additional pre-commissioning expenses of Rs. 41.28 Crore.
- 3.8 Further, the Respondent submitted that if the reason for delay was the non-availability of gas/costly gas as claimed by the Petitioner then it is pertinent to mention that PSDF support was provided since 1<sup>st</sup> April, 2015, therefore, the reason of non-availability of gas/costly gas can't be claimed from 1<sup>st</sup> April, 2015 onwards.
- 3.9 The Respondent submitted that the main reason for delay after 1<sup>st</sup> April, 2015 was the absence of PPA/sale of power which cannot be treated as Force Majeure but it is simply the failure of the Petitioner to secure PPA for sale of power as neither the Petitioner

tried to sell its power in IEX/PXIL or through short term tender.

3.10 The Respondent also requested that following parameters may kindly be considered before finalizing the capital cost:

- (a) As the Petitioner has defined the name plate capacity of plant installed of 225 MW, hence, the total capital cost of the project should be pro-rata adjusted for the functional capacity of 214 MW.
- (b) The Petitioner's claim that for contracted capacity of 107 MW, actual gas and steam turbine used will be of 143 MW is based on false and arbitrary basis and for computation of capital cost, cost pertaining to actual contracted capacity should only be considered.
- (c) IDC beyond construction period, i.e. beyond 31.03.2012 should not be considered for the reasons explained above and in fact the IDC computed up to the date of construction should be distributed proportionately between the contracted and non contracted capacity of the plant.
- (d) As has been considered by the Petitioner during the capitalization of assets at the time of first COD, complete value of land and many other assets were taken while the proportionate value should be considered.

Further, above considerations are more relevant in the light that the remaining half or the un-contracted capacity of the plant should also be loaded equivalently and at par with the contracted capacity.

3.11 The Respondent submitted that the Petitioner has requested to fix the NAPAF as per the actual due to uncertainty of gas, the same cannot be considered being against the provisions of the regulation, wherein the AFC has to be calculated by considering the NAPAF of 85%. Now after having a long term PPA of 25 years, it is the responsibility of the Petitioner to arrange the gas for 25 years and if petitioner is unable to secure the long term arrangement of gas then there is no use of having the long term PPA. Moreover, the Petitioner is requesting for recovery of AFC in case of non-availability of gas, there may be a possibility that the Petitioner may associate any other inefficiency with the non availability of gas and thereby get the benefit of the same too, further if the recovery is assured for uncertainty of gas which would also mean uncertainty of the units produced, then it would mean that the petitioner will any how get the recovery of

its cost together with other benefits like RoE etc, on the other hand the respondent will have to bear the same without even having the requisite units of power, which would not only make the per unit power purchase costlier but also make the planning process of the respondent ineffective and uncertain. Further, it would be reasonable to consider the concern of the Respondent regarding non-availability of power in future in case of non-availability of fuel linkage to the Petitioner, that the recovery of total AFC should be considered through per unit basis of energy generated and not through the fixed charge component allowed in normal cases. It would be more appreciated in the context that in case of non supply of energy respondent would not only be affected by the shortage of power for which some costlier power needs to be arranged but also has to pay the fixed charges to the petitioner. The PPA has been done by the purchaser to receive power and the generator who want to have a long term PPA with the purchaser will have to fulfill the requirement of purchaser and it is also pertinent to mention that in case of variation in schedule the power purchase planning of respondent may adversely get affected and the Respondent has to arrange the power on a very short period where there are chances that the respondent may get costly power. Therefore, in case there will be any deviation then there should rather be a penalty clause for generator as it has already been facilitated by defining its power as must-dispatch.

3.12 The NAPAF has to be maintained at 85% and for 104 MW contracted capacity it comes out to be 88.4 MW RTC. As the concept of gas based plan is to meet out the power deficit during peak hour due to the capability of quick start/stop. Therefore, the Respondent requested the Commission to specify the minimum & maximum technical load for which advance scheduling may be provided by UPCL to maintain yearly NAPAF of 85%.

3.13 Further, the Respondent submitted that the NAPAF was a crucial factor in recovery of the cost and the same has to be not only certain but also such as to prompt efficiency of the generator to generate power to the maximum possible capacity, otherwise not only it will promote inefficiency but will also make the power costlier compensating the generator of its inefficiency, further considering the effect of uncertain NAPAF as has been requested by the petitioner.

3.14 The Respondent submitted that the petitioner has mentioned about the PSDF support, however, the petitioner has not disclosed as to what will be the effect in case there is

increase in PSDF support either quantum or duration or when there is no PSDF support given by Government then what would be the effect of the same. The Respondent submitted that the benefit of any increase in any PSDF support shall be passed on to the respondent and in case the PSDF support is not provided the effect of the same shall be borne by the generator.

- 3.15 The Respondent submitted that under the scheme of PSDF support the petitioner is not entitled for RoE, however, otherwise as per the Regulation the RoE has to be given to the generator, there are various contingencies in the matter and the Regulation of tariff does not specifically cater to the situation of stranded gas based plants, there is a possibility that the petitioner in order to obtain RoE may not be interested in getting PSDF support even when the same is available moreover it would not be possible for the respondent to justify the cause as to why the PSDF support was not extended to the generator hence it is requested that provision be made in the tariff order that in case PSDF support is available and the same is not extended to petitioner then in such case also petitioner should not be entitled to claim any RoE or in the alternative it should be specifically provided that the issue regarding PSDF support shall be settled by the generator with the respondent and the generator should be bound to disclose to the respondent all the efforts made by the petitioner in obtaining the PSDF including bidding.
- 3.16 The Respondent submitted that the request of the Petitioner for some additional spares under the ambit of initial spares, to be purchased in coming 3 years of the control period is meaningless and arbitrary as the contracted capacity of plant has already been commissioned and for mere taking advantage of the facility of allowance of spares up to 4% of plant and machinery cost, the said request has been raised. It is pertinent to mention that all the initial spares should have been purchased and taken in capital cost at the time or before the CoD of the plant and not later. Further, it is important to consider that the plant consisted of 2 identical sets of generators for which one common spare may be considered and considering half the capacity of the plant as contracted capacity that amount should also be divided proportionately.
- 3.17 The Respondent submitted that in the petition, the computation for cost of Start-up power and commissioning expenses, the petitioner has claimed Rs. 19.2 Crore till first CoD as the pre-operative cost. In this regard, it is to submit that the payment against

pre-operative expenses of 1<sup>st</sup> CoD has already been paid to the petitioner on actual basis that is Rs. 9.45 Crore. Therefore, it is requested not to consider the expenses claimed by the Petitioner.

3.18 Further, the Respondent submitted that M/s Gamma has shown its total cost as Rs. 1057 Crore for the 143 MW Gas based project and whereas M/s Sravanthi Energy Pvt. Ltd. has shown Rs. 1452.19 Cr. for 214 MW Gas based project. That the actual cost needs to be proved by the petitioner with the support of verified documents, clearances, bills etc. for establishing the actual cost.

3.19 The Respondent submitted that IDC as claimed by the petitioner is of Rs. 279.67 Crore which is from the inception till the commissioning of the plant. It is pertinent to mention here that the PSDF scheme was started from 1<sup>st</sup> April, 2015 onwards, it was the liability of the petitioner to secure a PPA as the power may be sold at IEX/PXIL, through short term tender or fuel arrangement and hence the time period from completion of plant till the original CoD cannot be included for the purpose of calculating IDC as the same is attributable to the petitioner and cannot be considered as a force majeure situation. Therefore, the period of IDC disallowed should be from 31<sup>st</sup> March, 2012 to 1<sup>st</sup> April, 2015 and the same is as hereunder:

Capital Cost: Rs. 695 Crore

Loan: 70% of Capital Cost, i.e. 486.5 Crore

IDC: 11.2% of Loan = 54.48 Crore pa

and till 1st April 2015 it is equal to  $54.48 * 3 =$  Rs. 163 Crore

While the Petitioner has claimed Rs. 279.67 Crore as IDC, creating a difference of Rs. 116 Crore

The Petitioner, in light of above, is not entitled to claim IDC more than 279.67 Crore.

3.20 The Respondent also submitted that the Petitioner had intimated that the increase in project cost is mainly due to IDC component as a result of delay in commissioning due to non-availability of gas. The total IDC claimed is Rs. 279.67 Crore on the ground of delay in commissioning. In this regard, it is to be submitted that the reasons given by M/s Gamma are not sufficient and show the incompetency as the delay was solely attributable to the petitioner and therefore it should not be allowed. Moreover, the reasons like not having a PPA, non-availability of gas, delay in commissioning, transmission constraints

or any other on part of the petitioner cannot be attributed to Force majeure events and hence cannot be included in capital expenditure and cannot be claimed as per the Regulation.

3.21 The Respondent submitted that for tariff determination the actual capital cost is to be taken and not the additional cost incurred after installing the plant and before the commissioning of the plant. As there is no valid reasons for passing on the additional cost to the consumer of Uttarakhand due to the petitioner fault.

3.22 The Respondent submitted that M/s Gama has claimed Rs. 9.87 Crore/MW (Rs. 1057 Crore for 107 MW) whereas M/s Sravanthi has claimed Rs. 6.78/MW (Rs. 1452.19 Crore/214 MW). Since both the plants are of same technology and in same locations even after that there is huge difference in per MW cost. Therefore, the Commission is requested to calculate the per MW cost on actual basis taking both of them into consideration and fix whichever is lower so that it would be in the interest of consumers.

3.23 Further, the Respondent submitted that in case NAPAF is not achieved then the factor for the same cannot be attributed to Non-availability of Gas. Moreover shutdown of the plant or any other reason on the part of the Generator also cannot be the reason for not achieving the NAPAF.

3.24 The Respondent also submitted that the tariff determination is for 143 MW plant whereas UPCL has signed the PPA for 104 MW. Therefore, the Commission is requested to evaluate the tariff on 107 MW capacity. The Respondent requested the Commission to take 50% of the total capacity and capital expenditure while determining the tariff.

#### **4. Petitioner's Submissions, Commission's Analysis, Scrutiny and Conclusion on Business Plan for the Control Period**

4.1 UERC Tariff Regulations, 2015 specify that the generating company has to file a Petition seeking approval of the Business Plan for the Control Period from FY 2016-17 to FY 2018-19. Relevant Regulation 8 of the UERC Regulations, 2015 specifies as under:

*"8. Business Plan*

*(1) An Applicant shall submit, under affidavit and as per the UERC (Conduct of Business) Regulations, 2014, a Business Plan by November 30th, 2015, for the Control Period of*

*three (3) financial years from April 1, 2016 to March 31, 2019,*

*a) The Business Plan for the Generating Company shall be for the entire control period and shall, inter alia, contain-*

*(i) Capital investment plan, which shall include details of the investments planned by the Generating Company for existing stations, yearly phasing of capital expenditure along with the source of funding, financing plan and corresponding capitalization schedule. This plan shall be commensurate with R&M schemes and proposed efficiency improvements for various plants of the company;*

*(ii) The capital investment plan shall show separately, on-going projects that will spill over into the years under review, and new projects (along with justification) that will commence in the years under review but may be completed within or beyond the tariff period;*

*(iii) The Generating Company shall submit plant-wise details of the capital structure and cost of financing (interest on debt and return on equity), after considering the existing market conditions, terms of the existing loan agreements, risks associated in generation business and creditworthiness;*

*(iv) Details related to major shut down of machines, if any;*

*(v) Trajectory of performance parameters;"*

4.2 The Commission vide its letter dated 05.04.2016 had asked the Petitioner to file a Petition seeking approval of Business Plan for the relevant Control period. In response, the Petitioner filed a Petition dated 06.08.2016 seeking approval of the Business Plan for the Control Period FY 2016-17 to FY 2018-19 under Section 62 & 86(1)(a) of the Electricity Act, 2003 read with the Regulation 8 of UERC (Terms & Conditions for Determination of Multi Year Tariff) Regulations, 2015 and in compliance with the Commission's Order dated 20.11.2015.

The Commission held a hearing on 07.09.2016 in the matter and admitted the Petition. The Capital works related to the Control Period as submitted by the Petitioner are as follows:

**Table 1: Additional capital expenditure as planned during FY 2016-17 to FY 2018-19 (Rs in Crore)**

Particulars	2016-17	2017-18	2018-19	Claimed under head
	Projected	Projected	Projected	UERC MYT Regulation 2015
Land	5.00	0.00	0.00	Regulation 22(1) (a) & (b)
Civil Works	5.50	0.00	0.00	Regulation 22(1) (a) & (b)
Plant & Machinery (Transmission Line)	16.62	0.00	0.00	Regulation 22(1) (a) & (b)
Plant & Machinery ( including Spares)	30.00	6.00	6.00	Regulation 22(1) (c)
Furniture and Fixtures	1.50	0.00	0.00	Regulation 22(1) (b)
Office Equipment & Others	0.50	0.00	0.00	Regulation 22(1) (b)
Computers	0.00	0.00	0.00	
Vehicles	1.00	0.00	0.00	Regulation 22(1) (b)
<b>Total</b>	<b>60.12</b>	<b>6.00</b>	<b>6.00</b>	

The expenditure on major item claimed has been examined as follows:

#### 4.3 Initial Spares

The Petitioner submitted that it has not considered any initial spares at the time of CoD of 1<sup>st</sup> Unit of the Plant. Further, the Petitioner submitted that it would procure initial spares of Rs. 42.00 Crore in the second Control Period which is within the ceiling limit as specified in Regulations. Initial spares as claimed by the Petitioner have been considered at present, subject to the ceiling limit specified in Regulation 21(11) of UERC Tariff Regulations, 2015. The Initial spares have been dealt in the subsequent Paras. However, the same will be reviewed at the time of truing up based on the audited accounts and capital cost.

#### 4.4 Land and Civil Works

The Petitioner submitted that Land would be purchased for construction of township. The Petitioner has already identified land of 7 acre which is expected to be valued at Rs. 0.70 lakh – Rs 0.75 lakh per acre as per the prevailing rate (estimated total cost Rs. 5 Crore). In support of the capital cost of land, the Petitioner has submitted the estimated civil work to be done. Detail of the same is as follows:

**Table 2: Expenditure on Civil Works for the Control Period claimed by the Petitioner**

Number	Size of quarters (Sqft)	Construction cost (Rs./ Sqft)	Total cost (Rs. Crore)
<b>Quarters</b>			
5	1,500	1,500	1.1
10	1,000	1,500	1.5
25	600	1,250	1.9
<b>Administrative Building</b>			
1	5,000	2,000	1.0
<b>Total cost</b>			<b>5.5</b>

In this regard, the Commission would like to advise the Petitioner to work out the cost benefit analysis for construction of residential quarters and administrative buildings before taking such works and submit the same to the Commission during truing up exercise. The Commission will take a view on the same while carrying out the truing up on prudent basis.

