ORISSA ELECTRICITY REGULATORY COMMISSION
BIDYUT NIYAMAK BHAWAN,
UNIT – VIII, BHUBANESWAR – 751 012
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Present: **Shri B. K. Das, Chairperson**
Shri S. K. Jena, Member
Shri K. C. Badu, Member

CASE NO. 72/2007

Director (Tariff), OERC, Bhubaneswar ……. Petitioner

Vrs.

Grid Corporation of Orissa Ltd., Janpath, Bhubaneswar and others …….. Respondent

Date of Hearing : 03.01.2008
Date of Order : 14.03.2008

ORDER

1.0 The Govt. of Orissa, Department of Energy have initiated a Draft Policy Paper on "Harnessing of surplus power from Captive Generating Plants" of the State of Orissa. The Commission while furnishing its views / comments on the aforesaid Draft Policy Paper intimated the State Govt. that the Commission would determine the price of surplus power of Captive Generating Plants (CGPs) through a consultative process.

2.0 Accordingly the staff of the Commission prepared the Draft Consultative Paper on the pricing of surplus power from Captive Generating Plants which the Commission has approved on dtd.29.09.2007. The salient points of the aforesaid Draft Consultative Paper are mentioned as under:

(i) The Commission have adopted the following assumptions for pricing of surplus power from CGPs of the State:-

(a) Minimum capacity of the CGP to supply to Grid should be 1 MW.

(b) Supply of 700 units or more per hour per MW from CGP through contract is defined as **"Firm Power"**. This is based on the normative load factor of 70% or more.

(c) Any supply from CGP through contract which is less than 700 units per hour but 500 units or more per MW is defined as **"Non-Firm Power"**. This is based on normative load factor of 50% and more but less than 70%.

(d) Any supply from CGP with contract, which is less than 500 units per hour per MW and all supply from CGP without any contract is defined as **Inadvertent injection of power**.

(e) Availability of **Firm power** from CGP to the Grid is further classified as under:

- **Long-Term Firm Power-** The long-term firm power is the quantum of energy which a CGP on the basis of its declared availability is obliged to deliver as scheduled in the given period **(normally exceeding one year)**.
- **Short-Term Firm Power** – The short-term firm power means the quantum of energy, which is available for a shorter term **up to one year**.

(f) The surplus generation of the CGP is dependent on their industrial production except those who commit for a firm scheduled supply.

(ii) The Commission has proposed Long-Term Firm Power Pricing of surplus power from CGPs as under:

- All the firm power scheduled from CGP shall be paid for at the bid price determined through competitive bidding route with a ceiling price of Rs. 2.55 per kwh. This is based on average Central Grid frequency of 49.7 HZ corresponding to the threshold frequency of a normal hydro station. The corresponding UI rate is Rs. 2.55 per kwh.
- All the Non-firm power scheduled from CGP shall be paid through UI mechanism with a ceiling price of Rs. 1.80 per kwh which is based on the average cost of Central NTPC ER Power of Rs. 1.80 per kwh.
- All the Inadvertent injection of power from CGP shall be priced through UI mechanism with a ceiling price of 50 paise per kwh which is based on average cost of State Hydro Power of 50 paise per kwh.

(iii) The Commission has proposed Short-Term Firm Power Pricing of surplus power from CGPs as under:

- All the firm power scheduled from CGP shall be priced through UI mechanism with a ceiling price of Rs. 1.80 per kwh which is based on the average cost of Central NTPC ER Power of Rs. 1.80 per kwh.
- All the Non-firm power scheduled from CGP shall be paid through UI mechanism with a ceiling price of Rs. 1.20 per kwh which is based on the pool cost of Orissa Power of Rs. 1.20 per kwh.
- All the Inadvertent injection of power from CGP shall be priced through UI mechanism with a ceiling price of 50 paise per kwh which is based on average cost of State Hydro Power of 50 paise per kwh.

(iv) The Commission proposes that any inadvertent injection of power by any CGP not covered under Para 9 and 10 above shall be priced through UI mechanism with a ceiling price of 50 paise per kwh which is based on average cost of State Hydro Power generation of 50 paise per kwh.

3.0 The Commission ordered that the Consultative Paper on Pricing of surplus Power from Captive Generating Plants should be floated in the OERC web-site for the information of all the Stake-Holders and general public at large. Accordingly, the public notice was floated in Commission's website: www.orierc.org on dtd.01.10.2007, requesting any person/ institution/ organization to offer their views/ suggestions/ objections on the aforesaid Consultative Paper by 23.10.2007.

3.1 The public notice as well as the Consultative Paper on pricing of surplus CGP power were also sent to all the CGPs as well as to the Secretary, CCPPO and the President, Utkal Chambers of Commerce and Industries vide letter dtd.01.10.2007. The aforesaid Consultative Paper was also sent to all the Regulatory Commissions CERC & SERCs vide letter dtd.01.10.2007. The public notice as well as the aforesaid Consultative Paper were also sent to the Department of Energy, Govt. of Orissa, C.M.D, GRIDCO and O.P.T.C.L, C.M.D, O.H.P.C, M.D, O.P.G.C and CEOs of CESU, NESCO, SOUTHCO & WESCO vide letter dtd.01.10.2007 to file their comments/ submissions, if any by 23.10.2007.

4.0 The Department of Energy, Govt. of Orissa vide letter No. 9200 dtd.17.10.2007 intimated the Commission that the Consultative Paper on pricing of surplus power from Captive Generating Plants is required to be examined at various levels of Govt. before finalizing the views / suggestions of the Govt. in the matter. The Govt. therefore requested the Commission to give another one month more time to file the views/ suggestions of the Govt. in the aforesaid matter.

5.0 In keeping with the request of the State Govt., the Commission allowed one month more time to the Govt. of Orissa, Department of Energy vide letter No. 1869 dtd.26.10.2007 to file the views/ suggestions of the Govt. on the aforesaid Consultative paper by 22.11.2007.

5.1 The public notice was also floated in the OERC web-site requesting any person/ institution/ organization to offer their views/ suggestions/ objections on the aforesaid Consultative Paper by the extended date i.e by 22.11.2007. All the CGPs, Regulatory Commissions and Licensees were also intimated individually the extended date line i.e 22.11.2007 to submit their views/ suggestions.

6.0 In response to the public notice, 23 numbers of submissions were received from the individuals/ institutions/ organizations by the date-line extended i.e by 22.11.2007. The details of persons / Organizations responded to Consultative Paper on Pricing of Surplus Power from Captive Generating Plants are shown in Annexure-A attached herewith.

7.0 The Govt. of Orissa, Department of Energy did not file the views/ suggestions of the Govt. neither within the extended date-line i.e by 22.11.2007 nor thereafter. The Commission therefore decided to hear the aforesaid matter on 03.01.2008 and directed Government to submit the views of the State Govt. during hearing.

8.0 Accordingly, the matter was taken up for hearing on 03.01.2008. Mr.S.N.Ghosh, Director (Tariff) – Petitioner in this Suo-motu proceeding is present, Mr. Sukanta Chandra Mohanty, Law Officer, Dept. of Energy, GoO, Mr. A.C. Mallick, Director(C), GRIDCO, Mr. J.P.Das, Sr. G.M (R&T), OPTCL, Mr. J. Padhi,

Director (Operation), OHPC, Mr. S.S. Manurkar, E.D., (Prod.) & Mr. A.K. Singh, GM (F), NALCO, Mr. S.K. Nanda for CII, Mr. Sanjeev Das, Secretary, CCPPO, Mr. S.K. Choudhury, DGM (C) for SOUTHCO, Dr. K.K. Das, Advisor, UPSC, Mr. R.P. Mohapatra, Mr. A.K. Parida for Nava Bharat Ventures, Mr. L. Pangari, Advocate for JSL, Mr. M.V.Rao. & H.P. Mohapatra for FACOR, Mr. Chander Prakash & A.R. Agarwal for SMC Power Generation Ltd., Mr. R.C. Satpathy Secretary, National Institute of Indian Labour are present. Nobody has appeared for RSP, KERC, HERC, WESCO, NESCO, Vedanta Aluminum Ltd. and Bhushan Power & Steel Ltd.

Mr. M.K. Singh, G.M (AT & C) & Mr. Lingaraj Padhi, Manager (Com.), CESU were present and prayed to implede CESU as Respondent in this case. The Commission allowed CESU to offer their views on the aforesaid Consultative Paper during hearing.

8.1 Mr. R. C. Satpathy, Secretary, National Institute of Indian Labour, during the hearing submitted as under:

(a) He filed a photo copy of the paper cutting published in the Times of India Bhubaneswar edition on dtd.20.12.2007 under the heading ***"Finance Ministry raps backdoor power entry"***, where it is stated that the Revenue Department of Ministry of Finance, Govt. of India has opposed the Power Ministry's proposal to extend fiscal concession to power projects and made the following specific comments on sale of surplus power from captive generating plants **"Capital assets of Captive Plants are normally taken on the balance-sheet of the main company. Thus, all fixed costs of Captive Plants are accounted for and such Plants need to incur variable costs generating power for supply to the Grid/ power users. The Revenue Department said that, if selling price is determined by competitive bidding alone, competitors of Captive Plants – who have to factor in costs relating to capital assets and variable expenses both-will be at considerable pricing disadvantage. Thus, Captive Plants will be able to sell electricity at considerable profit because of the "unfair advantage conferred on them in the draft Cabinet note".**

(b) He submitted that the Ministry of Finance has categorically pointed out that the capital assets of Captive Plants say 960 MW of NALCO (the company mainly for the production of aluminum) are normally taken on the balance-sheet of NALCO for production of Allumina / Alluminium as the fixed costs have already been accounted for in the cost of production of the finished good Allumina / Alluminium. Hence, he submitted that, if a CGP like NALCO incurs only variable costs for generation/ supply about 50 / 60 MW surplus power to the State GRID as the fixed cost of CGP of 960 MW of NALCO has already been factored in production cost of their finished good Allumina / Alluminium.

(c) He submitted that the Ministry of Finance has further pointed out that if selling price of power from CGP is determined through competitive bidding alone with the IPPs who have to factor in both fixed & variable costs for production of power, the IPPs will be at considerable pricing disadvantage and Captive Generating Plants will earn supernormal profit from such sale of power.

(d) He submitted that Para-6.3 of the National Tariff Policy formulated by Ministry of Power has also stated that the tariff for harnessing of Captive Generation should include variable cost of generation at actual cost and a reasonable compensation for capacity charges.

(e) He submitted that against the very observation/ recommendation of Ministry of Finance as well the provision in Para-6.3 of National Tariff Policy, OERC has proposed to give to CGPs a price of 255 P/U on injection of 1 MW power and above in long-term (more than one year) and 180 P/U in short-term (less than one year) is totally unjust and against the interest of 24 lakhs consumer of the State of Orissa.

In view of the above submissions, Mr. Satapathy prayed before the Commission on behalf of National Institute of Indian Labour to modify the Consultative Paper on pricing of power for Captive Generating Plant as per the suggestions mentioned below for the greater interest of consumers of Orissa:

(i) The minimum surplus power injected shall be 10 MW and above.

(ii) The long term firm power shall be 7 years and above as per National Tariff Policy.

(iii) The Price for long-term firm power shall be a hybrid of actual variable cost and a reasonable capacity charges which is no case shall be more than the average pool cost of Orissa power which is about 120 P/U at present.

(iv) The price of short-term power in no case shall be more than the variable cost of NTPS TSTPS (Kaniha) power, which is about 70 paise per unit.

(v) The price for inadvertent power in no case shall be more than the cost of Machkund power which is about 25 paise per unit.

8.2.0 Mr. S. K. Nanda on behalf of Confederation of Indian Industry (CII) said that CEA report on power supply position of the country, for the period from April to November 2007 indicates that there is energy shortage of 37,880 MU (7.9%), 1991 MU (3.9%) and 197 MU(1.6%) in the country, Eastern Region & Orissa respectively. Similarly there was peak shortage of 16,564 MW (15.60%) during Dec, 2007 as the Peak Demand was 1,06,184 MW and the Peak Demand met was 89,620 MW.

He submitted that although Govt. of Orissa had signed 13 nos of MOUs with IPPs in June & September 2006 for a capacity addition of about 16190 MW at an estimated expenditure of about Rs.68,299 Cr., due to various reasons a very few IPPs may be able to generate power commercially during XI Plan period and Orissa may have to face a situation of shortage of power. He therefore submitted that the CGPs are only hope for Orissa to inject their surplus power which will reduce transmission loss due to very nature of their distributed generation. He submitted that as envisaged in the provision of Electricity Rules 2005, up-coming CGPs in Orissa are coming with huge additional capacity to the extent of 49% of their requirement for the production of the principal finished product provided the CGPs are incentivised for injection of such surplus power. He submitted that the concerns of CGPs are many due to higher variable cost, inadequate provision for banking & net energy exchange, higher ED on auxiliary consumption and collection of three times of the injected cost for supply of back-up power from the Grid.

Mr. Nanda on behalf of CII advocated that in view of the problems faced by the CGPs vis-a-vis the benefits State Grid gains, the Hon'ble Commission may take a pragmatic view, while deciding the pricing policy for CGP power which would benefit both the CGPs as well as the State.

8.2.1 The salient points of CII's submission on assumptions adopted by the Commission in Para-8 of the Consultative Paper are as under:

(a) The assumption of basing the UI Charge at 49.7 Hz. Of grid frequency, to fix the price at 255 P/U does not seem to be reasonable. Unless remunerative cost is allowed for the surplus power to the CGPs, they may prefer to sell their surplus power to outside traders/consumers and the State grid may suffer in the long run.

(b) Similarly also the selling price suggested for the 'non-firm' power with a ceiling price of 180 P/U based on U.I. Charge at 49.9 Hz seems to be unreasonable and needs a reconsideration.

(c) The inadvertent injection of power which is defined as contracted supply of less than 500 Units /MW/Hr or any power not contracted for, at a price of 50 P/U seems to be unreasonable especially as the variable cost only, at present cost, is more than Re.1/Unit for Small or Medium Captive Power Plants.

(d) The Hon'ble Commission, in their Tariff Order dated 22.03.07 has permitted such inadvertent power to be purchased from the CPPs, during the year 2007-08 @ 103.23 P/U.

8.2.2.0 The salient points of CII's submission on Commission's proposal at Para-9, 10 & 11 of the Consultative Paper are as under:

8.2.2.1 The Electricity Act, 2003 mandates that the Commission, in case of shortage of supply of electricity can fix minimum and maximum tariff for sale and purchase of electricity. The National Tariff Policy also provides that the prices should differentiate for Off Peak and Peak supply and the tariff should include variable cost of generation at actual levels and reasonable compensation for capacity charge.

8.2.2.2 The best alternative will be to have a floor price, which has been introduced in some other State with ceiling at a higher level, so that a CGP is assured of getting a minimum floor price unless he can qualify for a higher price and accordingly may arrange his generation. Karnataka has suggested a floor price of 228 p/u with a ceiling rate of 345 p/u for all 'firm' power. For the 'infirm' power, they have suggested a flat rate of 205 p/u for all supplies above 49.76 Hz and 310 p/u at a frequency below 49.5 Hz.

8.2.2.3 Other States do not differentiate between 'infirm' and inadvertent power and suggest same rate for both the categories. Other States like, Maharashtra, pay 90% of the 'firm' rate for 'infirm/inadvertent' power. Tamil Nadu suggest the ceiling rate of 2/3rd of the UI rate at 49.0 Hz (745 p/u) for 'firm' power and 90% of the 'firm' rate for 'infirm' power.

8.2.2.4 Based on the above, it is suggested by CII that:-

(a) There should be only two categories (i) 'firm' power, which is the power contracted by the CGP to be supplied to the Grid continuously for one year and (ii) 'infirm' power which is inadvertently supplied to the Grid though not contracted for. There should be no separate category for inadvertent power.

(b) A floor price may be fixed for both 'firm' and 'infirm' power, so that the CGP is assured at a minimum rate and would be encouraged to generate more power and inject to the grid to meet the power shortage situation.

(c) 90% of the 'firm' power price should be kept as price for 'infirm' power.

(d) The ceiling price for firm power should be the UI rate at 49.5 Hz and not 49.7 Hz (Rs.3.45 p/u).

(e) If inadvertent power is decided to be kept as separate category, minimum rate should not be less than 110 p/u (which is the present rate allowed by the Hon'ble Commission in the tariff for 2007-08 plus cost increase in fuel and oil price only), which is taking care of the variable cost of generation only. Some cost should be allowed extra towards the fixed cost/capacity charge.

(f) One common rate may be fixed for the CGPs, to maintain transparency and prevent false reporting.

(g) Different rates may be allowed for 'peak' and 'off peak' power supply.

Mr. Nanda on behalf of CII submitted that such liberal provisions will help the State to mitigate the impending power shortage position by encouraging CGPs to increase their power generation and feed them to the State Grid instead of going to outside traders who purchase power at a higher rate.

8.3.0 Dr. K.K.Das, Advisor, UPSC thanked the Commission for bringing out such an informative and exhaustive draft Consultative Paper on pricing of surplus power from CGPs of the State. He suggested that as the UI mechanism is being taken care by RLDCs, the firm, non-firm and inadvertent power of CGPs can be priced at UI rate.