#### **4.5 Plant and Machinery- Transmission line**

The Petitioner submitted that for permanent evacuation of power from the Gama Kashipur CCPP, the Petitioner is developing a dedicated transmission system comprising of a 15 km long 220 kV Double circuit transmission line using Zebra conductor from its power plant to Loop In Loop Out at Kashipur – Pantnagar 220 kV Transmission line. It will enable the Petitioner to feed power into 440/220 kV Kashipur substation owned by PTCUL. Presently this line is under construction. The estimated cost of Rs. 16.62 Crore has been claimed for the 15 km long line. The Commission appreciates the need for permanent transmission system dedicated for evacuation of power from the Petitioner's plant, and also observed that vide its Order dated 19.01.2016 the Petitioner was allowed connectivity/evacuation of power through spare 220 kV bay at 220 kV S/s Mahuakheraganj till the time there is availability of transmission capacity as follows:

*"5.In this regard, the Commission is of the view that if any clarification is required by Respondent No. 2, it may do so by filing a separate Petition in the matter. The query to Respondent No. 2 was specific as to the current status of the above referred evacuation system with regard to the loading and other technical parameters including the design parameters. In this regard, Respondent no. 2 vide its letter dated 12.01.2016 has informed that at present the capacity is available in the 220 kV S/s Mahuakheraganj and the power may be evacuated through the 220 kV spare bay till M/s Beta Infratech Pvt. Ltd. starts evacuation of power. In this regard, the Commission is of the view that generation of power should not be bottled up if the capacity exists in the Sub-station/bay/line. Further, it is the duty of the STU to facilitate evacuation of power. Hence, the Commission in this regard directs Respondent No. 2 to allow evacuation of power from the above mentioned generating station at the earliest till the time there is availability of transmission capacity in the spare 220 kV bay at 220 kV S/s Mahuakheraganj in accordance with the UERC (State Grid Code) Regulations, 2007."*

Apparently connectivity to the Petitioner has been allowed until M/s Beta Infratech Pvt. Ltd. initiate evacuation of power. Once M/s Beta starts generation of

power additional transmission capacity will not remain available for evacuation of power from the Petitioner's plant. **Accordingly, the Petitioner is directed to complete the works related to dedicated transmission line so as to avoid any dispute on evacuation related issues with STU and other upcoming generating stations.** However, it is understood that no substantial progress has been made by the Petitioner in this regard, accordingly, the Commission has not considered any expenses in this regard while determining the AFC for FY 2017-18. However, the same will be reviewed on completion of such works during the performance review and the truing up exercise.

#### **4.6 Fixtures and Office Equipment**

The Petitioner submitted that Fixtures and Office Equipment (such as air conditioning, CCTV system, safety equipment, telecommunication equipment, etc.) of Rs. 1.5 Crore and Rs. 0.5 Crore respectively are for the township and the admin building that will be built. Further, the Petitioner submitted that it will purchase vehicles for easy commuting of the staff and labourers within the plant and township as well as to the nearest town.

With regard to Additional Capitalization claimed by the Petitioner for FY 2016-17, the Commission is of the view that the proper cost benefit analysis is required to be done. Hence, the Commission has not considered any additional capitalization at this point of time. However, the same shall be reviewed at the time of truing up based on the audited accounts of the respective years.

#### **4.7 Financing Plan**

The Petitioner submitted that the capital expenditure to be incurred in FY 2016-17, FY 2017-18 and FY 2018-19 are to be financed by a mix of debt and equity in the ratio of 70:30. As mentioned above, the Commission has not considered the additional capitalisation. However, based on the actual admissible additional capitalization and actual financing, truing up will be done for the purpose of determination of Tariff.

## 4.8 Major shutdown plan for the plant

### 4.8.1 Maintenance plan

The Petitioner submitted that the availability of a generating unit is dependent on the outages considered for the unit, both forced and planned. While the forced outages are minimized by having a robust maintenance plan, the planned outages are necessary for the smooth functioning of the unit. Either or all the following is included in an outage:

- Schedule Preventive Measures
- Audit History based Maintenance
- Overall Operational Constraints
- Technological Upgradation
- Performance Improvement Measures
- Statutory Compliances
- Life Sustenance, Extension, Enhancement Actions

The proposed outage plan for the project during the control period is shown in the tables below:

**Table 3: Maintenance schedule for FY 2016-17**

MONTH	Gas Turbine-1/ HRSG -1		Steam Turbine		Gas Turbine-2/ HRSG -2	
	DETAILS	OUTAGE HOURS	DETAILS	OUTAGE HOURS	DETAILS	OUTAGE HOURS
Apr-16	---	0	---	0	HRSG-2 commissioning activities like Alkali boil out, Steam blowing in progress. Expected COD-2 by 31 <sup>st</sup> Aug 2016.	
May-16	Offline water wash	24	---	0		
Jun-16	---	0	---	0		
Jul-16	Offline water wash	24	---	0		
Aug-16	---	0	---	0		
Sep-16	Offline water wash	24	---	0		
Oct-16	---	0	---	0	Offline water wash	24
Nov-16	---	0	---	0	---	0
Dec-16	GT-1: Offline water wash & HRSG-1: Annual Inspection - Hydro test Shutdown: 4 days	96	---	0	Offline water wash	24
Jan-17	---	0	---	0	---	0
Feb-17	Offline water wash	24	---	0	Offline water wash	24
Mar-17	---	0	---	0	GT-2: Offline water wash & HRSG-2: Annual Inspection - Hydro test Shutdown: 4 days	96
Yearly		<b>192</b>		<b>0</b>		<b>168</b>

**Table 4: Maintenance schedule for FY 2017-18**

MONTH	Gas Turbine-1/ HRSG -1		Steam Turbine		Gas Turbine-2/ HRSG -2	
	DETAILS	OUTAGE HOURS	DETAILS	OUTAGE HOURS	DETAILS	OUTAGE HOURS
<b>Apr-17</b>	Offline water wash	24	---	0	---	0
<b>May-17</b>	---	0	---	0	Offline water wash	24
<b>Jun-17</b>	Offline water wash	24	---	0	---	0
<b>Jul-17</b>	---	0	---	0	Offline water wash	24
<b>Aug-17</b>	Offline water wash	24	---	0	---	0
<b>Sep-17</b>	---	0	---	0	Offline water wash	24
<b>Oct-17</b>	Offline water wash	24	---	0	---	0
<b>Nov-17</b>	---	0	---	0	Offline water wash	24
<b>Dec-17</b>	GT-1: Boroscopic Inspection & Offline water wash, intake air filter replacement & HRSG-1: Annual Inspection - Hydro test Shutdown: 4 days	96	---	0	---	0
<b>Jan-18</b>	---	0	---	0	Offline water wash	24
<b>Feb-18</b>	Offline water wash	24	---	0	---	0
<b>Mar-18</b>	---	0	---	0	GT-2: Boroscopic Inspection & Offline water wash, intake air filter replacement & HRSG-2: Annual Inspection - Hydro test Shutdown: 4 days	96
<b>Yearly</b>		<b>216</b>		<b>0</b>		<b>216</b>

**Table 5: Maintenance plan FY 2018-19**

MONTH	Gas Turbine-1/ HRSG -1		Steam Turbine		Gas Turbine-2/ HRSG -2	
	DETAILS	OUTAGE HOURS	DETAILS	OUTAGE HOURS	DETAILS	OUTAGE HOURS
Apr-18	Offline water wash	24	---	0	---	0
May-18	---	0	---	0	Offline water wash	24
Jun-18	Offline water wash	24	---	0	---	0
Jul-18	---	0	---	0	Offline water wash	24
Aug-18	Offline water wash	24	---	0	---	0
Sep-18	---	0	---	0	Offline water wash	24
Oct-18	Offline water wash	24	---	0	---	0
Nov-18	---	0	---	0	Offline water wash	24
Dec-18	GT-1: Offline water wash, intake air filter replacement & HRSG-1: Annual Inspection - Hydro test Shutdown: 4 days	96	---	0	---	0
Jan-19	---	0	---	0	Offline water wash	24
Feb-19	Offline water wash	24	---	0	---	0
Mar-19	---	0	---	0	GT-2: Offline water wash, intake air filter replacement & HRSG-2: Annual Inspection - Hydro test Shutdown: 4 days	96
Yearly		216		0		216

#### 4.9 Trajectory of Performance Parameters

The Petitioner has submitted trajectory of performance parameters in the Table given below:

**Table 6: Trajectory of performance parameters**

Parameters	Unit	2015-16	2016-17		2017-18	2018-19
		Actual	Projected	Projected	Projected	Projected
Duration		COD 1 (16 <sup>th</sup> Mar 2016) to 31 <sup>st</sup> Mar 2016	1 <sup>st</sup> Apr 2016 to COD 2 (31 <sup>st</sup> Aug 2016)	COD 2 (31 <sup>st</sup> Aug 2016) to 31 <sup>st</sup> Mar 2017	1 <sup>st</sup> Apr 2017 to 31 <sup>st</sup> Mar 2018	1 <sup>st</sup> Apr 2018 to 31 <sup>st</sup> Mar 2019
Number of days		16	153	212	365	365
Installed capacity	MW	107	107	214	214	214
Aux. (Normative)		2.81%	2.50%	2.50%	2.50%	2.50%
Availability (Normative)		59.5%	85.0%	85.0%	85.0%	85.0%
Gross Generation Normative	MU	24.4	334.0	925.5	1593.4	1593.4
Auxiliary Consumption	MU	0.7	8.3	23.1	39.8	39.8
Net Generation Normative	MU	23.8	325.6	902.4	1553.6	1553.6

The Commission has noted the submission made by the Petitioner for maintenance schedule and corresponding shutdown hours of its plant. Since the Petitioner is the first gas power based generating station in the State, therefore, there is no precedence available to evaluate the schedule furnished by the Petitioner. Accordingly, the Commission has accepted the same. However, the Petitioner is directed to have proper communication well in advance with both Distribution Licensee as well Transmission Licensee in the State so as to avoid any dispute that may occur due to disturbance in the demand/supply of power of Distribution Licensee and also due to transmission capacity constraint or any other related issues with Transmission Licensee.

**In this regard, the Commission would like to advise the Petitioner and the Respondent to finalise the said Maintenance plan amongst them so as to ensure that supply position in the State is not impacted because of the same and submit the same to the Commission within two months from the date of Order.**

## **5. Petitioner's Submissions, Commission's Analysis, Scrutiny and Conclusion on Capital cost and Tariff determination for the Project for FY 2015-16**

### **5.1 Applicability of Regulations**

Regulation 1 (3) of Tariff Regulations 2011 specifies as under:

*"These Regulations shall be applicable for determination of tariff in all cases covered under these Regulations from FY 2013-14, i.e. April 1, 2013 onwards up to FY 2015-16 i.e. March 31, 2016. However, for all purposes including the review matters pertaining to the period till FY 2012-13, the issues related to determination of tariff shall be governed by following Regulations including amendments thereto."*

Regulation 1 (3) of Tariff Regulations 2015 specifies as follows:

*"These Regulations shall be applicable for determination of tariff in all cases covered under these Regulations from FY 2016-17, i.e. April 1, 2016 onwards up to FY 2018-19, i.e. March 31, 2019.*

*Provided, all new Projects commissioned after the notification of these Regulations shall be governed by the provisions of these Regulations."*

For the purpose of Tariff determination of FY 2015-16, the Petitioner has referred UERC Tariff Regulations, 2011 and for the second Control Period, the

Petitioner has applied the provision of UERC Tariff Regulations, 2015. Proviso of Regulation 1(3) of UERC Tariff Regulations, 2015 notified on 10.09.2015 specifies that all new Projects commissioned after the notification of the Regulations shall be governed by the provisions of the said Regulations. Further, 1<sup>st</sup> Unit of the Petitioner's plant was commissioned on 16.03.2016, accordingly, for the purpose of determination of tariff all the provision of UERC tariff Regulations, 2015 have been applied.

### **5.1.1 Saleable Energy**

The name plate capacity of the Petitioner's plant is 225 MW (ISO condition) which comprises of two GTGs, each having a gross output of about 76 MW, and one common steam turbine generator (STG) of about 73 MW. However, at site conditions the power plant will have a gross capacity of 214 MW. The PPA has been entered into with Respondent for 107 MW. Further, the Petitioner vide its Petition has submitted that because of unavailability of primary fuel and unavailability of long term PPA for entire capacity, it would not be possible to maintain a NAPAF of 85% for FY 2016-17, FY 2017-18 and FY 2018-19, as required by the Regulations. The Petitioner by referring Regulation 103, i.e. "Savings" of UERC Tariff Regulations, 2011 and Regulation 104, i.e. "Power to Remove Difficulties" prayed to permit the actual plant availability achieved during the true-up petition. The Petitioner submitted that domestic gas production is expected to be available in FY 2019-20 onwards and then it will be able to maintain availability as per Regulations. However, considering the present situation of shortage of domestic gas in the country and overall objective of the Government of India to utilize the stranded gas based power generation capacity installed in the country, the Petitioner does not expect to achieve the Normative Annual Plant Availability Factor of 85% although for the purpose of tariff calculation, the norm prescribed in the regulation has been considered. The Petitioner also prayed that in case domestic gas is available in the period for which relief is sought, in terms of reduced NAPAF, the Commission may direct for upward revision in NAPAF. Further, in case the Commission grants relief to the Petitioner by reducing the NAPAF, the Petitioner will not claim any incentive on account of availability and schedule above such reduced NAPAF. The Petitioner, vide its tariff Forms, submitted that gross generation and Saleable Energy for FY 2015-16 is based on unaudited record of generation and sale of electricity for FY

2015-16 (between 1<sup>st</sup> COD, i.e. 16.03.2016 to 31.03.2016) and claimed NAPAF of 59% and for rest of the years till FY 2018-19 it is based on NAPAF of 85%, however, in the petition, petitioner has prayed to provide relaxation in the normative availability.

With regard to NAPAF, the Respondent has submitted that after having a long term PPA of 25 years, it is the responsibility of the Petitioner to arrange the gas for 25 years and if the Petitioner is unable to secure the long term arrangement of gas then there is no use of having the long term PPA. Moreover, if the Petitioner's request for recovery of AFC in case of non-availability of gas is accepted, there may be a possibility that the Petitioner may associate any other inefficiency with the non-availability of gas and thereby get the benefit of the same too. Further it would be reasonable to consider the concern of the Respondent regarding non-availability of power in future in case of non-availability of fuel linkage to the Petitioner, that the recovery of total AFC should be considered through per unit basis of energy generated and not through the fixed charge component allowed in normal cases. It would be more appreciated in the context that in case of non-supply of energy, the Respondent would not only be affected by the shortage of power for which some costlier power needs to be arranged but also has to pay the fixed charges to the Petitioner. The PPA has been done by the purchaser to receive power and the generator who want to have a long term PPA with the purchaser will have to fulfill the requirement of purchaser and it is also pertinent to mention that in case of variation in schedule the power purchase planning of the Respondent may be adversely affected and Respondent has to arrange the power on a very short period where there are chances that the Respondent may get costly power. Therefore in case there will be any deviation then there should rather be a penalty clause for generator as it has already been facilitated by defining its power as must-dispatch. The Respondent further submitted that the NAPAF has to be maintained at 85%. As the concept of gas based plant is to meet out the power deficit during peak hour due to the capability of quick start/stop. Therefore, it is required to specify the minimum & maximum technical load for which advance scheduling may be provided by UPCL to maintain yearly NAPAF of 85%. The Respondent submitted that the NAPAF is a crucial factor in recovery of cost, the same has to be not only certain but also such as to prompt efficiency of generator to generate power to the

maximum possible capacity.

In reply, the Petitioner submitted that all these factors have been captured in the PPA and the Commission has approved the PPA as per the regulations. The Petitioner confirms to comply with the PPA and in case of any ambiguity/dispute /clarifications either party may approach the Commission for resolving the issues.

Regulation 54 of the UERC Tariff Regulations, 2015 specify NAPAF of 85% for such generating stations. However, the Commission vide its Order dated 08.02.2016 on approval of PPA for the Petitioner's plant approved the definition of NAPAF as follows:

*“Normative Availability” or “Target Availability” Or Normative Annual Plant Availability Factor (NAPAF) shall mean the Normative Annual Plant Availability Factor specified or approved by the Commission from time to time.”*

The Petitioner's Plant had been identified under stranded category by the GoI under the Scheme notification dated 27.03.2015 and had been allocated gas (fuel) to the extent of 50% overall capacity. The Petitioner's plant had commenced generation w.e.f. 16.03.2016, hence, effectively 16 days of commercial generation has been supplied to the licensee during FY 2015-16. Further, since the Petitioner has availed gas supply under the Scheme till FY 2016-17, the Commission allows recovery of allowable AFC for FY 2015-16 and FY 2016-17 based on the actual generation and energy supplied to the Respondent for the above mentioned period, i.e. at a single part tariff. Apparently, during the currency of the Scheme NAPAF and actual PAFAM in respect of the Petitioner's plant will not have any implication since the recovery of the AFC is allowed in accordance with the ceiling rate provided under the Scheme. However, subsequent to completion of the aforesaid Scheme the provisions for recovery of AFC shall be in accordance with UERC Tariff Regulations, 2015. However, for the purpose of computation of saleable energy NAPAF of 85% has been considered as specified in the Regulations.

In this regard, the submission of the Respondent that it will have to pay fixed charges to the Petitioner if gas is not available is unfounded. The PPA entered into by the Respondent with the Petitioner clearly stipulates that if the Respondent asks the Petitioner, to back down the generation, only in such cases it is liable to pay capacity charges subject to the condition that the Petitioner achieves its

NAPAF. In other cases it does not have to pay the fixed charges. The submission of the Respondent regarding the capacity installed vis-à-vis the capacity for which PPA has been signed is dealt while approving the capital cost of the project.

The Commission has considered the contracted capacity to work out the saleable energy. In accordance with the Regulation 47(4)(i) of the Tariff Regulations, 2015 auxiliary consumption of 2.5% has been considered. Accordingly, applying the NAPAF of 85% and reducing the auxiliary power, the saleable energy works out as follows:

**Table 7: Saleable Energy Claimed and approved by the Commission**

Particulars	Unit	FY 2015-16		FY 2016-17 to FY 2018-19	
		Claimed	Approved	Claimed	Approved
Contracted Capacity	MW	107.00	107.00	107.00	107.00
Normative Availability	%	58.50%	85.00%	85.00%	85.00%
Aux. consumption	%	0.59%	2.50%	2.50%	2.50%
Saleable Energy	MU	546.60	778.93	776.80	776.80

Further, as the 1<sup>st</sup> unit of the Plant has been put under commercial operation w.e.f. 16.03.2016, the saleable energy works out to 34.05 MU against the Petitioner claim of 23.90 MU based on the actual PAF of 58.50%.

## 5.2 Station Heat Rate

The Petitioner for the purpose of computation of energy charge rate considered the SHR as 1,925 kCal/kWh. The Commission asked the Petitioner to submit documents/certificate of original manufacturer of the machines in this regard. In response, M/s GIPL provided a letter of confirmation from M/s Luna Infraprop (P) Ltd., EPC contractor stating that at ambient condition (i.e. relative humidity of 60%, ambient temperature 22 degree Celcius, one gas turbine at 100% load, steam turbine generator at 50% load) guaranteed station heat rate for the 107 MW capacity would be 1832.30 kCal/kWh. The Petitioner vide its subsequent reply dated 10.11.2016 submitted that since the plant had developed a technical snag in steam turbine and the operations of the plant had been intermittent and the only continuous operations of the plant had been achieved in the month of September, 2016 and 15 days in October, 2016 and the plant was operated also at 50% of the total capacity load. The approximate SHR recorded for 45 days upto 15.10.2016 was 1992 kCal/kWh based on total fuel consumed and total power generation, however, the same cannot be a true representation of SHR and needs to be validated atleast after six to eight months of continuous operations. In

addition the Petitioner also furnished a Heat Balance Diagram and stated that SHR guaranteed by the manufacturer is 2017 kCal/kWh. Further, the Commission also observed that pursuant to the Scheme of PSDF support of Govt. of India, M/s GIPL had executed an agreement dated 24.09.2015 with MoP, GoI wherein, normative station heat rate and allowable station heat rate has been mentioned as 2,001.00 kCal/kWh and 2101.05 kCal/kWh respectively.

The Commission analysed the submissions made by the Petitioner. In its earlier submission the Petitioner produced certificate of EPC contractor wherein, SHR has been mentioned as 1832.30 kCal/kWh whereas, Heat Balance Diagram depicts plant gross heat rate as 7666.30 kJ/kWh (or 1832.30 kCal/kWh). However, justification for claiming SHR of 2017 kCal/kWh was not submitted by the Petitioner. The Commission is of the view that SHR is a crucial parameter for the thermal (gas based) power plant having a financial implication in arriving at cost of power purchase by the licensee for each financial year. Hence, SHR should be based on the guaranteed heat rate by the original manufacture of plant and machinery. **Accordingly, so as to arrive at a precise design SHR of the plant, the Commission directs the Respondent to appoint an expert Committee/Consultant for establishing the design heat rate of the Petitioner's plant for the contracted capacity and submit the report on the same within 3 months of the issuance of this Order. The Petitioner is also directed to provide all the relevant documents/certificate and also to provide necessary assistance to the Respondent in this regard.** Till the outcome of the report on SHR of the expert committee as discussed above for the purpose of the tariff order, the Commission has considered SHR as certified by the EPC contractor. Regulation 47(3) of the UERC Tariff Regulations, 2015 specifies that:

*“(3) Gross Station Heat Rate for Gas-based/Liquid-based thermal generating unit(s)*

*= 1.05 X Design Heat Rate of the unit for Natural Gas and RLNG (kcal/kWh)*

*= 1.071 X Design Heat Rate of the unit for Liquid Fuel (kcal/kWh)*

*Where the Design Heat Rate of a unit shall mean the guaranteed heat rate for a unit at 100% MCR and at site ambient conditions; and the Design Heat Rate of a block shall mean the guaranteed heat rate for a block at 100% MCR, site ambient conditions, zero percent make up, design cooling water temperature/back pressure.”*

Based on the regulations as reproduced above and design SHR as confirmed by the EPC contractor, the Commission provisionally approves Gross Station Heat Rate

for 107 MW contracted capacity as 1925 kCal/kWh which shall be replaced with the GSHR based on the approval by the Commission of the recommendation of the Expert Committee.

### 5.3 Capital Cost

Regulation 21 (3) of Tariff Regulations, 2015 specifies as follow:

*“(3) The Capital Cost of a new project, i.e. projects achieving Commercial Operation on or after notification of this Regulation shall include the following:*

- a) The expenditure incurred or projected to be incurred up to the date of commercial operation of the project;*
- b) Interest during construction and financing charges, on the actual amount of loan.*
- c) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 21(9) & 21(10) of these Regulations;*
- d) Capitalised Initial spares subject to the ceiling rates specified in Regulation 21(11) of these Regulations;*
- e) Expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 22 of these regulations;*
- f) Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the CoD as specified under Regulation 45 of these regulations; and*
- g) Adjustment of any revenue earned by the generating company, transmission licensee and distribution licensee by using the assets before CoD.”*

Accordingly, as per Regulation 21(3) read with Regulation 1(3) of UERC Tariff Regulations, 2015, capital cost approved by the Commission shall be considered for the purpose of the determination of Tariff. The Petitioner had vide its Petition submitted that Regulation 23(1) of the Tariff Regulations, 2011 stipulates that in case of a generating company, “investments made prior to 01.04.2013 shall be accepted on the basis of investments approved by the Commission in the previous Orders” and the Petitioner is seeking tariff determination for the first time by the Commission, therefore, there is no previous order of the Commission approving Petitioner’s capital investments. In view thereof, the Petitioner, relying on Regulation 23(4) of the 2011 Regulations, sought determination of its anticipated capital cost on the basis of audited financial statements upto FY 2014-15 considering the expected CoD, i.e. 20.01.2016 of 1<sup>st</sup> Unit (1 no. of Gas Turbine and

1 no. of Steam Turbine) and other relevant data. As discussed above, UERC Tariff Regulations, 2015 are applicable on the Plant, accordingly, capital cost of the 1 GTG and 1 STG have been determined based on the provisions of UERC Tariff Regulations, 2015.

The Petitioner submitted that the capital cost of the Project was estimated at Rs. 834.64 Crore at the time of financial appraisal by Bank of Baroda and its funding was structured with a term loan of Rs. 584.25 Crore and promoter's equity of Rs. 250.39 Crore at a Debt to Equity Ratio of 70:30. The Petitioner had vide its Petition submitted that the expected COD of 1 no. of GTG (out of 2 GTGs) and STG (hereinafter referred to as "1<sup>st</sup> Unit of plant") was 20.01.2016 and expected COD for the entire project was 20.03.2016. The Petitioner submitted that expenditure upto 10.11.2015 as per books of accounts was Rs. 939.51 Crore and expected capital cost from 10.11.2015 to expected COD of 1<sup>st</sup> Unit of the Plant would be Rs. 110.09 Crore. Accordingly, the Petitioner had submitted capital cost of Rs. 1049.60 Crore for the entire project. The Petitioner also submitted the estimated bifurcation of the Project cost among 1<sup>st</sup> Unit of the Plant and the 2<sup>nd</sup> Unit of the Plant as follows:

**Table 8: Estimated Capital Cost and unit wise allocation submitted by the Petitioner (Rs. in Crore)**

Particulars	Cost up to 10.11.2015	Cost 10.11.2015 to 10.01.2016	Assets Capitalized as on First COD (20th Jan, 2016)		Capital Expenditure From 20th Jan 2016 till Plant COD (20th Mar, 2016)	Assets Capitalized as on Plant COD (20th Mar, 2016)		Total Expenditure as on 20th Mar, 2016 (Plant COD)	
			Before allocation of IDC and Pre-operative expenses	After allocation of IDC and Pre-operative expenses		Before allocation of IDC and Pre-operative expenses	After allocation of IDC and Pre-operative expenses	Before allocation of IDC and Pre-operative expenses	After allocation of IDC and Pre-operative expenses
			Actual	Projected		Projected	Projected	Projected	Projected
a) Land	11.46	0.00	11.46	16.94	0.00	0.00	0.00	11.46	16.94
b) Civil Works	43.97	2.00	45.97	67.99	2.00	2.00	3.23	47.97	71.22
c) Plant & Machinery	584.44	47.50	410.95	607.75	0.00	221.00	357.40	631.94	965.15
d) Furniture and Fixtures	0.06	0.50	0.56	0.83	0.50	0.50	0.81	1.06	1.64
e) Office Equipment & Others	0.04	0.50	0.54	0.80	0.50	0.50	0.81	1.04	1.60
f) Computers	0.03	0.00	0.03	0.04	0.00	0.00	0.00	0.03	0.04
g) Vehicles	0.21	0.00	0.21	0.31	0.50	0.50	0.81	0.71	1.12
h) Interest During Construction (IDC)	257.34	17.71	183.67	*	4.62	96.00	*	279.67	*
i) Pre-operative expenses	41.97	41.88	41.28	*	0.00	42.57	*	83.85	*
<b>Total (A)</b>	<b>939.51</b>	<b>110.09</b>	<b>694.66</b>	<b>694.66</b>	<b>8.12</b>	<b>363.06</b>	<b>363.06</b>	<b>1057.72</b>	<b>1057.72</b>

Since the Petitioner had filed the Petition for determination of tariff prior to commissioning of its plant on the basis of estimated capital cost for 1<sup>st</sup> Unit and 2<sup>nd</sup> Unit of

its plant, accordingly, it was asked to submit detailed breakup of capital cost after commissioning of its entire plant. In response, the Petitioner furnished the breakup of the capital cost vide its submission dated 29.07.2016 and 10.11.2016 subsequent to commissioning of 1<sup>st</sup> unit and 2<sup>nd</sup> unit of its plant. Accordingly, for determination of the capital cost, the above referred submission has been considered.

The Respondent vide its letter dated 21.09.2016 raised certain issues regarding the capital cost and the same has been discussed in following Paras.

**(i) Allocation of Capital Cost between Overall Plant Capacity and Contracted Capacity**

The Respondent requested the Commission to consider the proportionate capital cost of all the elements of the project based on the installed capacity and contracted capacity. The Respondent also submitted that the remaining half or the uncontracted capacity of the plant should also be loaded equivalently and at par with the contracted capacity. In reply, the Petitioner submitted that the capital cost has been incurred for the plant with 214 MW of installed capacity at site condition and there is no requirement of pro-rata adjustment in the capital cost. The Petitioner submitted that costs of the equipments to be utilized for generation of 107 MW which will be actually used are attributed to the capital cost to be apportioned for determination of AFC. The Commission has gone through the submission of the Petitioner as well as the Respondent. The hard cost alongwith the soft cost of the project and its bifurcation have been dealt in the subsequent Paras of this Order.

The Respondent also submitted that if any maintenance is required after 31<sup>st</sup> March, 2012 it should be on the part of Petitioner and cannot be more than that provided for in the Regulation. The Commission is of the view that all the expenses related to construction till commissioning of the plant has been analysed and being allowed in accordance with the regulations and accounting principles.

**(ii) Life of the Plant and Guarantee extended by equipment supplier**

The Respondent submitted that it has to be demonstrated that whether the guarantee extends from the date of supply of the equipment or from the date of commissioning because if the guarantee has been given from the date of supply then the total guarantee of the equipment's would be reduced by the time of delay, hence, the total life of the equipment's would not be 25 years and it may be possible that after 22 years of plant life the Petitioner may claim R&M or would provide less generation as the case may be.

The Petitioner submitted that all the purchase orders of major equipment like Gas Turbine, HRSG and Steam Turbine have been submitted to the Commission. These are in line with international and relevant industry practices regarding guarantee covers. The plant has been preserved as per the guidelines of the OEMs and other major suppliers. The inspection was carried out by the supplier of gas turbine, i.e. GE, before commissioning the gas turbine to assess the condition of the equipment and has been confirmed that the equipment were preserved as per the guidelines and there is no loss to the life of the equipment. The same way, other equipment were also assessed and were found satisfactory. The machines have to be maintained as per OEMs' guidelines for which the spares needs to be procured by the generator. Suitable contracts for maintenance had to be entered with critical and proprietary equipment suppliers like GE and HTC (Steam Turbine).