He submitted that a Buyer or a Trader may not be interested to go for long-term contract for sourcing surplus power from CGPs as the price indicated against long-term is more than the price indicated for short-term. Based on the provision of National Tariff Policy, he requested the Commission to evolve appropriate price for peak / off-peak power so that the CGPs will be encouraged to generate more during peak hours to bridge the demand supply gap which has now touched almost 15.6% at the National level.

8.3.1 The salient points of written submissions of Dr. Das are as under:

(a) The proposal under Para-9 & 10 states that all the Non-firm power scheduled from CGP shall be paid through UI mechanism. UI pool account is handled by RLDCs. Payment through UI mechanism may pose unnecessary delay in receiving payment by Captive Plants and such procedure may need approval of CERC etc. It may please be appreciated by the Commission that the statement priced through UI mechanism and paid through UI mechanism are not the same. This point may be taken care of.

(b) It would be better if different price ceilings are adopted for peak and off peak periods. Higher price would encourage the Captive Plant to assist the grid during peak shortage. The National Tariff Policy has also made such provision for peak/off peak period vide Para- 3.9.1(c) of consultative paper.

(c) When the Captive Plant is supplying power as per contract why define this power as non-firm power? It is better to consider all contracted power as firm power but to put different price cap for peak and off peak period.

(d) Usually the Commission approves tariff on annual basis. Therefore there is no reason to differentiate this power as Long Term Firm power and Short Term Firm power. As a purchaser if the long term power cost is more we will never enter into an agreement for more than one year. This will totally negate the effort of harnessing captive generation. Therefore, it is desirable to incorporate a penal rate if the captive plants fail to supply contracted or firm power specially during low frequency period.

(e) Captive plants should totally avoid inadvertent injection. They should be made aware about management of grid under ABT Regime, specially during rainy season if frequency is above 50 C/s, no payment should be made for inadvertent injections. Rather stiff penalty should be imposed for such injection.

(f) Before arriving at a price cap, it would be better to invite cost data from captive owners. In case the owner has got concessions/discounts for captive plants the price cap may be lower. If the fuel cost is more, higher prices may be allowed otherwise the owner may not like to assist the grid.

8.4.0 Mr. R.P.Mohapatra thanked the Commission for bringing out the Draft Consultative Paper on pricing of CGP power in the State of Orissa. He welcomed the suggestions of the Commission for sourcing of power from the CGPs with smaller installed capacity injecting as low as 1 MW. Such type of distributed generation will be a significant factor in reducing the Transmission and Distribution loss. He supported the Commission's proposal of 70% Load Factor for CGPs for firm supply of power. He opined that the long-term period should be for 5 years and more and less than that should be short-term period. He suggested that the expert's opinion may be ascertained from the legal luminaries whether the Commission has the authority to fix-up the price of sourcing of surplus power from CGPs under different conditions/ assumptions, when the Indian Power Sector has established Electricity Market for transaction of Power through Power Exchanges.

8.4.1 The salient points of submissions of Mr. Mohapatra are as under:

(a) The concept of competitive bidding for determination of the cost of power is applicable only for the IPPs and cannot be extended to the CGPs due to the following considerations:

- If the bidding process is adopted, the lowest offer will be from the waste heat recovery units. The other power stations cannot supply power at this rate.
- OERC may determine the rates without competitive bidding.

(b) The Commission has specified load factor on hourly basis. It will be cumbersome to bill for power received by the Grid taking into account the hourly load factors. On similar analogy, the load factor of CGPs may be determined on annual basis and billing may be done on the monthly load factor basis.

(c) (i) In Orissa 'One supplier' model is in force. The BST is lower than the rate suggested in the consultative paper for firm power both on 'Long Term' and 'Short Term' basis. The Distribution Licensees will not be interested to receive this costly power. Therefore all the power injected into the system either at HT or at EHT should be treated as purchase of power by GRIDCO, who shall also be responsible for making payment for the energy received.

(ii) The connectivity with the Grid should be at 11KV/33 KV or at EHT. The Commission has already permitted connectivity with the Grid at HT for renewable and non-conventional sources of energy.

(iii) The metering of the power injected in to the system should be located at the bus bar of the CGP. The tariff or the CGPs connected at EHT to the Grid may provide an additional charge to have incentive for connectivity at EHT. This will also reduce the losses in the system.

(iv) All the coal based CGP's annual escalation may be allowed being limited to the specific consumption of coal and oil.

(d) The weighted average variable charge including FPA for all the Thermal Power Stations (State & Central Sector), which supply power to the Orissa Grid works out to 74.5 p/u. Therefore, the inadvertent exchange of power which is determined as less than 50% LF cannot be priced below this price. In addition, notional fixed charges of about 15 p/u may be allowed. In such a case the inadvertent exchange of power may be priced as 90 p/u instead of 50 p/u. The smaller CGPs will not be able to get Coal Blocks or even coal linkage and will have to depend on sourcing coal from the open market which will be much higher. Therefore, variable cost of CGP will be higher than 74.5 paise calculated above. The Commission may consider either on yearly escalation or determine the variable cost during each tariff hearing.

(e) It is suggested that the rate for power supply at LF of 50% or more but less than 70% which is classified as 'Non-firm power' may be fixed at 202 p/u for long term pricing.

(f) For short term pricing firm power may be priced at 202 p/u and non-firm power at 180 p/u.

8.5. Mr. J. P. Das, Sr. G.M (R&T) on behalf of OPTCL stated as under:

(a) The assumptions made by the Commission at Para 8 (a) to 8 (d) for segregation of CGPs on the basis of availability of firm power, non-firm power and inadvertent injection and to the classification of availability of firm power at 8 (e) and 8 (f) are necessary and may be adopted.

(b) The rate Rs. 2.55 per Kwh fixed for long term firm power, the rate Rs. 1.80 per Kwh for long term non-firm power and the rate Rs. 0.50 per Kwh for inadvertently injected power arrived by the Commission are reasonable and may be adopted.

(c) The rate Rs. 1.80 per Kwh fixed for short term firm power, the rate Rs. 1.20 per Kwh for short term non-firm power and the rate Rs. 0.50 per Kwh for inadvertently injected power arrived by the Commission are reasonable and may be adopted.

8.6.0 Mr. A.C.Mallick, Director (Commercial) on behalf of GRIDCO submitted during the hearing that 17th EPS projection of CEA for Orissa for XI Plan period states that the peak demand of the State would touch 2927 MW, 3257MW, 3633MW, 4020MW and 4459 MW in the FY 2007-08, 2008-09, 2009-10, 2010-11, 2011-12 respectively. The Govt. of Orissa and GRIDCO have executed MOU and PPA with 13 nos of IPPs to set-up Thermal Plants in the State on BOOM Model for a capacity addition of about 16,000 MW. But excepting M/s. Sterlite Energy Ltd., non-other IPP has started the project construction works by now. Orissa is gradually proceeding to face an impending power deficit scenario. He submitted that such power situation of the State has compelled GRIDCO to harness power from CGPs at present and as well as in future years. He submitted that in-fact GRIDCO has purchased 542.89 MU, 663.74 MU, 604.61 MU, 550.35 MU & 783.86 MU from CGPs during the FY 2002-03, 2003-04, 2004-05, 2005-06 & 2006-07 respectively. The harnessing of power from CGPs during the FY 2007-08 is expected to touch 750 MU against Commission's approval of 413.45 MU.

8.6.1 The salient features of written submission of GRIDCO are as under:

(a) Presently, Orissa has reached a break neck situation with regard to demand and supply. In order to meet the supply and demand gap the surplus power of CPP is to be availed by the State. Hence, the CPPs are to sell their surplus power to GRIDCO first. In case of refusal by GRIDCO, CPP may sell their power to outside.

(b) GRIDCO/OSEB started purchasing CPP power @ 70 paise/kwh. Based on market condition, GRIDCO have increased the rate of CPP power and now the following graded rates are offered to CPPs for supply of firm power.

Up to 8 MU	Rs. 2.02 /kwh
8 MU and above	Rs. 2.30/kwh
32 MU and above	Rs. 2.50 /kwh

8.6.2 The Commission while approving the Annual Revenue Requirement (ARR) and determination of Bulk Supply Price (BSP) for GRIDCO for the FY 2007-08 in Case No. 55 of 2006 at Para - 5.44 of Order dtd.22.03.2007 has remarked that the Commission would prefer harnessing of surplus power from the existing and up-coming CGPs of the State for this purpose. The Commission has ordered that the current practice of negotiated price between GRIDCO and CGPs may continue till it is decided by the Commission. The Commission observed that the Govt. of Orissa has declared GRIDCO as the **"State Designated Entity",** it is therefore imperative on the part of GRIDCO to file before the Commission what should be the ideal / appropriate price for harnessing of surplus power from CGPs under different conditions and different scenarios as stated in the Draft Consultative Paper adopting the principle of **"Live and Let Live"** as Orissa sources hydro power of about 7500 MU per annum from OHPC on payment of an average of 50 paise/ kwh which fulfills about 40% of the State's requirement of the power whereas the CGP's contribution is only about 3% of the State's requirement at present.