The Commission appreciates the submission of the Petitioner that the plant has been preserved as per guidelines of the OEMs and other major suppliers and there is no loss of life as observed by the suppliers. Further, the life of the project has been considered as 25 years under the Regulations and norms for operations have also been specified therein and hence, it would be generator's responsibility to maintain and operate the plant in an efficient manner failing which it will have to bear the losses/inefficiencies. Relying on the Petitioner's submission that it has preserved the plant as per the guidelines of the OEMs and other major suppliers, the Commission has decided to consider the normative life of plant as 25 years from the actual date of commissioning. Further, in accordance with the PPA, the Petitioner is bound to supply contracted power to the Respondent for 25 years from the date of commissioning of the plant. The Respondent, being a beneficiary of the plant, may agitate the issue if any claim of expenditures for extension of life is submitted by the Petitioner. Further, the Commission would then take a view in the matter in accordance with the applicable Regulations. Other issues related to capital cost such as IDC claimed by the Petitioner and the Respondent's comments have been discussed in subsequent Paras.

It is hereby also clarified that, in general for determination of capital cost in respect to any power project, the Commission examines the same by broadly segregating overall capital cost into Hard Cost and Soft Cost. In line with the methodology followed by the Commission to analyse the capital cost of the Petitioner's

Plant the same has also been broadly classified into two components (i) Hard Cost comprising of expenditure incurred on procurement/supply, erection, testing, commissioning etc. of the entire project equipment/components including consultancy services and, (ii) Soft Cost which includes interest during construction (IDC) and pre-operative expenses. Based on the submissions made by the Petitioner and comments received from the Respondent on the same, analysis of the capital cost of the project has been done which has been discussed in following Paras.

### **5.3.1 Hard Cost**

Hard cost of the project depends upon the prudence in procurement/supply, erection, testing, commissioning of the project equipments/components by the project developer having followed fair process of selection of supplier/service providers. The Petitioner also submitted that the project has been implemented through an EPC contractor namely M/s Luna Infraprop Pvt. Ltd.

Subsequently, the Petitioner vide its letter dated 29.07.2016 submitted that the 1<sup>st</sup> Unit of the Plant had achieved COD on 16.03.2016 and the expected COD for the entire plant is 31.08.2016. The Petitioner submitted the Auditor's certificate dated 19.03.2016 based on the total capital cost incurred for the entire project till 16.03.2016 and also submitted the tariff forms vide letter dated 10.11.2016 based on the capital cost of Rs. 698.61 Crore inclusive of soft cost of Rs. 234.57 Crore for the 1<sup>st</sup> unit of the plant. The Respondent, i.e. UPCL vide letter dated 21.09.2016 submitted that the Petitioner has stated the capital cost of the generating station as per DPR is Rs. 834.64 Crore for 225 MW and for the contracted capacity, i.e. 107 MW the related cost proportionately comes out to Rs. 397.00 Crore. The Respondent submitted that since the capital cost stated by the Petitioner is not correct, therefore, all other parameters dependent upon the capital cost, accordingly, needs correction. In reply, the Petitioner submitted that the total capital cost of the project which has been incurred by the Petitioner has been submitted to the Commission along with the justification and all the relevant supporting documents. The Respondent submitted that the total capital cost of the project should be apportioned based on the total generation capacity of the plant at site condition, i.e. 214 MW and not on name plate capacity of 225 MW, since the recovery of the cost will be limited to the generation of the plant at site condition.

For the purpose of prudence analysis of the capital cost claimed by the

Petitioner, the Commission vide letter dated 05.04.2016 directed the Petitioner to submit the Fixed Asset Register. In reply, the Petitioner vide letter dated 29.07.2016 submitted that the Fixed Asset Register will be submitted on the commissioning of the entire project. The entire project was commissioned on 31.08.2016, however, Fixed Asset Register was not submitted by the Petitioner. Therefore, the Commission vide its letter dated 30.03.2017 once again directed the Petitioner to submit the Fixed Asset Register. The Petitioner vide its reply dated 31.03.2017 submitted that the Fixed Asset Register will be submitted in due course which was submitted by the Petitioner on 24.04.2017. **The Commission noted the lackadaisical approach of the Petitioner in following accounting policy to upkeep its record of capital expenditure and timely submission of information to the Commission.**

The Commission decided to analyse the project cost based on the respective Contracts entered into by the Petitioner, however, it was observed that the EPC contract was awarded to M/s Luna Infraprop Pvt. Ltd. on turnkey basis, which is a related party as per financial statements of the Petitioner. Therefore, the Commission decided to analyse the Purchase Orders/Work Orders submitted by the Petitioner vide various submission in response to the Commission's direction issued vide letter dated 08.12.2016 for submission of all the contracts/ sub-contracts (Purchase Orders and Work Orders) along with invoices of above Rs. 2.50 Lakh.

It has been observed that in some of the cases, the Petitioner had submitted the invoices without furnishing the corresponding Contract/Purchase Order/Work Order. The clarification, in this regard, was sought from the Petitioner. In response the Petitioner submitted that most of such invoices pertained to procurements of bricks and steel for civil construction and in case of procurement of commercial LPG cylinders, the Petitioner submitted that the LPG was used for cutting, welding and inert purposes during the construction of the project for erection, installation and commissioning work of various equipments like gas turbine, steam turbine, STG building and HRSG etc. Subsequently, the Petitioner also submitted the Purchase order for the same.

Further, it has been observed that in all the contract it was mentioned that the contract value shall remain firm throughout the completion period, however, a few Purchase Orders/Work Orders had been amended with respect to the contract price. The Petitioner was directed to submit the justification for amendment of the Purchase

Order/ Work Orders. In reply, the Petitioner vide letter dated 23.01.2017 submitted that the project was stranded for more than three years, hence, when commissioning activity was started, a lot of items needed to be replaced/repared and servicing was required to be done. Therefore, additional amendment in Purchase Orders/Work Orders was done and also some extra cost was incurred to restart the plant. The Commission appreciates the fact that gas based power plant remain stranded, and such plants have been commissioned under specific Scheme brought up by the Government of India vide its notification dated 27.03.2015. Hence, the Commission finds it prudent to allow such price escalation. The Commission observed from some of the invoices that the rate charged in the invoices was in deviation to the rate fixed in the corresponding Purchase Order. In such cases, the Commission has considered the rate as mentioned in the respective Purchase Order. The Commission also observed that in some of the cases, the actual quantity of the material utilized varied from the quantity mentioned in the Purchase Order. The Commission is of the view that such quantity variation is also allowable since actual requirement of quantity may vary from that of quantities envisaged at the time of preparing estimates.

Based on the invoices /details submitted by the Petitioner, the hard cost of Civil Work and E&M of the plant works out to Rs. 646.58 Crore for the entire plant against the hard cost of Rs. 677.54 Crore claimed by the Petitioner based on the auditor's certificate dated 15.11.2016 for corresponding works of the entire plant. The Commission vide its letter dated 30.03.2017 directed the Petitioner to submit a detailed summary for the invoices below Rs. 2.50 Lakh and also asked the Petitioner to submit the justification for considering the balance amount to arrive at the claimed capital cost of the plant. In reply, the Petitioner vide its letter dated 31.03.2017 submitted that the Commission had exempted the Petitioner from the submission of Purchase Orders/Work Orders below Rs. 2.50 Lakh. Further, with respect to the variation in the capital cost, the Petitioner submitted that the variation was on account of Purchase Order/Work Orders and petty purchases, petty contracts given at site and by Petitioner's Head Office and these Purchase Orders were only about 5% of the total contract value.

Here, it is pertinent to mention that the Commission had not asked for the invoices below Rs. 2.50 Lakh keeping into consideration the volume of such invoices,

however, the Petitioner had misinterpreted the relaxation for submissions of invoices. The Petitioner was directed to submit the summary only for the purpose of the prudence check of the total hard cost claimed by the Petitioner but the Petitioner failed to submit the same. Being a commercial entity the Petitioner is expected to maintain record of each and every expenses in such a manner that the summary of the same could be produced as and when required by any authority. Further, the Petitioner itself had submitted the invoices of works below Rs. 2.50 Lakh amounting to Rs. 5.60 Crore alongwith the overall plant & machinery and civil cost as discussed above. The Petitioner was once again directed to submit the summary of all the invoices below Rs. 2.50 Lakh vide letter dated 17.04.2017. In reply, the Petitioner vide letter dated 24.04.2017, instead of furnishing summary of the invoices below Rs. 2.50 Lakh originally raised by the vendors, submitted the list of pending PO/WO amounting to Rs. 6.64 Crore. The same has not been considered for determination of capital cost since it could not be established from the PO/WO alone whether the expenditure was actually incurred or not and further that the actual expenditure would vary from that mentioned in the corresponding PO/WO. Further, the Petitioner also submitted the summary of the supplementary invoices raised by the different vendors amounting to Rs. 8.16 Crore without providing any justification for raising such additional invoices. It is pertinent to mention that out of Rs. 8.16 Crore, invoices summary amounting to Rs. 3.30 Crore pertained to bills exceeding Rs. 2.50 Lakh for which the Petitioner should have submitted the copies of supporting invoices. Hence, in the absence of substantial details in respect of summary of original invoices below Rs. 2.50 Lakh, the Commission has disallowed the expenditure of Rs. 30.96 Crore. Based on the above discussion, the hard cost with respect to Civil work and E&M related works is Rs. 646.58 Crore for the entire plant as on 31.08.2016. Further, the Petitioner has claimed the hard cost of Rs. 12.37 Crore for balance minor assets (namely freehold land, furniture and fixtures, office equipment a, computer and vehicles) for the project. The Commission has considered the same after prudence analysis. Accordingly, the Commission has worked out the hard cost of the project amounting to Rs. 658.95 Crore against the entire plant's hard cost of Rs. 689.92 Crore submitted by the Petitioner vide its auditor's certificate dated 15.11.2016.

The Respondent also submitted that the Petitioner in its DPR and also in the Petition had stated the name plate rating/gross capacity of the plant as 225 MW

whereas the capacity has been restricted to 214 MW due to site condition against 225 MW for the purpose of determination of tariff and the same as totally hypothetical and not permissible as per Regulation.

In this regard, it would be relevant to mention that the performance of Gas Turbines varies with locations and ambient conditions. The same Gas Turbine performs differently in the high altitudes and performs differently in winter and in summer. This has nothing to do with the Gas Turbine itself, but is due to the ambient atmospheric conditions. The gas turbine output and efficiency is a strong function of the ambient air temperature. Depending on the gas turbine type, power output is reduced by a percentage between 5 to 10 percent of the ISO-rated power output for every 10 K increase in ambient air temperature. In general the ambient conditions under which a gas turbine operates have a noticeable effect on both the power output and efficiency. In other words the efficiency and the output decreases as the temperature increases and the same increases with the decrease in temperature. The efficiency is greatly affected by the ambient temperature of the air entering the compressor. There is variation in power and efficiency for a gas turbine as a function of ambient temperature compared to the reference international organization for standards (ISO) condition at sea level and 32.78<sup>0</sup>C. Hence, this is not due to the fault of the machine, but because of the different ambient conditions.

### **5.3.2 Segregation of Capital cost between 1<sup>st</sup> Unit and 2<sup>nd</sup> Unit of the Plant**

Since the overall plant cost worked out as above is Rs. 658.95 Crore, however, tariff is to be determined only for 107 MW capacity as against the total installed capacity of 217 MW, hence, the cost needs to be segregated amongst the capacity tied up with UPCL and the stranded capacity. In this regard, the Commission vide its letter dated 05.04.2016 directed the Petitioner to submit the usage of equipment and basis of the allocation of cost. The Petitioner vide its letter dated 29.07.2016 submitted the allocation based on the usage, capacity and requirement for the commissioning of the plant for the following equipments:

**Table 9: Basis of Cost Segregation as submitted by the Petitioner**

<b>1</b>	<b>BOP Mechanical</b>	<b>Basis of Allocation</b>
1.1	HVAC	It is required for plant operations and hence fully apportioned to 1 <sup>st</sup> COD
1.2	Generator Circuit breaker	Total cost is equally apportioned to both CODs.
1.3	Busduct	Total cost is apportioned in the proportion of capacity operationalised on 1 <sup>st</sup> COD (143 MW/214 MW)
1.4	EOT Crane	These components are required for plant operations and hence cost is fully apportioned to 1 <sup>st</sup> COD.
1.5	Fuel gas conditioning skid	
1.6	ACW/CCW system	
1.7	WTP	
1.8	Hangers	This component is required for plant operations and hence cost incurred till 1 <sup>st</sup> COD is fully apportioned to 1 <sup>st</sup> COD. Expense to be incurred between 1 <sup>st</sup> and 2 <sup>nd</sup> COD will be apportioned to 2 <sup>nd</sup> COD.
1.9	Piping	Total cost is apportioned in the proportion of capacity operationalised on 1 <sup>st</sup> COD (143 MW/214 MW)
1.10	Mechanical Others	Majority of the auxiliary equipment, interlinking components etc. were operationalised during 1 <sup>st</sup> COD itself and hence cost incurred up to 1 <sup>st</sup> COD is entirely apportioned to 1 <sup>st</sup> COD. Cost to be incurred between 1 <sup>st</sup> and 2 <sup>nd</sup> COD will be apportioned to 2 <sup>nd</sup> COD.
<b>2</b>	<b>BOP Electrical</b>	
2.1	Switch Yard Package	Essential components for plant operationalisation, and hence entirely apportioned to 1 <sup>st</sup> COD
2.2	Transformers Package	2 of the 3 transformers are in use from 1 <sup>st</sup> COD and hence 2/3 <sup>rd</sup> of the cost is apportioned.
2.3	Switch gear Protection	Essential components for plant operationalisation, and hence entirely apportioned to 1 <sup>st</sup> COD.
2.4	Cables, Cable facilities & grounding	Total cost incurred is apportioned in the proportion of capacity operationalised on 1 <sup>st</sup> COD (143 MW/214 MW)
2.5	Lighting	Essential components for plant operationalisation, and hence cost incurred till 1 <sup>st</sup> COD is entirely apportioned to 1 <sup>st</sup> COD. Cost to be incurred between 1 <sup>st</sup> and 2 <sup>nd</sup> COD will be apportioned to 2 <sup>nd</sup> COD.
2.6	Emergency D.G. set	
2.7	MV/LT switch gear	
2.8	DC system	Essential components for plant operationalisation, and hence entirely apportioned to 1 <sup>st</sup> COD.
2.9	Earthing	
2.10	Electrical Others	Majority of the auxiliary systems were operationalised during 1 <sup>st</sup> COD itself and hence cost incurred till 1 <sup>st</sup> COD is entirely apportioned to 1 <sup>st</sup> COD. Cost to be incurred between 1 <sup>st</sup> and 2 <sup>nd</sup> COD will be apportioned to 2 <sup>nd</sup> COD.

The Commission observed that the Petitioner had charged approximate 70% of the entire plant cost to 50% capacity of the Plant for which PPA has been entered into with UPCL. Accordingly, balance capital cost, i.e. 30% (approx.) would be charged to the balance capacity of the Plant, i.e. 107 MW, based on the Petitioner's arrangement for the same, and it would lead to an unbalanced tariff for the same capacity under different arrangements to sell power. Further, any additional cost allocation to the contracted capacity, i.e. 107 MW with the Respondent would result in charging higher tariff from the consumers in the State whereas, future beneficiaries of the balance capacity (uncontracted till date) will have the benefit of lower cost of energy from the same plant.

This proposition would lead to undue burden on the Respondent. In this regard, the Commission is of the view that allocation of overall capital cost of the plant to 107 MW tied up with the Respondent should be based on the contracted capacity tied-up with it only. Hence, the Commission is of the view that only 50% of the worked out capital cost should be charged for the contracted capacity i.e. 107 MW and the remaining capital cost may be recovered by the Petitioner through the arrangement, done for the balance 50% capacity. Accordingly, the Commission has considered 50% of the hard cost arrived for the elements for 107 MW capacity of the Plant.

Based on the above discussion, details of the hard capital cost for the entire plant as per DPR, as executed submitted by the Petitioner based on the auditor's certificate, claimed by the Petitioner for the 107 MW capacity of the Plant and that allowed by the Commission after prudence check is as follows:

**Table 10: Capital Cost (Hard Cost) approved by the Commission (Rs. in Crore)**

Particulars	As per DPR	Submitted for the entire plant	Claimed for 107 MW	Admissible Capital cost for 107 MW
Freehold Land	14.42	11.46	11.46	5.73
Civil Works	70.75	51.29	48.11	24.47
Plant & Machinery	600.72	626.25	403.81	298.82
Furniture and Fixtures	0.00	0.36	0.32	0.18
Office Equipment & Others	0.00	0.11	0.09	0.05
Computers	0.00	0.04	0.03	0.02
Vehicles	0.00	0.42	0.21	0.21
<b>Total</b>	<b>685.89</b>	<b>689.92</b>	<b>464.03</b>	<b>329.48</b>

### 5.3.3 Soft Cost of the Plant

#### (i) Interest During Construction (IDC) and Bank Charges

The Petitioner vide auditor's certificate dated 19.03.2016 submitted that the total financing cost (including bank charges) upto commissioning of 1<sup>st</sup> Unit is Rs. 301.91 Crore for the project and also that the IDC including bank charges till the final commissioning of the project date i.e. 31.08.2016 is Rs. 347.27 Crore as per auditor's certificate dated 15.11.2016 which is 32% of the entire project cost of the plant, i.e. Rs. 1077.19 Crore. Further, the Petitioner allocated the IDC and Bank Charges of Rs. 202.84 Crore to the 107 MW of the Project.

Regarding the claim of IDC, the Respondent submitted that the Petitioner had admitted that there had been time over run and cost over run in the project,

hence, IDC for delayed period should not be allowed. In reply the Petitioner submitted that it had completed the project on time, i.e. March 2012 and the fuel was to be allocated by the Government of India, based on gas utilization policy. The Petitioner, further, submitted that only upon receipt of gas the project could be commissioned. The Petitioner also submitted that all the relevant documents regarding the project status and visit report by Central Electricity Authority (CEA) have been submitted to the Commission which proves that there was no delay on the part of the generator in achieving COD of the project but the delay in achieving COD was due to the uncontrollable factor. The Commission has gone through the CEA reports submitted by the Petitioner and observed that there has been time overrun. Delay in completion of the project has been discussed in the subsequent Paras.

The Respondent has submitted that out of 27000 MW Stranded Gas Plants, around 9000 MW capacity such plants procured the domestic gas during this period while the Petitioner did not make any effort to run the plant or procure the fuel, therefore, it amount to incompetency of the Petitioner who failed to secure the domestic gas and commission the plant within time, and therefore, the Respondent submitted that claiming IDC and pre-commissioning expenses by the Petitioner was not justifiable as it would amount to compensating the Petitioner for its own wrong. The Respondent further submitted that the Petitioner did not obtain any open access neither it undertook any arrangement for selling power to any consumer of the Respondent within the State, which clearly shows that the generator all this while was never ready to run the plant and, hence, the Respondent submitted that it would be totally inequitable to burden the consumer of the State with the extra cost by allowing the recovery for the generator. The Respondent, further, submitted that the State of Uttarakhand was one of the first state to come forward and make long term arrangement to purchase power from the stranded gas plant, thereby, cooperating with the policy of the Central Government to help the stranded gas plant from becoming a non performing asset, however, the Respondent submitted that the same cannot go to the disadvantage of the Respondent rather the Petitioner in all fairness should have not claimed any IDC in the first place. In reply, the Petitioner submitted that as per the Government of India Office Memorandum No. 4/2/2015-Th-I dated 27<sup>th</sup> March, 2015 the gas based projects (total capacity 24,149

MW) were categorized in two parts - (1) plants which are stranded and were not receiving any gas (with total capacity of 14,305 MW) and (2) plants receiving domestic gas for partial operation/low PLF (with total capacity of 9,844 MW). It is clear that the projects which were commissioned and operational were already receiving domestic gas as also referred by the Respondent. The Petitioner further stated that the domestic gas was allocated by the Government of India as per the policy and there has been no incompetency or laxity on the part of the Petitioner for procuring the same. The Petitioner also submitted that the generator could complete the project upto the stage of testing/trial and preserve the plant. Only after the allocation of gas, the Petitioner submitted that it could complete remaining activities which are necessary for commissioning including testing and trial. The Commission noted the submission made by the Petitioner and is of the view that the IDC may not be completely disallowed based on the reasons submitted by the Respondent. However, detailed analysis of time overrun and corresponding incidental IDC on 107 MW capacity has to be done in accordance with the principles laid down by the Hon'ble APTEL in this regard in its Orders and the same is discussed in the following Paras.

The Respondent submitted that UERC Tariff Regulations, 2015 provides that IDC shall be computed from the date of infusion of the debt fund and after taking into account the prudent phasing of fund up to SCOD. The Respondent submitted that there may be a situation where the generator during the period of construction ties up the generated power by entering into a PPA. In such cases, as submitted by the Respondent, Scheduled Commercial Operation Date (SCOD) is agreed therein if the generator is not able to commission the plant within SCOD, the other party has an opportunity to find out the reasons for delay after proper scrutiny of the available documents to establish the cause for the delay and, hence, would be in a position to show that the same is attributable solely to the generator. However, in cases like the present one the Respondent submitted that when the plant whose construction has been completed long time back enters into a PPA after more than 3 years and then commissions the plant, it is not possible for the other party to counter or find the falsity of the statement made by the Petitioner. Therefore, in such cases, the Respondent submitted that the IDC cannot be considered for a period beyond the time when the construction was completed which in the present case is 31<sup>st</sup>

March, 2012. The Respondent, further, submitted that as during this period the Respondent had no control over the Petitioner or any interest in the fact whether the Petitioner was getting delayed in commissioning or was for any other reason not being able to commission within time and the effect of such delay should be borne by the Petitioner himself otherwise it would imply that the Petitioner in any case will get the full recovery of all the cost incurred whereas the same without any reason would be borne by the consumers of the State. Hence, the Respondent stated that in the present case, the Petitioner was not entitled to any IDC beyond the SCOD date. In reply, the Petitioner submitted that the delay in commissioning was for the factors beyond the control of the Petitioner and it was categorized as 'Stranded Gas based Power Plant' by the Ministry of Power, Government of India. This clearly implies that the plant was stranded because of lack of fuel which was beyond the control of the generator. For the same reason, Government of India had come up with the policy for reviving the stranded gas based generation plants. Based on Government of India Office Memorandum No. 4/2/2015-Th-I dated 27<sup>th</sup> March 2015, Government of Uttarakhand issued a Government Order for procurement of power through gas based generating stations in the State and the PPA was signed by the Respondent for the same. The Commission is of the view that as far as the examination of the statement regarding delay in commissioning of the plant is concerned, entering into a PPA prior to the commissioning of the plant is not relevant. The Respondent has been given an opportunity to submit its comments on the Petition. Being a beneficiary of the plant, the Respondent always has a right to analyse relevant details/documents related to schedule plan of commissioning, actual date of commissioning and reason for delay and also corresponding time and cost overrun. Prior execution of PPA and due follow-up of project progress by the Respondent is hypothetical statement. The Respondent had already entered into a PPA with the Petitioner, copy of the Petition had been provided for due analysis and comments on the same. Further, the Commission has sought information/reasons for delay in the commissioning of the Plant. The Commission observed that during the period when the project remained stranded the Gas prices were inordinately higher and it was not financially viable to procure the Gas fuel at such higher prices. Further, the Commission has gone through the CEA progress reports submitted by the Petitioner and the same has been dealt in the subsequent Paras.

The Respondent submitted that even if, for the sake of evaluating the calculation of the Petitioner, the capital cost is considered as Rs. 397 Crore, as shown above, as per MYT Regulation 2015 the loan part comes to Rs.  $397 * 0.7 = 278$  Crore, therefore, the IDC claim up to March 2015 @ 11.2% p.a. comes out to be Rs. 93 Crore for 3 years as the PSDF scheme was applicable from 1<sup>st</sup> April 2015 onwards. The initial expected commissioning date of the project was 31<sup>st</sup> March 2012 but the Petitioner in its Petition has shown the 1<sup>st</sup> COD on 20<sup>th</sup> Jan, 2016 for the reason non-availability of gas and has claimed an IDC of Rs. 183.67 Crore up to 1<sup>st</sup> COD with additional pre-commissioning expenses of Rs. 41.28 Crore. The Respondent submitted that if the reason for delay was non-availability of gas/costly gas as claimed by the Petitioner then it is pertinent to mention that PSDF support was provided since 1<sup>st</sup> April 2015 and, therefore, the reason of non-availability-of gas/costly gas cannot be claimed from 1<sup>st</sup> April 2015 onwards. The Respondent submitted that the main reason for delay after 1<sup>st</sup> April 2015 was no PPA/sale of power which cannot be treated as Force Majeure but it is simply failure of the Petitioner to secure PPA for sale of power or lack of efforts on the part of the Petitioner to sell its power on IEX/PXIL or through short term tender. In reply, the Petitioner submitted that the capital cost of the project as stated by the Respondent is not Rs. 397 Crore but as submitted in the Petition with due justification, however, subject to prudence check by the Commission. Computation of loan and equity funding in accordance with the applicable regulation has been provided in the Petition. Further, detailed tabulation of interest charged by the banks for the loans since the date of disbursement to the date of commissioning along with bank statements has been furnished to the Commission. The Petitioner further submitted that the Government of Uttarakhand came out with notification in October 2015 based on which the Petitioner had submitted the request for entering into a PPA with the Respondent in October, 2015 itself and the PPA was finally signed in February, 2016 after receipt of approval of the Commission on the PPA. However, without waiting for the PPA to be signed, the Petitioner had started activities like arrangement for funds with banks, lining up of vendors for trial and testing activities soon after the PSDF Scheme was announced by Government of India in April, 2015. The Petitioner has submitted that it had also arranged gas required for testing and trial activities from the market since the gas allocated by the

Government of India could only be available after commissioning of the project for sale of electricity (incremental electricity) to be supplied only to the DISCOM and not to the exchange or trader.

The Commission has gone through the submissions of the Petitioner and the Respondent. Ministry of Power, GoI, declared the Petitioner as a successful bidder vide its letter dated 17.09.2015. Subsequently, the Petitioner entered into PSDF agreement on 18.09.2015 and then entered into an agreement with M/s GAIL for supply of gas on 21.12.2015. Thereafter, a draft PPA was submitted for approval to the Commission, vide application dated 11.12.2015 and the same was approved vide the Commission's Order dated 08.02.2016 subject to incorporation of certain modification in the PPA.

The Petitioner had submitted CEA progress reports. The Commission has gone through the reports and observed that CEA had carried out visit on 13.09.2013 and had observed that "*ST & STG erection is in progress and completion is expected by mid Nov., 2013*" and CEA had also mentioned that the combined cycle commissioning was expected in 12 weeks from Gas flow. The Petitioner had entered into contract with M/s GAIL for supply of gas fuel on 21.12.2015 and declared the commissioning of the 1<sup>st</sup> Unit of the Plant as on 16.03.2016, hence, as per CEA's observation the Petitioner has achieved commissioning within the specified time limit from the start of gas flow.

The Commission has considered all the comments of the Petitioner and the Respondent with respect to the soft cost. In respect of higher financing charges, the Petitioner in its Petition has submitted that the Project was initially expected to achieve date of commercial operation by 31.03.2012. However, the country suffered deficit in supply of domestic natural gas and prices in the spot market for imported RLNG sky rocketed whereby making the cost of energy unviable for discoms to procure. The existing gas based power plants as well as those power plants which were under construction got stranded. Till this time, the Petitioner had drawn major portion of debt and incurred capital expenditure on the Project. After the commitment from Government of India in respect of supply of gas under the Scheme, the commissioning and balance activities were taken up in the Project. The Petitioner, further, submitted that the CEA's report

states that the project had been completed before the completion of the 11<sup>th</sup> plan.

As per DPR, the project was to be commissioned within 18 months from the Zero Date. Further, the Petitioner vide its letter dated 31.03.2017 submitted that the Zero date was 30<sup>th</sup> September, 2010 i.e. the award of contract for EPC to M/s Luna Infraprop Pvt. Ltd. Accordingly, the Schedule date of commissioning works out to 31.03.2012. The Petitioner vide its various submission claimed that the project was completed by 31.03.2012 and only because of non-availability of gas it was not able to run the plant. The Petitioner also referred to CEA report to emphasise on its point. The Commission vide letter dated 26.10.2016 directed the Petitioner to submit the CEA report stating that the project of the Petitioner had been completed before the completion of the 11<sup>th</sup> plan. In reply, the Petitioner vide letter dated 10.11.2016 submitted CEA reports. As per the Report on CEA's visit dated 25.01.2011, the project was expected for commissioning during 11<sup>th</sup> plan. Further, Report on CEA's visit dated 31.05.2011 states that project can be commissioned latest by February, 2012. However, the subsequent report of the CEA, based on the Authority's visit dated 13.09.2013 has been summarized below:

- (a) GT and GTG erection have completed for both GT.
- (b) Both the Gas Turbines are expected to be commissioned in open cycle within a period of Maximum 4 weeks from Gas flow.
- (c) Erection of both HRGS also completed.
- (d) ST & STG erection is in progress and completion is expected by mid of November, 2013.
- (e) Combined cycle commissioning is expected in 12 weeks from Gas flow.

It is pertinent to mention that the Petitioner, vide its Petition dated 21.12.2015 and letter dated 19.01.2017 submitted that the project was completed by the end of March, 2012 and in support of its statement, the Petitioner vide letter dated 10.11.2016 submitted the PERT chart depicting that the entire plant was ready by end of March, 2012. However, it can be seen from the report of CEA that the ST and STG erection was in progress as on 13.09.2013 and was expected to be completed by November, 2013. Further, the combined cycle commissioning was

expected in 12 weeks from the gas flow. In this regard, the Commission directed the Petitioner to submit the reasons for the discrepancy regarding completion of the work in its submission and CEA report. In its reply, the Petitioner submitted that in the CEA visit report dated 13<sup>th</sup> September, 2013, what was mentioned as 'steam turbine and steam turbine generator erection was in progress' is basically referring to erection activities like pressure probes, temperature probes and other auxiliary instruments pertaining to steam turbine and generator and not to the erection of Steam Turbine and Steam Turbine Generator itself.

The Commission is of the view, though, the gas prices were high and it was not financially viable to procure such gas, yet the erection work of ST & STG should have been completed and ready for commissioning after 12 weeks from the availability of gas flow. From the report of CEA, the Commission noted that even on 13.09.2013 the plant was not ready as claimed to be ready for commissioning by the Petitioner. On the contrary the Petitioner persistently submitted that it was ready for commissioning, however, due to unavailability of gas it could not achieve commissioning of its plant.