The Commission therefore directed GRIDCO to file their submission on the aforesaid matter within 3 days.

8.7 Mr. S.K. Choudhury, DGM (Commercial) on behalf of SOUTHCO submitted as under:

(a) SOUTHCO proposes Long-Term Firm Power Pricing of Surplus power from CGPs as under:

* All the firm power scheduled from CGP shall be paid for at the bid price determined through competitive bidding route with a ceiling price of Rs. 1.03 per kwh based on the Average cost of State Power purchase.

* All the Non-firm power scheduled from CGP shall be paid through UI mechanism with a ceiling price of Rs. 0.50 per kwh which is based on the Average cost of State Hydro Power of Rs. 0.50 per kwh.

* All the Inadvertent injection of power from CGP shall be priced through UI mechanism with a ceiling price of 50 paise per kwh which is based on average cost of State Hydro Power of 50 paise per kwh.

(b) SOUTHCO proposes Short-Term Firm Power Pricing of surplus power from CGPs as under:

* All the firm power scheduled from CGP shall be priced through UI mechanism with a ceiling price of Rs. 0.50 paise per kwh which is based on the average cost of State Hydro Power of Rs. o.50 per kwh.

* All the Non-firm power scheduled from CGP shall be paid through UI mechanism with a ceiling price of Rs. 0.50 per kwh which is based on the average cost of State Hydro Power of Rs. 0.50 per kwh.

* All the Inadvertent injection of power from CGP shall be priced through UI mechanism with a ceiling price of 50 paise per kwh which is based on average cost of State Hydro Power generation of 50 paise per kwh.

(c) SOUTHCO proposes that any inadvertent injection of power by any CGP not covered under Para 9 and 10 of consultative paper on pricing of surplus power shall be priced through UI mechanism with a ceiling price of 50 paise per kwh which is based on average cost of State Hydro Power generation of 50 paise per kwh.

(d) SOUTHCO further submits that the Hon'ble Commission may not consider the fixed charges of the cost of the power for arriving pricing of the CGPs.

8.8 Mr. Manoj Ku. Singh, G.M (AT & C) on behalf of CESU submitted as under:

(a) In case the CGP is synchronized with the 33KV supply system through suitable arrangement, the Distribution Utilities can get wheeling charge and the cost per unit for wheeling energy and that for the transmission loss for wheeling has to be decided by the Hon'ble Commission.

(b) Firm power must be based on normative Load Factor of 70% and it must be injected during peak load hours.

(c) Under the circumstance when CGP is no capable of supplying the required firm power during agreement period, such power supply should be treated as inadvertent power which consequently result in deviation of tariff depending on the power supply.

(d) The OPTCL/GRIDCO should not charge for the transmission loss occurring due to the injection of firm power from CGPs.

(e) Since the payment for firm power scheduled from CGP has to be made at bid price through competitive bidding a price level should be fixed for regulating the prices as follows:

Long-term:

(i) Firm power – Rs.2.55
(ii) Non-firm power – Rs.1.50
(iii) Inadvertent power – Rs.0.50

Short-term:

The price level for short-term firm power should be fixed as per the following:

(i) Firm power – Rs.1.50
(ii) Non-firm power – Rs.1.20
(iii) Inadvertent power – Rs.0.50

8.9.0 Mr. Sanjeev Das, Secretary, Confederation of Captive Power Plants, Orissa CCPPO thanked the Commission for preparation of such an excellent Draft Consultative Paper on pricing of surplus power from CGPs for the State of Orissa. The salient points of his submission during hearing on dtd.03.01.2008 are as under:

8.9.1 Orissa has a history of lower tariff due to high hydro mix and thus this contours of mind set prevents us from looking beyond the protection regime enjoyed by us in the last four decades.

8.9.2 In response to the submission made by the Secretary, National Institute of Indian labour, he submitted that the recommendations made and reported in a media are only suggestive in nature and have absolutely no bearing on the regulatory practices that are supposed to be adopted within the ambit of law by the regulatory commission. In this context, he mentioned that the market mechanism and regulatory regime cannot be ignored in today's context.

8.9.3 There are two sides of the captive power plants operating anywhere in the State and the country. The demand side of the Captive Power Plant is governed by the requirement of the parent industries to have the quality power. The demand for captive power is also a supplement to the exposure required by the State to augment power generation. The supply side is influenced by the fact that whether the captive power plant will seek open access or should trade with the State utility.

8.9.4 The pricing of captive power is basically aimed at commoditizing power which is an extremely difficult proposition unlike Independent Power Plants and Merchant Power Plants, reason being that the captive power plant has lot of variables like firm, infirm and inadvertent supply within this ambit. There could be variation in timings of supply, requirement by the parent industries, shutdown, break down, availability of transmission facilities etc. Thus the entire mechanism becomes too complex and complicated.

8.9.5 There was a reference to fixed cost of the captive power plant, which needs to be clarified here. The fixed cost of power is apportioned to the number of units generated assuming a normative load factor. It is very incorrect to state and assume that the entire fixed cost is charged to the parent industries and the parent products. The surplus/available power from a captive power plant necessarily has to have a component of fixed cost as well as full component of variable cost.

8.9.6 He submitted that the Unscheduled Interchange (UI) tariff over a period of one and half years calculated on a 15-minute time-block worked out to Rs.3.00 per unit at 49.62 Hz. Although such a median calculation is necessarily required for forming a background method of power tariff fixation in case captive power plants within the ambit of Availability based tariff the exercises would require high degree of communication and technical expertise to dissect individual Captive Power Plant's contribution to the grid for evaluating the penalty or reward that they deserve.

8.9.7 Captive power plants are set up in the State of Orissa, which is likely to become powerhouse for the entire country. It is important to understand the contribution made by the captive power plants to the State and reciprocal arrangement of costs and benefit should be put in place so that the state as well as the captive power plants have a win-win position during the impending power deficit scenario in XI Plan period (2007-2012).

8.9.8.0 Mr. Das on behalf of CCPPO proposed that the bench-mark price proposed by OERC i.e. Rs.2.55/kwh or there abouts may be kept as the minimum rate for the captive power plant that flows in to the system. Gridco may be permitted to do inter state trading of the power and the margin earned by Gridco over and above the bench- mark price intended for the captive power plant may be shared at a ratio appropriately decided by the Commission. This will take care of two things:

(a) One – it will take care of the variation in the inter state trading regime between lean and good periods as well as takes care of the quantum of the power required to be pumped into the system whether it is firm, infirm or inadvertent nature.

(b) This mechanism shall not only help Gridco to over come losses but also such reciprocal mutually beneficial arrangement will have a pioneering impact on all regulatory Commissions in the country.

8.9.8.1 Mr. Das therefore submitted a proposal before the Commission during hearing that CCPPO and Gridco should set up a “Special Purpose Vehicle” (SPV) with equal equity participation which will look after the single purpose of inter-state trading with profit sharing mechanism amongst CCPPO constituent/member in a proportion of their share in terms of quantum of power injected. This will be an innovative approach to encourage captive power plants voluntarily getting induced to inject into the state instead of passing through the vagaries of open access mechanism and will be a win-win scenario for both GRIDCO & CCPPO.

8.9.9 The other salient features of written submission of CCPPO are as under:

(a) The entire gamut of decision-making process would involve five options that should be decided.

(i) Surplus power that the CGP wishes to sell to the State Licensee(under conditions of 5 years and more & less than 5 years)

(ii) Surplus power that the CGP wishes to sell outside under open access-permission to be granted under open access.

(iii) Availability of a CGP (entire balance after 51% self consumption for captive status) to the state licensee. (Under conditions of 5 years and more & less than 5 years).

(iv) Availability of a CGP that the CGP whishes to sell after deducting its commitment to inter state trader under open access commission to grant open access.

(v) A combination of commitment (50% of the 49% balance to the State licensee as 'available' and 50% for inter-state trader).

(b) The 'availability' can be termed as 'firm power' and the 'surplus' as 'infirm power'.

(c) The Commission can decide if it is 50% of the balance 49% of the installed/generation or 40% so that the CGP could trade the balance power under open access.

(d) Concept of short-term and long-term should not be there and only (available) firm, (surplus) non-firm & inadvertent supply as defined by Commission should be kept. This is so since for long-term supplies can be always effected as per Section-63 of the Act.

(e) Once the power is being injected into the grid, it is not fair to compartmentalize the same as firm and infirm.