Further, based on the CEA report, it could be seen that the project was not ready for combined cycle operation. Also, it cannot be affirmatively said that the STG was ready by mid of November, 2013. Therefore, the Commission decided to go through the audited annual accounts so as to establish when the major assets were capitalized and the plant was ready for commissioning. It has been observed from the audited accounts of FY 2014-15 that there was an increase in CWIP amounting to Rs. 1.77 Crore and advances increased by Rs. 8.55 Crore. Apparently, the erection work was still going on till the end of FY 2014-15. Further, from the audited accounts for FY 2015-16 the Commission also observed that there was an increase in hard cost amounting to Rs. 4.00 Crore (aprox.). The Commission analysed the PO/WO submitted by the Petitioner and observed that the increase in cost was due to expenditure incurred on account of services provided by expert team for pre-commissioning activities of GTGs and STG. Hence, it can be concluded that the erection work was completed by the end of FY 2014-15.

Regarding the increase in project cost due to time overrun, Hon'ble ATE in its Judgment in Appeal No. 72 of 2010 has clearly stipulated the treatment of cost

overruns and time overruns on account of delay under three cases, (i) due to factors entirely attributable to the Petitioner, (ii) due to factors beyond the control of the Petitioner, and (iii) situation not covered by (i) & (ii). In the present case, the Commission agrees that the commissioning of the project was beyond the control of the Petitioner due to non-availability of the fuel at reasonable rate, however, the erection/installation of the GTGs and STG was entirely under the control of the Petitioner. Hence, the Commission is of the view that the IDC and pre-operative expense from SCOD to March, 2015 should not be allowed as the Petitioner could not complete the entire erection work and the same has been treated as controllable. Accordingly, based on the above discussion, the Commission is of the view that the delay from the SCOD, i.e. 31.03.2012 to 31.10.2013 and also upto 31.03.2015 is attributable to the Petitioner. On the contrary, the Petitioner has submitted that the entire delay from the SCOD to actual COD was due to non availability of Gas.

Further, UPCL vide its letter dated 21.09.2016 submitted that the main reason for delay after 1st April 2015 was absence of PPA which cannot be treated as Force Majeure but it is simply the failure of the Petitioner to secure PPA for sale of power and neither the Petitioner tried to sell its power on IEX/PXIL or through short term tender. It has been observed that the contract of gas fuel supply was entered into by the Petitioner as on 21.12.2015 and the project was commissioned on 16.03.2016. As discussed above, CEA report mentioned that the combined cycle commissioning is expected in 12 weeks from Gas flow and the Petitioner commissioned the plant within 12 weeks from the availability of Gas fuel. Hence, Commission does not find UPCL's submission tenable for disallowance of IDC from 01.04.2015 to 16.03.2016. Beside it would not have been in the commercial interest of the Petitioner to sell power at IEX without any allocation of Gas under PSDF Scheme.

The Petitioner vide its letter dated 05.04.2016 was directed to submit the detailed computation of IDC along with the supporting documents. In reply, the Petitioner vide its letter dated 29.07.2016 submitted the interest statements indicating the interest charged by banks. Subsequently, the Commission vide letter dated 31.08.2016 directed the Petitioner to submit applicable interest rate from time to time for all the long term loans infused in the project alongwith the supporting

documents and also directed the Petitioner to submit the details of penal interest, if any, charged by the banks for delay in payment. In reply, the Petitioner vide letter dated 10.11.2016 submitted that the bank has charged penal interest amounting to Rs. 4.46 Crore.

Further, it has been observed from the audited accounts of FY 2015-16 that financial cost only upto 31.12.2015 has been capitalized whereas the 1<sup>st</sup> unit of the plant was not under commercial operation. In this regard, the Petitioner submitted that from the banking perspective, any invoice to the Discom even for infirm power which is raised by the company is deemed as commercial invoice, hence, from banking point of view, the expense was capitalized on 31.12.2015, whereas technically, the plant was commissioned in combined cycle mode on 16.03.2016 as per the provision of prevailing Regulations.

Further, the Petitioner vide letter dated 30.03.2017 was directed to submit the breakup of the bank charges from 1<sup>st</sup> April 2015 to COD and from COD to 31<sup>st</sup> March, 2016. In reply, the Petitioner vide letter dated 31.03.2017 submitted the detail of IDC and Bank charges for the whole FY 2015-16 without any breakup. However, the Petitioner submitted the interest and finance charges of Rs. 301.91 Crore upto 16.03.2016 vide auditor's certificate dated 19.03.2016 and the same has been considered by the Commission, subject to certain deduction on account of time overrun. As mentioned earlier, the Petitioner submitted that the Bank had charged penal interest amounting to Rs. 4.46 Crore, the Commission is of the view that Penal interest should not be pass through to the Respondent and subsequently to the consumers. Accordingly, the same has been deducted from the finance charges submitted by the Petitioner. Further, as discussed above regarding time overrun, the Commission is of the view that IDC pertaining to the period of time overrun i.e. April 2012 to March, 2015 is entirely attributable to the Petitioner, hence, the Commission has worked out the IDC amount to be disallowed for that period based on the details submitted by the Petitioner. The same has also been deducted from the total IDC submitted till 16.03.2016 vide auditor's certificate dated 19.03.2016. Thereafter, the Commission has determined the allowable IDC and finance charges amounting to Rs. 96.82 Crore till 16.03.2016 for the entire plant based on the worked out capital cost inclusive of pre-operative expenses. The same has further been

segregated amongst the capacity tied up and that stranded. Accordingly, allowable interest and finance charges works out to Rs. 49.79 Crore against the Petitioner's claim of Rs. 202.84 Crore for 107 MW of the plant.

**(ii) Pre-operative Expenses**

The Respondent submitted that the Petitioner has submitted computation for cost of Start-up power and commissioning expenses and has claimed Rs. 19.2 Crore till first CoD as the pre-operative cost, however, the payment against pre-operative expenses of Rs. 9.45 Crore till 1st CoD has already been paid to the Petitioner on actual basis. The Respondent requested not to consider the expenses claimed by the Petitioner. In reply the Petitioner submitted that under the revised forms of Tariff Petition submitted as per UERC Tariff Regulations, 2015, the Petitioner has claimed the actual expenses only. The Commission has noted the submission made by the Petitioner and is of the view that such expenses are admissible on actual basis.

Considering the start up fuel cost and recovery from infirm power pertaining to 107 MW of the plant, the Commission has applied the same methodology on the pre-operative expenses in line with determination of the admissible finance cost for 1<sup>st</sup> Unit of the plant till 16.03.2016. Based on the said methodology, Pre-operative expenses till 16.03.2016 work out to Rs. 15.70 Crore and the same has been segregated amongst the capacity tied up and that stranded. The admissible pre-operative expenses for 1<sup>st</sup> unit of the plant work out to Rs. 9.60 Crore.

Based on the above discussions, the Capital cost as per DPR, Capital Cost submitted for the entire plant till the COD by the Petitioner, Capital cost of 1<sup>st</sup> unit claimed by the Petitioner and admissible Capital Cost as on COD of 1<sup>st</sup> unit of the plant are as follows:

**Table 11: Capital Cost considered by the Commission as on 16.03.2016 (Rs. in Crore)**

Particulars	As per DPR	Capital Cost Submitted for the entire plant as on 31.08.2016	Capital Cost submitted for entire plant as on 16.03.2016	Capital cost claimed for 1 <sup>st</sup> Unit	Admissible Capital cost for 1 <sup>st</sup> Unit	Capital Cost after apportioned of soft cost
Freehold Land	14.42	11.46	11.46	11.46	5.73	6.76
Civil Works	70.75	51.29	48.11	48.11	24.47	28.89
Plant & Machinery	600.72	626.25	599.87	403.81	298.82	352.76
Furniture and Fixtures	0.00	0.36	0.32	0.32	0.18	0.21
Office Equipment & Others	0.00	0.11	0.09	0.09	0.05	0.06
Computers	0.00	0.04	0.03	0.03	0.02	0.02
Vehicles	0.00	0.42	0.21	0.21	0.21	0.25
Finance Cost	77.71	347.27	301.91	202.84	49.79	-
Pre-Operative Expenses	71.04	39.92	39.16	31.73	9.60	-
Preliminary Expenses		0.13	0.18		0.09	-
<b>Total</b>	<b>834.64</b>	<b>1077.19</b>	<b>1001.33</b>	<b>698.61</b>	<b>388.96</b>	<b>388.96</b>

#### 5.4 Additional Capitalisation and De-capitalisation

The Petitioner has submitted that it has not incurred any additional capital expenditure from COD of 1<sup>st</sup> unit of plant to 31.03.2016. Accordingly, no additional capitalization has been considered for the purpose of tariff determination. The Petitioner has vide its submission dated 10.11.2016 claimed additional capitalization of Rs. 39.91 Crore for FY 2016-17 and Rs. 3.98 Crore for each FY 2017-18 and FY 2018-19. Further, as mentioned in section dealing with the Business Plan, the Commission has not considered any additional capitalization. The Commission will review the additional capitalization based on the audited accounts at the time of truing up in accordance with the UERC Tariff Regulations, 2015.

##### 5.4.1 Initial Spares

The Respondent submitted that the request of the Petitioner for some additional spares under the ambit of initial spares, to be purchased in coming 3 years of the Control period is meaningless and arbitrary as the contracted capacity of plant has already been commissioned and for mere taking advantage of the facility of allowance of spares up to 4% of plant and machinery cost, the said request has been raised. The Respondent further submitted that all the initial spare should have been purchased and taken in capital cost at the time or before the CoD of the plant and not later. Further, the Respondent has submitted that it is important to consider that the plant consists of 2 identical sets of generators for which one common spare may be considered and considering half the capacity of the plant as contracted capacity that amount should also be divided proportionately. In reply, the Petitioner submitted that it has not considered 4% of Capital Costs as initial spares as per applicable Regulation in the initial project cost and requested that, in lieu of Initial Spares, it

may be allowed to undertake capitalization of Capital Expenditures on Spares which it plans to procure in FY 2016-17, FY 2017-18 and FY 2018-19. The Petitioner, further, submitted that the actual expenditure incurred under this head may be allowed during true-up subject to prudence check by the Commission. Also these spares will be procured based on the availability of the plant for the contracted capacity only. The Petitioner also submitted that as such, the benefit of availability of the non-contracted unit would be available to the Respondent without any extra burden on the Respondent. The scheme would also help in phasing out the capital expenditure under maintenance of high cost equipment like gas turbine by utilizing both the units in phased manner as the maintenance schedule of the machine is based on fired hours.

Regulation 21(11) of UERC Tariff Regulations, 2015 specifies as follows:

- 1.1 ***Initial Spares:*** *Initial spares shall be capitalized subject to the following ceiling norms as a percentage of the Plant and Machinery cost as per actuals upto the cut-off date:*
  - (i) *Thermal generating stations - 4.0%*
  - (ii) *Hydro generating stations - 4.0%*
  - (iii) *Transmission System*
    - (a) *Transmission line - 1.00%*
    - (b) *Transmission Sub-station - 4.00%*

As per above stated regulation, the initial spares shall be capitalized as per actual expenditure incurred subject to ceiling limit specified. Here it is pertinent to mention that FY 2016-17 has completed and no information regarding actual expenditure pertaining to initial spares has been submitted. Accordingly, the Commission has not considered the initial spares cost at present and the same will be reviewed at the time of truing up based on the actual expenditure subject to the ceiling limit specified under Regulations.

No amount on account of Additional Capitalisation has been allowed for the purpose of tariff determination. However, the same will be allowed at the time of truing up based on the audited accounts and as per prevailing Regulations.

#### **5.4.2 Capital Structure**

Proviso of Regulation 1(3) of UERC Tariff Regulations 2015 specifies that:

*“Provided, all new Projects commissioned after the notification of these Regulations shall be governed by the provisions of these Regulations.”*

Regulation 24 of UERC Tariff Regulations, 2015 specifies that:

*“(1) For a project declared under commercial operation on or after 1.4.2016, debt-equity ratio shall be 70:30. Where equity employed is more than 30%, the amount of equity for the purpose of tariff shall be limited to 30% and the balance amount shall be considered as normative loan. Where actual equity employed is less than 30%, the actual equity would be used for determination of Return on Equity in tariff computations.*

*....”*

In accordance with the above mentioned Regulations, debt-equity ratio shall be considered as 70:30. The amount of equity for the purpose of tariff determination shall be limited to 30% and where actual equity employed is less than 30%, the actual equity shall be considered.

The Petitioner has claimed debt-equity ratio of 81.27:18.73. The Commission vide letter dated 30.03.2017 directed the Petitioner to submit the debt-equity ratio as on CoD, i.e. 16.03.2016 alongwith supporting document. In reply, the Petitioner submitted that the total equity as on COD of 1<sup>st</sup> unit, i.e. 16.03.2016 was Rs. 195.50 Crore and the total debt as on 16.3.2016 was Rs. 813.82 Crore. However, it has been observed from the audited accounts that the equity is of Rs. 195.38 Crore. Accordingly, considering the debt of Rs. 813.82 Crore and Equity of Rs. 195.38 Crore, Debt-equity ratio works out to 80.64:19.36 and the same has been considered for the purpose of capital structure as on COD of the 1<sup>st</sup> unit of the Plant.

Capital structure as on COD is as follows:

**Table 15: Financing of GFA for FY 2015-16**

Particular	Claimed		Allowed	
	(Rs. in Crore)	%	(Rs. in Crore)	%
Debt	567.78	81.27	313.66	80.64
Equity	130.82	18.73	75.30	19.36
<b>Total</b>	<b>698.61</b>	<b>100.00</b>	<b>388.96</b>	<b>100.00</b>

The Petitioner has claimed financing of additional capitalization in debt equity ratio of 70:30. However, as mentioned above, the Commission has not considered any amount of additional captialisation. Hence, financing of the same also has not been considered, however, the same will be reviewed at the time of truing up based on the actual funding and applicable regulations. The Capital structure for the additional capitalization is as follows:

**Table 16: Financing of Additional Capitalisation**

Particular	FY 2016-17				FY 2017-18				FY 2018-19			
	Claimed		Allowed		Claimed		Allowed		Claimed		Allowed	
	(Rs. in Crore)	%	(Rs. in Crore)	%								
Debt	27.94	70.00	0.00	70.00	2.79	70.00	0.00	70.00	2.79	70.00	0.00	0.00
Equity	11.97	30.00	0.00	30.00	1.19	30.00	0.00	30.00	1.19	30.00	0.00	0.00
<b>Total</b>	<b>39.91</b>	<b>100.00</b>	<b>0.00</b>	<b>100.00</b>	<b>3.98</b>	<b>100.00</b>	<b>0.00</b>	<b>100.00</b>	<b>3.98</b>	<b>100.00</b>	<b>0.00</b>	<b>0.00</b>

### 5.4.3 Depreciation

Regulation 28 of the UERC Tariff Regulations, 2015 specifies as follows:

*“28. Depreciation*

*(1) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission.*

*Provided that depreciation shall not be allowed on assets funded through Consumer Contribution and Capital Subsidies/Grants.*

*(2) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.*

...