(f) Pricing of Emergency power required for start up by CGP should also be considered as a composite package. Net exchange of power should be considered as criteria for all future transactions between a CGP and the state licensee.

(g) At Max Frequency of 49.95 Hz, the rate applicable should be 169.06 and at a Min Freq of 49.14, the UI rate be 507.73. At a median frequency of 49.62, the UI rate be Rs.3.00.

(h) Realistically the CGP pricing should be based on the median frequency.

- The ceiling should be the UI charges at the minimum frequency and the range at which the entire price mechanism should operate is between the median frequency and the minimum frequency.
- Of course all this again needs to be considered for 'available' power for a period of 5 years and above commitment.
- For power supply below 5 years the rate can be 90% of the rates applicable as above.
- For 'surplus' above five years the rate could be 80% of the rates fixed as in above and
- For 'surplus' less than 5 years rates could be 70% of the rates fixed as in above.
- The trade off shall be the consideration of market driven price mechanism Vs. the regulatory and technical constraints of a CGP off loading power to an inter state trader.
- Consequently, therefore in the first case with the median frequency of 49.62 Hz the rate shall be Rs.3.00 and the ceiling should be Rs.5.07 at 49.14 frequency. The range should be between frequency of 49.14 to 49.62. The other categories can be automatically calculated based on this.
- For inadvertent power, commission may kindly go through the cost sheet of a typical power station and fix the tariff covering a portion of the cost.

(i) Since short term would mean any period less than 5 years, let the CGP have a contract for a minimum period of five years so that its financial planning can be worked out and the CGP can be set up as early as possible.

(j) The Commission can think of 5 years as the benchmark period and in case it is proposing to change the benchmark period then the index pricing should be changed to average frequency and not median frequency. There should be no range of frequency linked pricing in that case and the price should be firm with a variation in percentage i.e. 90%, 80% and 70%.

8.10 Mr. S.C. Mohanty, Law Officer, Department of Energy on behalf of Govt. of Orissa requested the Commission during hearing to allow another one month time for submission of the views of the State Govt. on pricing of surplus power form Captive Generating Plants. The Commission directed the Govt. to file its submission within a period of 15 days.

8.11 Mr. A.K. Parida, Chief Resident Manager on behalf of M/s. Nava Bharat Ventures Ltd. (NBVL) submitted as under:

(a) The average per unit cost of power from State Hydro is as low as 50.55 Paise as against per unit cost of Central Sector Hydro Power at 161.78 Paise. The above analysis adduces a conclusion that the present pooled cost of power of the State is bound to go from the existing 120 Paise/kwh, considering the cost of future addition in Hydro and Thermal. As such fixing the power cost for purchases from CGP at the ceiling cost of 120 Paise/kwh is not justified.

(b) NBVL suggests the following pricing for Surplus Power CGPs:

(i) That for firm supply, CGP is paid at least a flat Rs. 3.45 P/U i.e. the ABT Rate at 49.5Hz for full band of frequency and any deviation on firm supply be handled through ABT charges.

(ii) That for Non-Firm supply CGP be paid at least through a flat rate of mid band of 49.5Hz to 49.75 Hz i.e at 49.75 Hz ABT rate i.e. Rs. 2.88 P/U.

(iii) That for inadvertent supply, the ABT rate may be provided or alternatively at a rate of Rs. 1.50 P/U as ABT rate at 50 Hz is to be paid.

(iv) That the cost incurred on fuel alone for small and medium sized thermal plants is over Rs. 1.00 P/U and as such any price below such price even for inadvertent injection of power from CGP would be non-remunerative.

NBVL is of the view that the concept of short-term and long-term should not be there and only firm, Non-firm and inadvertent supply as defined by Commission should be kept in view while forming a pricing policy for power from CGPs as long-term supplies from a CGP can always be effected as per Section 63 of the Act.

8.12.0 Mr. L. Pangari, Advocate on behalf of M/s. Jindal Stainless Ltd. submitted before the Commission that the Load Factor consideration for determination of the pricing of surplus power from CGP is not appropriate and that will defeat the very purpose of provision of the Act, National Electricity Policy and National Tariff Policy to encourage CGPs for maximization of injection of the surplus power to the State Grid. He submitted that the comparison of rates of CGP power with hydro and NTPC rates is inequitable. He advocates that the Commission should allow net energy exchange as well as energy banking.

8.12.1 The other salient features of the written submission filed by M/s. Jindal Stainless Ltd. are as under:

(a) Firm, non firm and inadvertent power definitions as proposed in the consultative paper may be dispensed with and should be in line with CERC guidelines.

(b) All the energy injected to the grid by the CGP may be banked for a period of 12 months. Net exchange of power may be permitted i.e. import of power during CGP outage or high captive requirement may be adjusted against the exported power from the CGP.

(c) In place of the proposed ceiling price, a graded tariff may be fixed based on quantum of total energy injected to the grid by the CGP irrespective of the load factor.

(i) Up to 8 MU per Month – Rs. 3.00 per KWH (based on JSL's cost of generation).

(ii) 8 MU to 32 MU per Month – Rs. 3.40 per KWH (Mid point of I & III).

(iii) Beyond 32 MU per Month – Rs. 3.80 per KWH (based on 2/3rd of UI maximum rates).

(iv) As regards the infirm power i.e. the power supplied prior to commercial operation of the Unit of the generating station, the tariff may be fixed at Rs. 1.50 per KWH. (Based on JSL's variable cost of generation)

(d) In case the tariff / terms and conditions proposed by the Hon'ble Commission is not attractive to CGPs, they may be allowed to sell power else where through short term open access basis.

8.13 Mr. J. Padhi, Director (Operation) on behalf of OHPC submitted as under:

(a) Necessary provision may please be made by the Commission to prioritise the maximum utilization of available power from OHPC power stations even during the power surplus period, as it is the low cost power & more economical for the State Power Sector.

(b) While determining the price of surplus power of CGPs, interest of hydro power should not be sacrificed, inadvertent of power from CGPs shall be priced at par with hydel power and UI with ceiling rate proposed by the Commission shall be equally applied to supply of hydel power from OHPC.

8.14.0 Mr. S.S. Manurkar, E.D (Production) on behalf of NALCO submitted that NALCO has been injecting its surplus power to the State Grid since 1986 and the installed capacity of CGPs of NALCO will be 1200 MW by December 2008 and NALCO is expected to inject its surplus power to the tune of 150 MW thereafter to the State Grid, provided NALCO is offered a price of 180 paise/ kwh or above.

8.14.1 The salient points of NALCO's written submissions on Draft Consultative Paper are as under:

(a) If competitive bidding would form basis of price, there should not be any ceiling and the price could be determined by bids, without ceiling or floor.

(b) If it is considered necessary to regulate the prices a band should be fixed, with floor and ceiling, between which prices could be determined through bids. We propose the following bands for the purpose:-

Long Term

Firm	-	1.85 to 2.85
Non firm	-	1.80 to 2.10
Inadvertent	-	1.20 to 1.50

(c) The bands for short-term firm power could be considered at 70% of those recommended for long-term as above.

(d) In case of import of power from Grid by CGP for any technical/unforeseen situation, there should be a ceiling rate on price, which should not be more than the twice of export rate applicable to inadvertent injunction.

(e) The ceiling price of inadvertent injection of power from CGP is proposed at 50 paise per KWH based on average cost of State Hydro Power. It is stated that none of CGPs in Orissa is of Hydro Power based. Justification of taking average cost of State Hydro Power at 50 paise per KWH is not appropriate. Further, average cost of Thermal Power per KWH is much more than the 150 paise. It should, be at the levels suggested above.

(f) As per statistical information given in Para 4.1 of the Draft Consultative Paper, average PLF at national level for CGPs is 42.85. Hence, non-firm supply of surplus power through contract should be more than 400 units and less than 600 units per hour and firm power should be supply of 600 units or more surplus power per hour.

(g) The prices suggested above are exclusive of duties, taxes etc., if any.

8.15 Mr. H.P. Mohapatra, G.M (Captive Power Plant) on behalf of Ferro Alloys Corporation Ltd. (FACOR) submitted as under:

(a) FACOR is a power intensive industry and needs continuously uninterrupted power at right voltage for production of High Carbon Ferro Chrome, FACOR has planned to install a 45 MW Thermal Power Plant at Charge Chrome Plant. FACOR has planned to install another 45 MW Thermal Power Plant at Charge Chrome Plant, Randia, which is planned to be commissioned by 2011. Out of the above generation, FACOR has planned to consume around 70 MW for production of High Carbon and others. The surplus power of about 10-12 MW may be sold out to GRIDCO or any other consumer through open access.

(b) The existing CGPs of the State have been helping Orissa Grid injecting the surplus power since 1986 and they are committed to play a greater role to help Orissa again during the impending power deficit scenario in XI Plan period provided they get a fair and equitable deal in shape of pricing of surplus power of CGPs from the Hon'ble Commission based on the provision of the Act, National Electricity Policy and National Tariff Policy.

(c) The variable cost of coal-fired CGPs has gone-up since 20th December 2007 as Coal India Ltd. (CIL) effected 10% hike on Base Coal Price (BCP). The Commission should consider this also while determining pricing of surplus power of CGPs.

8.16.0 Mr. Chander Prakash and Mr. A.R. Agarwal on behalf of SMC Power Generation Ltd. submitted during the hearing that the Commission should consider for pricing of surplus generation of power in KVA which should include both the components of active and re-active power. They further submitted that the UI Tariff should not be considered as a bench-mark for deciding / determining the price of surplus power of the CGPs as it is meant primarily to have a discipline in the Grid. They submitted that if the Commission desires to rest on UI rate as bench-mark price then the entire UI Tariff not the truncated UI tariff as proposed in the Consultative Paper should be adopted. They supported the suggestions of CCPPO to form a Special Purpose Vehicle for inter-State trading of surplus power of CGPs of the State of Orissa with GRIDCO and distribute the margin amongst the equity participants which will usher a win-win scenario for both CGPs & GRIDCO.

8.16.1 The salient features of the written submission of SMC Power Generation Ltd. are as under:

(a) The Commission has fixed a ceiling of Rs.2.55 per Kwh of the Captive Generating Stations and has reduced rates for various eventualities of Captive Power Plants.

(b) The Captive Generators on account of distributed Captive Power Stations have the following benefits:-

(i) The Captive Power Stations by its nomenclature itself are Generating Stations at the Industrial belt of the State injecting power right at the door step of consumer.

(ii) The requirement of Transmission and Sub-Transmission from the Captive Generators are minimum because of the factor as explained in (i) above and thus results into considerable saving of the CAPEX.

(iii) This also results into the considerable saving of land bank and right of way required for Transmission lines/ Sub-Stations and generating Stations.

(iv) If we compare from the Grid Power Station, wherein, the state have to pay the Transmission Charges to the Central/ State Transmission utility, no such Wheeling Charges are envisaged as the Power is transferred in the industrial belt itself of the State.

(v) The benefit of the Power Station at the door step of the consumer also results into considerable reduction in the system loss. If we see the present statistics, it will be seen that around 3-4% of the losses are booked to the various states from Central Generating Stations and there are another 4-5% of the losses in the State Transmission Grid of the State. As such, we save around 9% in the form of the losses when the power is given at 132 KV or 33 KV line of the State Grid.

(vi) If we consider all the positive factors as explained above, the total saving to the State Grid is around 50 paise, even if we do not consider the effect of the additional CAPEX requirement for the additional Transmission lines.

(vii) The Orissa State has net surplus as far as power is concerned and sells considerable amount of energy to other states at rates in excess of Rs.6 per unit. As a matter of fact all the surplus generation from the Captive Power Plants will result into extra availability of power to Orissa State which may generate considerable revenue as they sell the energy at much higher rate as explained above.

(viii) The Commission may look into this aspect as well and may fix such rates which are beneficial to the Captive Power Generators and does not result in wind fall gains to the State Governments.

9.0 In response to the public notice, 23 numbers of submissions were received from the individuals/ institutions/ organizations by the date-line extended i.e by 22.11.2007. As mentioned in Para-8 above, 16 individuals / institutions / organizations participated in the proceeding held on 03.01.2008. The salient features of the submissions of 7 nos individuals / institutions / organizations who have filed their submissions before the Commission by 22.11.2007 but could not participate during hearing on 03.01.2008 are as under:

9.1 **M/s. Vedanta Aluminium Limited, Lanjigarh, Kalahandi**

The salient features of the written submission are as under:

(a) In response to Point No. 6 of Consultative Paper, it is suggested that as per the Open Access guidelines, the Commission should keep the option open to all CGPs to sell their surplus power to traders other than GRIDCO.

(b) In response to Point No. 9 on long-term firm power pricing of surplus power from CGPs, it is suggested as under:

(i) The firm power should be paid at UI rate with no maximum ceiling price and minimum ceiling price of Rs. 2.55 per kwh.

(ii) All the non-firm power should be paid through UI mechanism with a ceiling price of Rs. 2.55 per kwh.

(iii) All the inadvertent power should be priced through UI mechanism with a ceiling price of lowest variable cost of ER NTPC power.

(c) In response to Point No. 10 on short-term firm power pricing of surplus power from CGPs, it is suggested as under:

(i) All the firm power scheduled from CGP should be priced through UI mechanism with a ceiling price of Rs. 2.55 per kwh.

(ii) All non- firm power scheduled from CGP should be paid through UI mechanism with a ceiling price of Rs. 1.50 per kwh based on frequency of 50 Hz.

(iii) All the inadvertent power should be priced through UI mechanism with a ceiling price of lowest variable cost ER NTPC power.

9.2 **Bhushan Power & Steel Ltd. Nayapalli, Bhubaneswar**

In the submission filed by Bhushan Power & Steel, it is stated that referring to Table-5, Sl. No. 1 of the Consultative Paper the recording made in the remark column “Interested for sale of excess power to GRIDCO and to other industries of Orissa through Open Access” are objected. We are free to sell surplus power availing Open Access under the relevant provisions of Act 2003.

9.3 **Steel Authority of India Limited, Rourkela Steel Plant, Rourkela**

The salient features of written submission are as under:

(a) Captive Power Plant injection should not be priced through unscheduled injection (UI) mechanism as it is already inadvertent in nature. It should be priced on flat rate.

(b) We strongly object to the proposal of 'Pricing of Inadvertent Injection' at a flat rate of 50p/kwh priced through UI mechanism based on average cost of State Hydro Power Generation. Captive Power Plants of RSP being thermal in nature, it should be compensated for inadvertent injection at the rate of Rs. 1.80 per kwh which is based on the average cost of Central NTPC ER Power.

(c) In our view, only the Long Term and Short Term firm power shall be priced through UI mechanism.

9.4 **Karnataka Electricity Regulatory Commission (KERC):**

KERC submitted as under:

(i) Any supply less than 700 units per hour per MW under firm power contract could be treated as infirm power and accordingly infirm supply rates.

(ii) Short term supplies could be up to three years and long term supplies beyond three years.

(iii) Along with ceiling price there could also be a floor price linked to UI for infirm/firm supplies under short term.

9.5 **WESCO**

WESCO submitted as under:

(a) In case the CGP getting the permission for utilizing the natural resources like Coal etc., the cost of the generation will be reduced.

(b) As in the State of Orissa, some category of consumers are cross-subsidized by other category of consumers, the selling cost should be based on their generating cost with very low margin of profit.

(c) In case the CGP is synchronized at 33 KV, wheeling charges to the DISTCOM must be paid and the cost / unit and the transmission loss for wheeling is to be decided by Hon'ble Commission.

9.6 **NESCO**

NESCO submitted as under:

(a) It is suggested that only two categorization must be there – Firm Power and Inadvertent and accordingly the supply of 700 units or more per hour per MW from CGP through contract may be defined as Firm Power and below 700 units per hour per MW from CGP through contract may be defined as inadvertent power.

(b) That further the Firm power must be based on normative load factor of 70% and must inject power during peak load hours.

(c) That, in case the CGP is not able to supply the committed firm power for the agreement period, for that period, the power supplied should be categorized under inadvertent power. Therefore the tariff may deviate depending on the power supplied.

(d) That OPTCL/GRIDCO should not charge any transmission loss for those units injected by the CGPs.

(e) That OPTCL should have suitable mechanism to monitor the units injected by the CGPs along with the system for monitoring whether it will be treated as firm power or inadvertent power.

(f) That the average rate per unit purchase cost should remain at par with the rate of 2005-06 BST rate.

9.7 **Haryana Electricity Regulatory Commission (HERC)**

HERC submitted as under:

(a) Para 8 (a) - OERC may consider lowering the threshold from 1MW to say 0.5 MW if the economics of harnessing surplus power from large number of widely scattered CGP would permit.

(b) Para 8(b) - As stated on page no. 7 that average PLF based on CEA presentation is 42.8%, assuming normative load factor of 70% may be over-optimistic, a PLF of around 55 to 60% may be reckoned as normative load factor for the purpose of considering it as firm power.

(c) Para 8 (c) - The stipulation can be lowered to 40% instead of 50% load factor. Assuming non-firm power shall be priced lower than firm power, this would encourage the CGPs.

(d) Para 8 (d) - In case the injection is considered 'inadvertent' OERC may like to spell-out as to how it would be treated in terms of payment. As zero payment may not be advisable and hence reimbursement of fuel cost may be considered. However, the entire thing will get fine tuned of minimum capacity is lowered from 1 MW.