*(4) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix - II to these Regulations.*

....”

The Petitioner has claimed depreciation for FY 2015-16 (i.e. from COD to 31.03.2016) of Rs. 1.51 Crore corresponding to the GFA of Rs. 698.61 Crore. The Commission has worked out the depreciation of Rs. 0.86 Crore against the admissible GFA of Rs. 388.96 Crore for FY 2015-16 (i.e. from COD to 31.03.2016). Further, the Commission has determined the depreciation based on the admissible GFA for the second Control Period. Detail of the depreciation claimed and approved for the second Control Period is as follows:

**Table 17: Depreciation approved by the Commission for FY 2016-17 to FY 2018-19 (Rs. in Crore)**

Particulars	FY 2016-17		FY 2017-18		FY 2018-19	
	Claimed	Approved	Claimed	Approved	Claimed	Approved
Depreciation	35.40	19.63	36.60	19.63	36.81	19.63

### 5.4.4 Return on Equity

The Petitioner had claimed return on equity of Rs. 4.39 Crore corresponding to the equity amount of Rs. 145.99 Crore based on the expected COD dated 20.01.2016 in the Petition. However, the Petitioner, vide letter dated 10.11.2016, has submitted the revised tariff forms based on the actual COD and has not claimed any amount on RoE For FY 2015-16

as the Petitioner is a beneficiary of the PSDF Scheme for utilization of gas by stranded gas based power generating stations dated 27.03.2015 issued by the Ministry of Power.

The Respondent submitted that the Petitioner has mentioned about the PSDF support, however, the Petitioner has not disclosed as to what will be the effect in case there is an increase in PSDF support either in quantum or duration or when there is no PSDF support given by Government then what would be the effect of the same. The Respondent submitted that the benefit of any increase in any PSDF support shall be passed on to the Respondent and in case the PSDF support is not provided the effect of the same shall be borne by the Petitioner. The Respondent further submitted that under the scheme of PSDF support the Petitioner is not entitled for RoE, however, otherwise as per the Regulation, the RoE has to be given to the generator. The Respondent also submitted that there are various contingencies in the matter and the Tariff Regulations does not specifically cater to the situation of stranded gas based plants. As also stated by the Respondent, there is a possibility that the Petitioner in order to obtain RoE may not be interested in getting PSDF support even when the same is available, moreover, it would not be possible for the Respondent to justify the cause as to why the PSDF support was not extended to the Petitioner. Hence, the Respondent submitted that in case the PSDF Scheme is not extended to Petitioner then in such case also Petitioner should not be entitled to claim any RoE or in the alternative it should be specifically provided that the issue regarding PSDF support shall be settled by the generator with the Respondent and the generator should be bound to disclose to the Respondent all the efforts made by the Petitioner in obtaining the PSDF support including bidding. In reply, the Petitioner submitted that under PSDF scheme, the Government of India has fixed the capped unit price which is being charged to the respondent and also the same has also been approved as a provisional tariff by the Commission till the duration of the scheme. After the expiry of the scheme, the tariff would be as per the applicable regulations of UERC. The Petitioner, further, submitted that it will comply with the guidelines issued by the Government of India regarding PSDF scheme and relevant documents will be submitted to the respondent on specific direction by the Commission.

The Commission has gone through the submission of the Petitioner and the Respondent. With respect to applicability of the PSDF scheme and RoE, the Commission has not allowed any RoE for FY 2015-16 and FY 2016-17 as the Petitioner was bound by

the PSDF scheme and it is not entitled for any RoE for the said period. Further, as far as the applicability of the scheme is concerned, the Scheme will prevail only in the period specified in the scheme, thereafter, tariff will be determined as per prevailing UERC Tariff Regulations. Further, in case of extension of the PSDF scheme and adoption of the same by the Petitioner, based on the terms and conditions of the scheme view on the admissibility of RoE shall be taken by the Commission.

Regulation 26 of the UERC Tariff Regulations, 2015 specifies as follows:

***“26. Return on Equity***

*(1) Return on equity shall be computed on the equity base determined in accordance with Regulation 24.*

*Provided that, Return on Equity shall be allowed on account of allowed equity capital for the assets put to use at the commencement of each financial year.*

*(2) Return on equity shall be computed on at the base rate of 15.50% for thermal generating stations, transmission licensee, SLDC and run of the river hydro generating station and at the base rate of 16.50% for the storage type hydro generating stations and run of river generating station with pondage and distribution licensee on a post-tax basis.”*

Under the scheme, the Petitioner is not entitled for any RoE during the applicability of the Scheme. However, the Petitioner has claimed RoE of Rs. 5.60 Crore for FY 2016-17. Based on the above discussion, no RoE has been considered for FY 2015-16 and FY 2016-17. Further, details of the Return on Equity claimed and approved for FY 2017-18 and FY 2018-19 is as follows:

**Table 18: Return on Equity approved by the Commission (Rs. in Crore)**

Particular	FY 2016-17		FY 2017-18		FY 2018-19	
	Claimed	Approved	Claimed	Approved	Claimed	Approved
<b>Return on Equity</b>	5.60	0.00	22.23	11.67	22.41	11.67

**5.4.5 Interest on Loans**

Regulation 27 of the UERC Tariff Regulations, 2015 specifies as follows:

***“27. Interest and finance charges on loan capital and on Security Deposit***

*(1) The loans arrived at in the manner indicated in Regulation 24 shall be considered as gross normative loan for calculation of interest on loan.*

*(2) The normative loan outstanding as on 1.4.2016 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2016 from the gross normative loan.*

*(3) The repayment for each year of the Control Period shall be deemed to be equal to the depreciation allowed for that year*

*...*

*(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio of the previous year after providing appropriate accounting adjustment for interest capitalised:*

*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered.*

*Provided further that if the generating station or the transmission system or the distribution system or SLDC, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the Transmission Licensee or the Distribution Licensee or SLDC as a whole shall be considered.*

*(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

*...“*

The Petitioner in the petition had claimed interest on normative loan of Rs. 11.87 Crore based on the expected COD of 20.01.2016. Further, the Petitioner vide letter dated 10.11.2016 has submitted that normative loan of Rs. 567.78 Crore as on actual COD (81.27% of project cost of Rs. 698.61 Crore) has been considered for the purpose of determination of tariff and the depreciation of Rs. 1.51 Crore has been considered as normative repayment of loan as per applicable Tariff Regulations, 2011 for FY 2015-16. The Petitioner has considered the weighted average rate of interest of 11.00% p.a. for computation of interest on normative loan which is Rs. 2.73 Crore for FY 2015-16, i.e. (from COD to 31.03.2016).

As discussed in above Paras, normative loan worked out under “Capital structure” as on 16.03.2016 has been considered as opening normative loan for FY 2015-16 and repayment has been considered equal to admissible depreciation, i.e. Rs. 0.86 Crore. Further, weighted average rate of interest has been derived based on the interest amount of FY 2015-16 and average long term borrowing which works out to 11.15% p.a. The main reason for the variation in the interest rate claimed by the Petitioner and worked out is that the Petitioner has not considered the Standard Chartered Bank loan for vehicles. Interest on normative loan works out to Rs. 1.53 Crore by applying the rate of 11.15% p.a. Accordingly, the Commission has approved interest on loan for FY 2015-16 (i.e. COD to

31.03.2016) as Rs. 1.53 Crore. Further, the Commission has considered the same weighted average rate of interest for the computation of the admissible interest amount for the second Control Period and approved depreciation for the respective year has been considered as repayment of normative loan in accordance with the UERC Tariff Regulations, 2015. Details of the interest claimed and allowed for the second Control Period is given in the Table below:

**Table 19: Interest on Loan approved by the Commission for FY 2016-17 to FY 2018-19 (Rs. in Crore)**

Interest on Normative Loan	FY 2016-17		FY 2017-18		FY 2018-19	
	Claimed	Approved	Claimed	Approved	Claimed	Approved
Gross Opening Normative Loan	567.78	313.66	595.72	313.66	598.51	313.66
Cumulative Repayment	1.51	0.86	36.91	20.49	73.51	40.13
Net Opening Normative Loan	566.27	312.80	558.81	293.17	524.99	273.53
Additional Capitalisation	27.94	0.00	2.79	0.00	2.79	0.00
Normative Repayment of loan	35.40	19.63	36.60	19.63	36.81	19.63
Net Closing Normative Loan	558.81	293.17	524.99	273.53	490.97	253.90
Average Normative Loan	562.54	302.98	541.90	283.35	507.98	263.71
Rate of Interest	11.54%	11.15%	11.45%	11.15%	11.61%	11.15%
<b>Normative Interest</b>	<b>64.90</b>	<b>33.77</b>	<b>62.05</b>	<b>31.59</b>	<b>59.00</b>	<b>29.40</b>

#### 5.4.6 Operation & Maintenance (O&M) Expenses

Regulation 48(1) of Principal UERC Tariff Regulations, 2015 specifies as follows:

- (1) Normative O&M Expenses for Open Cycle Gas Turbine/Combined Cycle generating stations shall be as under:

**Table 20: Normative O&M Expenses for FY 2015-16(In Rs. Lakh/MW)**

Year	Gas Turbine/ Combined Cycle generating stations		Small gas turbine power generating stations (less than 50 MW Unit size)
	With warranty spares for 10 years	Without warranty spares	
2015-16	9.25	13.87	16.83
2016-17	9.86	14.79	17.95
2017-18	10.52	15.77	19.14
2018-19	11.22	16.82	20.41

The Petitioner has claimed O&M expenses of Rs. 1.33 Crore for FY 2015-16 based on the norms specified for F class machines as specified by CERC. However, the UERC Tariff Regulations, 2015 did not specify any norms for advance F class machines till amendment to UERC Tariff Regulations, 2015. Accordingly, based on the applicable norms of O&M for Combined cycle generating station, O&M expenses works out to Rs. 0.65 Crore on pro-rata basis for FY 2015-16, i.e. from COD to 31.03.2016 against the claim

of the Petitioner of Rs. 1.33 Crore.

Based on the representations received from gas based generating plants in the State, the Commission has amended the Regulations to incorporate provision for normative O&M expenses for advance F class machines w.e.f. 18.01.2017. As per UERC Tariff Regulations 2017 (First Amendment), Regulation 48(1) of the Principal Regulation provides that:

- (2) **Normative O&M Expenses for Open Cycle Gas Turbine/Combined Cycle generating stations shall be as under:**

**Table 21: Normative O&M w.e.f. 18.01.2017 (In Rs. Lakh/MW)**

Year	Gas Turbine/ Combined Cycle generating stations		Small gas turbine power generating stations (less than 50 MW Unit size)	Advance F class Machines
	With warranty spares for 10 years	Without warranty spares		
2015-16	9.25	13.87	16.83	28.36
2016-17	9.86	14.79	17.95	30.29
2017-18	10.52	15.77	19.14	35.35
2018-19	11.22	16.82	20.41	34.56

Since the UERC Tariff Regulations 2017 (First Amendment) came into force w.e.f. 18.01.2017, accordingly, till 17.01.2017, Principal Regulation will be applicable and from 18.01.2017 onwards, norms of First Amendment Regulation will be applied. Accordingly, based on the applicable O&M norms, detail of the O&M expenses claimed and allowed by the Commission are as follows:

**Table 22: O&M expenses for FY 2016-17 to 2018-19 approved by the Commission (In Rs. Crore)**

Particular	FY 2016-17		FY 2017-18		FY 2018-19	
	Claimed	Approved	Claimed	Approved	Claimed	Approved
O&M expense	32.41	19.19	34.61	34.61	36.98	36.98

#### 5.4.7 Interest on Working Capital

As mentioned in earlier Paras, UERC Tariff Regulations 2015 shall be applicable for all the projects commissioned after the date of notification of the said Regulation. Accordingly, interest on working capital for FY 2015-16 along with the second Control Period, i.e. from FY 2016-17 to FY 2018-19 will be determined in accordance with Regulation 33 of UERC Tariff Regulations, 2015.

Regulation 33 of UERC Tariff Regulations, 2015 specifies as follows;

*In case of open cycle Gas Turbine/Combined Cycle thermal generating stations, working capital shall cover:*

- a) *Landed fuel cost for 1 (one) month corresponding to the NAPAF duly taking into account the mode of operation of the generating station on gas fuel and liquid fuel;*
- b) *Liquid fuel stock for ½ (half) month corresponding to the NAPAF, and in case of use of more than one liquid fuel, cost of main liquid fuel duly taking into account mode of operation of the generating stations of gas fuel and liquid fuel;*
- c) *Operation and maintenance expenses for one month;*
- d) *Maintenance spares @ 30% of operation and maintenance expenses; and*
- e) *Receivables equivalent to 2 (two) months of Capacity Charge and Energy Charges for sale of electricity calculated on NAPAF duly taking into account the mode of operation of the generating station on gas fuel and liquid fuel.*

The Petitioner has further submitted that it has considered the rate of interest on working capital equal to SBI PLR of 14.05% in accordance with the Regulations.

The Commission has determined the interest on working capital for the second Control Period in accordance with the aforesaid Regulations as discussed below.

#### **5.4.7.1 Landed Fuel Cost**

The Landed fuel cost has been determined based on the actual information derived from the GAIL bills and based on the SHR of 1925 kCal/kWh. Further, landed fuel cost computed for the FY 2016-17 has been considered for FY 2017-18 and FY 2018-19 which works out to Rs. 26.11 Crore.

#### **5.4.7.2 One Month O&M Expenses**

The O&M expenses for one month based on the approved O&M expenses as discussed above works out to Rs. 1.24 Crore, Rs. 1.60 Crore, Rs. 2.88 Crore and Rs. 3.08 Crore for FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 respectively.

#### **5.4.7.3 Maintenance Spares**

In accordance with the above referred regulations, approved maintenance spares works out to Rs. 4.45 Crore, Rs. 5.76 Crore, Rs. 10.38 Crore and Rs. 11.09 Crore for FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 respectively.

#### **5.4.7.4 Receivables**

The Commission has approved the receivables for two months based on the

approved net AFC for FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 respectively, works out to Rs. 66.84 Crore, Rs. 67.28 Crore, Rs. 71.43 Crore, Rs. 71.46 Crore for FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 respectively.