(e) Para 8 (e) - OERC may like to consider defining long term power with an eye on average time taken to set-up coal based CGP in their case (if the same is 2 years, it should be 2 years+). Short Term Firm Power – Okay.

(f) Para 8 (f) - Surplus generation may not be entirely governed by their industrial production. Normally industries have 100% back-up in terms of CGP. Thus, surplus capacity would be largely influenced by the supply (by Discoms) condition during normal conditions. Hence OERC may like to fine tune this observation.

(g) In stead of linking long-term firm power pricing to the central grid frequency of 49.7 Hz and corresponding UI rate of Rs. 2.55/unit which may not reflect a realistic pricing. Alternative, as envisaged under the Electricity Act, 2003 OERC may attempt structuring an intra-state power market including method of day ahead bidding, determination of price on the day of operation based on demand-supply position, how to address the imbalance if same offered capacity is not dispatched and financial settlement mechanism.

(h) Pricing through market mechanism, wherein minimum bid offered on a day ahead basis may be paid to all the bidders whether they are dispatched or not. Pricing based on UI may not be effective and carries the defects of average.

10.0 As per the directive of the Commission during hearing on dtd.03.01.2008 to furnish the views of the State Govt. on pricing of surplus power from Captive Generating Plants within a period of 15 days, the State Govt. vide affidavit dtd.25.01.2008 submitted as under:

10.1 That in order to meet the supply demand gap in future the surplus power of CPPs is to be availed by the State. The CPPs are also depending on the state for resources to establish and operate the CPPs. It is therefore necessary that the first right of refusal to avail the Surplus Power should be given to the State/ State Designated entity, i.e. GRIDCO.

10.2 That the proposed rate of Hon'ble Commission being almost at par with that offered by GRIDCO to CPPs, the State Govt. is agreeable to the rate to be fixed by the Hon'ble Commission.

11.0 As per the Direction of the Commission during hearing on dtd.03.01.2008, GRIDCO submitted its additional views through fax message on dtd.04.02.2008 on consultative paper on pricing of surplus power from CGP which are briefly stated as under:

11.1 Maximum energy availed from CGP is 806 MU during 2006-07 and hence availability of CGP surplus power is 92 MW.

11.2 Section (9) of the Electricity Act stipulates that supply of electricity from the Captive Generating Plant through the grid shall be regulated in the same manner as the generating station of a generating company. This doesn't mean that CGP is a generator. In such case, CGP would not have been dealt as a separate entity from a generator. If it is a generator, its tariff can also be determined by OERC. In fact, it is basically a load.

11.3 Section – 108 of Electricity Act, 2003 stipulates that the State Commission shall be guided by such directions in matters of policy involving public interest as the State Govt. may give to it in writing. From the year 2008-09 there will be shortage of power in the State and the surplus power of CPP is to be availed to meet the State requirement. The Govt. of Orissa is formulating CPP policy and Hon'ble Commission is to decide the price of CPP power. Hence, the CPP policy should emanate from the mandate of Govt. for public interest rather than consideration of CGP as a generator consequently tariff determined by OERC.

11.4.0 All the Industries need construction power and power for their processing plant till commissioning of their CPP.

11.4.1 Presently Orissa has reached a break neck situation with regard to demand and supply. As per Electric Power Supply projection by CEA, there would be shortage of peak power as well as energy from the year 2008-09 onwards. In order to meet the supply and demand gap the surplus power of CPP is to be availed by the State. Hence, the CPPs are to sell their surplus power to GRIDCO first. In case of refusal by GRIDCO, CPP may sell their power to other agencies / consumers either inside the state or outside the state.

11.4.2 GRIDCO/OSEB started purchasing CPP power @ 70 paise/kwh. Based on market condition, GRIDCO have increased the rate of CPP power and now the following graded rates are offered to CPPs for supply of firm power.

Up to 8 MU	Rs. 2.02/kwh
8 MU and above	Rs. 2.30/kwh
32 MU and above	Rs. 2.50/kwh

Commission's views/ decision:

12.0 We heard the Petitioner as well as the Respondents those who were present during hearing on dtd.03.01.2008. The written submission of seven nos. of individuals / institutions/ organizations who could not be present during hearing were also taken into record. The views of the State Govt. submitted on dtd. 25.01.2008 as well as the additional submission of GRIDCO on dtd.04.02.2008 were also considered and our views / decisions on the pricing of surplus power from CGPs are as under:

12.1 The National Tariff Policy (NTP) has been issued by the Ministry of Power, Government of India on 6th January, 2006 in compliance with Section - 3 of the Electricity Act, 2003 in continuation of the National Electricity Policy (NEP) notified on 12th February, 2005. These policy papers envisage that all future requirements of power should be procured competitively by distribution licensee baring certain exceptions as provided under para 5.1 of NTP. According to para 6.3 of the NTP, the Commissions are required to create an enabling environment which will encourage CGPs to be connected to the grid. *Such CPPs could inject surplus power into the grid subject to the same regulation as applicable to generating companies.* **Firm supplies may be procured from the captive plants by distribution licensees using the guidelines framed by the Central Government under section 63 of the Act.**

12.2 The prices should be differentiated for peak and off peak supply. It could be a two part tariff which includes variable cost of generation at actual levels and reasonable compensation for capacity charges. There is also an alternative to allow injection from CGP into the grid under ABT mechanism.

12.3 Besides above, the grid connected CGPs can supply to non captive users. They have right to open access to send power to their own plants besides availing facilities of inter-state open access.

12.4 This policy also differentiates between pricing of captive generation and pricing for non conventional source of energy generation including co-generation. Even for procurement by distribution licensees from the later source any future requirement have to be procured through competitive bidding process under Section-63 of the Act within suppliers offering energy from same type of non-conventional sources of energy.

12.5 The Central Commission has to lay down guidelines within three months for pricing of non firm power especially from non-conventional sources where the procedure of competitive bidding is not followed. It is understood that Central Commission so far has not finalized the guidelines for such procurement.

12.6 During the course of public hearing on the subject of pricing of surplus power from CGPs, participants in general were not in favour of linking the price to a frequency band. Their argument was that the ABT pricing is a mechanism devised for bringing in grid discipline and to a large extent intended penalizing the operators not following grid discipline. Such pricing philosophy should not be applied for power procurement. On the other hand, there are some participants who preferred pricing on the basis of peak and off peak supply. Particularly incentive for pricing at peak hour is considered helpful for bringing more generation from CGPs during the hours of large demand.

12.7 Introduction of UI mechanism formulated under ABT for CGP pricing employs the grid frequency as the indicator. Increase in supply or decrease in generation is achieved through financial incentives/disincentives. There is a wide fluctuation in the average UI rates in each month over the period of whole year. Obviously, it will introduce an element of uncertainty about volume & price of procurement if UI becomes the indicator of pricing. The CGPs are scattered through out the state. A good number of them have capacity of injecting very small quantity of energy and only a few larger ones can contribute substantially. This raises a question of uncertainty about the volume of energy that can be produced from these sources and non-predictability in the price structure that shall be entering into the power procurement and revenue requirement of the electrical utilities at the delivery end creating a mess for determination of consumer tariff. With better grid discipline, the UI rate and the revenue for the power plant could reduce in course of time putting a financial burden on the CGPs ultimately. Hence, adoption of the frequency linked rate as was suggested in the consultation paper floated by the Commission cannot be made applicable for the CGPs who do not qualify to be a category of firm supplier of electricity.

12.8 Similarly, there was objection to the concept of defining surplus power from CGP as ‘firm’ or ‘non-firm’ or ‘inadvertent’ for the purpose of pricing. As many of the CGPs operate at low load factor, fixing of a higher margin to qualify as a firm supplier of power was also not considered pragmatic.

12.9 TERI has floated a consultative paper on pricing of power from non-conventional sources in March, 2007. In the said paper they have considered the definition of "non firm power" and "firm power", available from very common literature that gives a generic description.

1(a) Non firm power - Power or Power producing capacity supplied or available under the commitment having limited or no assured availability.

1(b) Non-firm power – Electric power which is supplied by the power producer at the producer's option, where no firm guarantee is provided, and the power can be interrupted by the power producer at any time.

2. Firm Power – Power available, upon demand at all times (except for forced outages and scheduled maintenance) during the period covered by the purchase agreement from the customer's facilities that an expected or demonstrated reliability which is greater than or equal to the average reliability of the company's firm power sources.

12.10 Firm supply can be available due to inherent design margin of the plant or may be due to availability of additional capacity set up by the industries or due to less capacity utilization by the developers.

12.11 Otherwise surplus power available from the CGPs (according to the aforesaid generic definition) could ordinarily be qualifying as non firm power. Where some of the producers may be able to provide scheduled export for them the general pricing principle as applicable to any thermal power plant could be applied. It could cover the fixed cost and variable cost following the guidelines prescribed by the Central Electricity Regulatory Commission as provided under Section 61 and 62 of the Electricity Act, 2003.