Based on the above, the total working capital requirement of the Petitioner for FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 works out to Rs. 98.63 Crore, Rs. 100.74 Crore, Rs. 110.81 Crore and Rs. 111.74 Crore respectively. The Commission has considered the rate of interest on working capital as 14.05% equal to State Bank Advance Rate (SBAR) as on the date of filing of the MYT Petition and, accordingly, the interest on working capital works out to Rs. 0.61 Crore, Rs. 14.15 Crore, Rs. 15.57 Crore, and Rs. 15.70 Crore for FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 respectively against the claim of the Petitioner of Rs. 0.58 Crore for FY 2015-16, Rs. 14.15 Crore for FY 2016-17, Rs. 15.57 Crore for FY 2017-18 and Rs. 15.70 Crore for FY 2018-19. The interest on working capital for FY 2016-17 to FY 2018-19 approved by the Commission for the second Control Period from FY 2016-17 to FY 2018-19 is as shown in the Tables below:

**Table 23: Interest on Working Capital approved by the Commission (Rs. in Crore)**

Particular	FY 2015-16		FY 2016-17		FY 2017-18		FY 2018-19	
	Claimed	Approved	Claimed	Approved	Claimed	Approved	Claimed	Approved
Landed Fuel Cost for one month corresponding to NAPAF	22.60	26.09	24.32	26.11	28.00	26.11	28.00	26.11
1 month of O&M Expenses	2.49	1.24	2.66	1.60	2.85	2.88	3.04	3.08
Maintenance Spares@ 30% of O&M	0.40	4.45	9.72	5.76	10.38	10.38	11.09	11.09
2 months Receivables	68.23	66.84	73.93	67.28	84.46	71.43	84.43	71.46
Total Working Capital	93.71	98.63	110.64	100.74	125.68	110.81	126.56	111.74
Interest on Working Capital @ 14.05%	0.58	0.61	15.55	14.15	17.66	15.57	17.78	15.70

Further, the Commission vide its Order dated 17.04.2017 had allowed M/s SEPL to forego interest on working capital in lieu of non-chargeability of rebate by UPCL on payment of bills raised by M/s SEPL. Relevant extract of the above mentioned Order is as follows:

*“From the above illustration, it is clear that there will be net saving in cost of power purchase to the tune of about Rs. 13 Crore per year or Rs. 1 Crore p.m. under the arrangement that UPCL does not charge rebate to M/s SEPL and in turn M/s SEPL*

*foregoes interest on working capital. However, this arrangement will only be applicable to M/s SEPL as other Gas based generators in the State have not given their option to this effect. Keeping in view, the overall benefit to UPCL and consumers of the State, the Commission allows implementation of the above arrangement between UPCL and M/s SEPL. The Commission also advises other Gas based generators to explore the option forwarded by M/s SEPL in the interest of UPCL and consumers of the State.*

*Accordingly, the direction issued by the Commission vide its Order dated 25.01.2017 regarding non-applicability of provision of rebate till 31.03.2017 and deduction of rebate by UPCL thereafter, shall be limited to only two Gas based generators namely M/s GIPL and M/s Beta Infratech for whom the provision relating to deduction of rebate by UPCL on the energy bills shall be governed in accordance with the original PPA approved by the Commission. However, the Respondents will be at liberty to raise the fortnightly bills to UPCL corresponding to fuel bills raised by M/s GAIL in accordance with the principles laid down in the Commission's Order dated 25.01.2017."*

In response, M/s GIPL vide its letter dated 28.04.2017 informed that they had given their offer to UPCL to surrender their claim on interest on working capital in lieu of exemption of 2% rebate on payment of fortnightly and monthly bills. Accordingly, based on the M/s GIPL consent as above, interest on working capital has not been included in the annual fixed charges (AFC) as discussed in subsequent paras.

#### **5.4.8 Non-Tariff Income**

Regulation 46 of UERC Tariff Regulations, 2015 specifies as follows:

*"46. Non Tariff Income*

*The amount of non-tariff income relating to the Generation Business as approved by the Commission shall be deducted from the Annual Fixed Charges in determining the Net Annual Fixed Charges of the Generating Company.*

*Provided that the Generating Company shall submit full details of its forecast of non tariff income to the Commission in such form as may be stipulated by the Commission from time to time.*

*The indicative list of various heads to be considered for non tariff income shall be as under:*

- a) Income from rent of land or buildings;*
- b) Income from sale of scrap;*
- c) Income from statutory investments;*
- d) Interest on delayed or deferred payment on bills;*
- e) Interest on advances to suppliers/contractors;*
- f) Rental from staff quarters;*
- g) Rental from contractors;*

h) Income from hire charges from contactors and others;

i) Income from advertisements, etc.;

j) Any other non- tariff income.

*Provided that the interest earned from investments made out of Return on Equity corresponding to the regulated business of the Generating Company shall not be included in Non-Tariff Income."*

The Petitioner has not proposed any non-tariff income for FY 2015-16 and for the second Control Period of FY 2016-17, FY 2017-18 and FY 2018-19, accordingly, no non-tariff income has been adjusted by the Commission as of now. However, the same is subject to correction during the truing up proceedings.

#### 5.4.9 Annual Fixed Charges for FY 2015-16

Based on the above analysis, the Commission has worked out the approved figures of Gross AFC for FY 2015-16. The summary of Gross AFC for FY 2015-16 is as shown in the Table below:

**Table 24: Annual Fixed Charges for FY 2015-16 (from CoD to 31.03.2016) approved by the Commission (Rs. in Crore)**

Particulars	As claimed by the Petitioner	As approved by the Commission
Depreciation	1.51	0.86
Interest on Loan	2.73	1.53
Return on Equity	0.00	0.00
O&M Expenses	1.33	0.65
Interest on Working Capital	0.58	-
Less: Non-Tariff Income	0.00	0.00
<b>Total</b>	<b>6.14</b>	<b>3.03</b>

Accordingly, Net Annual Fixed Charges approved by the Commission for FY 2015-16 works out to Rs. 3.03 Crore.

Since for FY 2015-16 AFC is to recovered through single part tariff as discussed in Chapter 3 of this Order, accordingly, based on the approved AFC and Saleable Energy recovery of the same shall be allowed at the rate of Rs. 0.89/kWh.

In accordance with the UERC Tariff Regulations, 2015, the Annual Fixed Charge (AFC), for the second Control Period as claimed and approved by the Commission is shown in the Table below:

**Table 25: Annual Fixed Charges approved by the Commission for FY 2016-17 to FY 2018-19 (Rs. in Crore)**

Annual Fixed Charges	FY 2016-17		FY 2017-18		FY 2018-19	
	Claimed	Allowed	Claimed	Allowed	Claimed	Allowed
Depreciation	35.40	19.63	36.60	19.63	36.81	19.63
Interest on Loan	64.90	33.77	62.05	31.59	59.00	29.40
Return on Equity	5.60	0.00	22.23	11.67	22.41	11.67
O&M Expenses	32.41	19.19	34.61	34.61	36.98	36.98
Interest on Working Capital	15.55	0.00	17.66	0.00	17.78	0.00
<b>Total</b>	<b>153.85</b>	<b>72.60</b>	<b>173.15</b>	<b>97.51</b>	<b>172.98</b>	<b>97.68</b>
Non Tariff Income	0.00	0.00	0.00	0.00	0.00	0.00
<b>Net AFC</b>	<b>153.85</b>	<b>72.60</b>	<b>173.15</b>	<b>97.51</b>	<b>172.98</b>	<b>97.68</b>

#### **5.4.10 Annual Fixed Charges, Capacity Charge and Energy Charge Rate (ECR) for FY 2016-17, FY 2017-18 and FY 2018-19**

Based on the above analysis for all the heads of expenses of AFC, the Commission has approved the Annual Fixed Charges (AFC) of the Petitioner for the second Control Period attributable to its beneficiary.

Regulation 49 of UERC Tariff Regulations, 2015 specify as follows:

***“49. Computation and Payment of Annual Fixed Charges and Energy Charges for Thermal Generating Stations***

- (1) *The fixed cost of a thermal generating station shall be computed on annual basis, based on the norms specified under these Regulations, and recovered on monthly basis under capacity charge. The total capacity charge payable for a generating station shall be shared by its beneficiaries as per their respective percentage share/allocation in the capacity of the generating station.*
- (2) *The capacity charge (inclusive of incentive) payable to a thermal generating station for a calendar month shall be calculated in accordance with the following formulae:*

$$AFC \times (NDM / NDY) \times (PAFM / NAPAF) \text{ (in Rupees).}$$

*Where,*

*AFC = Annual fixed cost specified for the year, in Rupees.*

*NAPAF = Normative annual plant availability factor in percentage*

*NDM = Number of days in the month*

*NDY = Number of days in the year*

*PAFM = Plant availability factor achieved during the month, in percent:*

*Provided that in case of generating station or unit thereof or transmission system or an element thereof, as the case may be, under shutdown due to Renovation and*

Modernisation, the generating company or the transmission licensee shall be allowed to recover part of AFC which shall include O&M expenses and interest on loan only.

- (3) The PAFM shall be computed in accordance with the following formula:

$$NPAFM = 10000 \times \sum_{i=1} DCi / \{ N \times IC \times ( 100 - AUX ) \} \%$$

$$i = 1$$

Where,

AUX = Normative auxiliary energy consumption in percentage.

DCi = Average declared capacity (in ex-bus MW), for the ith day of the period, i.e. the month or the year as the case may be, as certified by the State load dispatch centre after the day is over.

IC = Installed Capacity (in MW) of the generating station

N = Number of days during the period i.e. the month or the year as the case may be.

**Note:** DCi and IC shall exclude the capacity of generating units not declared under commercial operation. In case of a change in IC during the concerned period, its average value shall be taken.

- (4) Incentive to a generating station or unit thereof shall be payable at a flat rate of 50 paise/kWh for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to Normative Annual Plant Load Factor (NAPLF) as specified in Regulation 47(2).
- (5) The energy charge shall cover the primary fuel cost and shall be payable by every beneficiary for the total energy scheduled to be supplied to such beneficiary during the calendar month on ex-power plant basis, at the energy charge rate of the month (with fuel price adjustment). Total Energy charge payable to the generating company for a month shall be:

$$(\text{Energy charge rate in Rs./kWh}) \times \{\text{Scheduled energy (ex-bus) for the month in kWh.}\}$$

- (6) Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formulae:

- (a) For gas and liquid fuel based stations

$$ECR = GHR \times LPPF \times 100 / \{CVPF \times (100 - AUX) \}$$

Where,

AUX = Normative auxiliary energy consumption in percentage.

CVPF = Weighted Average Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic meter, as applicable for gas and liquid fuel based stations.

ECR = Energy charge rate, in Rupees per kWh sent out.

GHR = Gross station heat rate, in kCal per kWh.

*LPPF = Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month.*

- (7) *The generating company shall provide to the beneficiaries of the generating station the details of parameters of GCV and price of fuel, i.e. natural gas, RLNG, liquid fuel etc., as per the forms specified at Annexure-I to these regulations:*

*Provided further that copies of the bills and details of parameters of GCV and price of fuel i.e. natural gas, RLNG, liquid fuel etc., shall also be displayed on the website of the generating company. The details should be available on its website on monthly basis for a period of three months.*

- (8) *The landed cost of fuel shall include price of fuel corresponding to the grade/quality /calorific value of fuel inclusive of royalty, taxes and duties as applicable, transportation cost by rail/road/gas pipe line or any other means for the purpose of computation of energy charges."*

Based on the above regulations, capacity charges and energy charges shall be recovered by the Petitioner from the Respondent corresponding to the contracted capacity. Further, the Petitioner's plant commenced supply of power to UPCL pursuant to the Scheme of GoI allowing the recovery of overall tariff from beneficiary (UPCL) only to the extent of the target price, i.e. Rs. 4.70/kWh. In addition, the Petitioner has also received PSDF support during the currency of the Scheme, accordingly, difference in actual overall per unit charges (Rs. 4.70/unit from UPCL + PSDF support p.u. received from MoP) recovered by the Petitioner and approved fixed charges per unit alongwith per unit energy charges is required to be settled. In case overall per unit actual recovery inclusive of PSDF support is in excess of the approved overall per unit fixed charges in this Order and actual energy charges, then the Petitioner is liable to refund the difference to the Respondent. Further, in case overall recovery is less than the approved overall per unit fixed charges in this Order and actual energy charges then no adjustment would be required till the end of FY 2016-17, i.e. upto validity of the PSDF Scheme of GoI. The summary of approved Capacity Charge and actual Energy Charge Rate (ECR) considered by the Commission and actual per unit charges recovered by the Petitioner is given in the Table below:

**Table 26: Approved Capacity Charge and actual Energy Charge Rate considered by the Commission for FY 2015-16 and FY 2017-18**

Particular	FY 2015-16	FY 2016-17	
		1st half	2nd half
Fixed Charge (Rs./kWh)	0.89	0.93	0.93
Energy Charge (Rs./kWh)	4.09	3.95	4.20
<b>Total</b>	<b>4.98</b>	<b>4.89</b>	<b>5.14</b>
Paid by UPCL	4.70	4.70	4.70
PSDF Support	1.42	-0.03	0.21
<b>Total</b>	<b>6.12</b>	<b>4.67</b>	<b>4.91</b>

From the above mentioned table it is apparent that in FY 2015-16 actual per unit amount realized by the Petitioner is in excess of the approved overall charges considered by the Commission, hence, the Respondent is entitled to get refund of the excess amount remitted to the Petitioner. Whereas for FY 2016-17 approved overall per unit charges are higher than that actually recovered by the Petitioner, hence, no adjustment is required since during the validity of the PSDF Scheme for FY 2016-17. It is also hereby clarified that the energy charge rate (ECR) as mentioned above are the average ECR based on the actual fuel bills raised by the Petitioner, accordingly, for the purpose of adjustment of excess recovery, actual energy charges is required to be considered. Accordingly, both the Petitioner as well as the Respondent are directed to reconcile the amount to be adjusted amongst themselves based on the principles stipulated above within 15 days of the date of Order.

Further, as already held in Para 5.4.8, since the Petitioner has not been allowed any interest on working capital based on its offer and in accordance with the decision of the Commission in its Orders dated 20.07.2016 and 17.04.2017 that in case of no interest on working capital is claimed by the generator then no rebate would be allowed to UPCL. The relevant extract of the Orders dated 20.07.2016 and 17.04.2017 are reproduced below:

**Extract of the Orders dated 20.07.2016**

*“... In case the tariff determined by the Commission in accordance with the Regulations for the generator exceeds the capped price, then apparently the generator will not be able to recover its Annual Fixed Cost (including Interest on Working Capital) determined in accordance with the Regulations and if the tariff determined falls short of the capped price then interest on working capital would be allowed to the generator as per the Regulations. Therefore, if the generator gets interest on working capital, it will have to pass on the rebate to UPCL otherwise no rebate would be allowed to UPCL. The Commission would take a view on the*

same during tariff determination proceedings of the Respondent. “

**Extract of the Orders dated 17.04.2017**

*“In this regard, the Commission in its Order dated July 20, 2016 on approval of PPA between UPCL and M/s SEPL has already held as under:*

*“...Therefore, if the generator gets interest on working capital, it will have to pass on the rebate to UPCL otherwise no rebate would be allowed to UPCL. The Commission would take a view on the same during tariff determination proceedings of the Respondent.”*

*The above provision has been made since the tariff determination proceedings of both the gas generators commissioned in the State, i.e. M/s GIPL and M/s SEPL are under process and, accordingly, the Commission was of the view that decision on applicability of rebate can be made based on the approved AFC for these generators and the recoveries made by them including the PSDF support during the currency of the Scheme. If the approved AFC (including interest on working capital) and energy charges remains within the ceiling of Rs. 4.70 per unit and the PSDF support, the generators will have to pass on the rebate to UPCL and in case the approved AFC (including interest on working capital) and energy charges for the past period exceed the recoveries made by the generator during the corresponding period then no rebate will be chargeable for that period from the Gas Generator.”*

Based on the above, the Respondent is required to refund the amount of rebate deducted from the bills of the Petitioner for both the financial years within one month of the date of Order.

5.4.11 Ordered accordingly.

**(Subhash Kumar)  
Chairman**