Firm Power:

12.12 But it now follows from the NTP that surplus generation of CGPs has to be priced following the same regulation as applicable to generating companies. In determining the tariff, the Commission under Section 61 of the Act is to be guided by the NEP and the NTP. The only option available to the Commission is to direct the distribution companies/GRIDCO to procure power by following the process of competitive bidding under Section 63 of the Act. At the bidding stage, GRIDCO can ask for the captive generators to quote separately for peak and off peak prices as far as firm supplies are concerned.

The Commission directs that those captive generators who give a commitment for supply of power for a period of more than 3 months & upto 1 year shall be considered as supplier of firm power of electricity form their Captive Generating Plants.

12.13 In a scenario of competitive bidding, there is possibility of formation of a cartel of few large CGP owners artificially boosting the price of power. The impact of raising the cost of power purchase would be obviously felt at the consumer end. But the objective of the Act is to encourage competition which may lead to the growth of capacity addition and alternatively in reduction in price. That being, the objective, competitive bidding has to be enforced. But, at the same time the utility are at liberty of either accepting or refusing that power keeping in view the affordability of various consumer groups. In view of that, it may be appropriate to fix a margin at which the utilities shall be purchasing power which in any case should not be less than the cost of generation from these plants. If the bid is within a maximum of 10% of the cost of generation, it may be accepted for consumption by the state utilities. Prices higher than this if considered appropriate by the purchasing utility may be absorbed for the purpose of trading. Cost of generation can be certified by reputed firm of CAs as may be appointed & approved by the OERC. But subsisting contracts have to be dealt according to the terms of their agreements who are not covered under the ambits of this order.

12.14 What is important to note is that the CGPs who would be willing to participate in the bid and sale power to the utility have the advantage of saving in transmission loss as well as from the payment of the transmission charges. These added advantage may encourage CGPs to sell their power for consumption within the state. At 07-08 level, it may add to a benefit of around 34 to 35 p/unit on account of transmission charges and transmission loss due to wheeling.

12.15 The CGPs are, however, at liberty to sell their power or avail open access as envisaged in the Act. If the CGPs are given the facilities like land at concessional rate, water supply and other benefits by the state for setting up the industries and have entered into an agreement for sale of their surplus power to the state then the enforcements of the contractual provisions have to be addressed by the state accordingly.

Non-Firm Power:

12.16 Captive Generating Plants when they inject its surplus power which can be truly categorized as non firm due to uncertainty in the volume and time of supply needs a different treatment compared to the power for which a commitment could be reached between the generator and the procurer. Many of the CGPs who shall be supplying non-firm power will have a small exportable capacity for which they can not give a definite commitment or schedule of supply.

Those of the captive generators who are capable of giving day ahead schedule but are not in a position to give supply continuously for a period upto three months shall be treated as non-firm supplier of electricity. As an example, if a CGP is in a position to give its day ahead schedule for 21 days, 35 days, 40 days etc. during a period of three months shall be considered as non-firm supplier of electricity in a block period of 3 months.

12.17 TERI paper discusses at length about the pricing of non-firm power. If we consider marginal costing/avoided cost approach possibility this problem of pricing of non firm power from CGPs could be addressed. The short run marginal cost approach compares the variable cost of generating resources. On the other hand, in the avoided cost approach, power could be compared and priced equal to the power which the utility would otherwise not be required to purchase. Determination of variable cost of different sources of generation is not different and is being done as a part of annual tariff exercise. In the Orissa context, another important criteria is the availability of hydro potential that meets the demand of around 35% or more of the state's need. Some participants suggested that the kind of non- firm power intended to be imported to the system should not be priced at all rather they should be penalized for injecting such power to the system. As an example, during rainy season when hydro reservoir will be overflowing, the injection at that point of time may not be much use to the Orissa power sector.

12.18 In that context banking of power for supply during such contingencies or during off peak hour may not be commercially advantageous to the utilities if the industry owning CGP requires return of banked energy at peak hour. There was suggestion for net exchange of energy between the CGP owning industry and the utility supplying power. The utility purchase power by paying the cost of power purchase, pays for the cost of transmission and transmission loss also spends money for distribution and distribution loss. Obviously, the cost of supply of electricity by the utility may not be comparable to the cost at which a CGP is generating power. There shall always be mismatch between the CGPs' cost of generation Vrs the cost at which the utility would be selling power to the connected industry.

12.19 We have explained earlier, why the UI mechanism is not favoured for the purpose of this kind of non firm power. On these considerations neither banking of energy nor net exchange is considered as a feasible solution.

12.20 The whole objective of the Electricity Act, National Electricity Policy and National Tariff Policy is growth with competition. In fact, the National Electricity Policy/National tariff Policy stress that firm power pricing from CGPs shall be fixed on the basis of competitive bidding. Even renewable sources of energy, considered cost prohibitive at present, may have to be procured through the competitive route from the same category of non-conventional generation after there is adequate capacity development.

12.21 For finalization of fixing the price for power which are all non firm in nature, the concept is that it is entering to the system to be replaced by the hydro electric energy preserved in the reservoir as there is no scope to-day of considering replacement of thermal source of energy as the entire thermal source are being utilized by the state leaving no surplus. Hence, it will not be appropriate to consider pricing of CGP and other generation plants at the same footing and allow cost-plus pricing for the non firm power except following the concept of short run marginal cost pricing approach. Therefore, instead of comparing with the variable cost of thermal station, the pricing of such non firm power can be compared only to the energy cost of such state hydro power which is today of the order of 50 paise per KWH and subject to change from year to year.

12.22 However, the CGPs should not be injecting power at a frequency above 50.4 and OPTCL shall restrict injection by setting the over frequency relays accordingly.

12.23 The power exchange is going to be a reality in the Indian power scenario. Any generator with surplus power has liberty of selling power even for short duration. Therefore, the dividing line between short term and long term power should be narrowed down. Power that can be scheduled on day ahead basis can be absorbed in the system & can be programmed for scheduling by the utility.

12.24 Non-firm supplier of electricity have to declare at the beginning of the period of three months about the volume of energy that they would be supplying to the state grid. In case of failure to supply the declared volume, they may have to pay penalty at double the rate so that the supplier will be in a position to provide power to the consumers even by purchase of high cost power if need arises. This rate has to be decided through the process of competitive bidding. They shall have to go through the process of competitive bidding under Section 63 of the Act where the utility may accept this power paying upto a maximum of 75% of the lowest cost of firm power determined through bidding for 'firm supply' of electricity from the CGPs.

Inadvertent Power:

12.25 Other than the firm and non-firm power as stated above, any kind of injection by the Captive Generating Plants to the State Grid will be treated as purely inadvertent injection of power to the Grid. In other words power injected by the Captive Generators without giving day ahead schedule would be treated as inadvertent injection of power and would be priced equal to the pooled cost of hydro power of the State.

12.26 However, there shall be no payment for any kind of injection firm, non-firm or inadvertent at frequency of 50.4 HZ or more as a matter of grid discipline.

12.27 The CGPs are, however, at liberty to sell their power or avail Open Access as envisaged in the Act. If the CGPs are given the facilities like land at concessional rate, water supply and other benefits by the state for setting up the industries and have entered or will enter into an agreement for sale of their surplus power to the state, then the enforcements of the contractual provisions have to be addressed by the state. Once the pricing of the surplus power from the CGPs to be sold to GRIDCO which is a State Govt. designated agency is determined through transparent bidding process, this has to be placed before OERC for taking into account the same while determining the ARR for the relevant year/ years. There is no need or scope for approval for fixation of price by any other authority for supply of surplus power from CGPs to GRIDCO meant for supply to DISTCOs.

12.28 The Captive Generating Plants are free to sell their power through Open Access if they do not want to participate in a bidding process for determination of tariff for sale of power inside Orissa to GRIDCO.

While concluding, the Commission is of the opinion that the principles enunciated in this order would be reviewed as and when necessary based on the feedback from the different stakeholders and consistent with the latest legal provisions prevailing at that point of time.

(K.C. Badu)	**(S.K. Jena)**	**(B.K. Das)**
Member	**Member**	**Chairperson**

ANNEXURE - A

List of Persons / Organizations Respondent to Consultative Paper on Pricing of Surplus Power from Captive Generating Plants

1. Mr. Ramesh Ch. Satpathy, Secretary, National Institute of Indian Labour, Nayapalli, Bhubaneswar – 751012.
2. M/s. Vedanta Aluminium Limited, Langigarh, Kalahandi.
3. Mr. Sanjeev Das, Secretary, Confederation of Captive Power Plants, Orissa (CCPPO).
4. M/s. Nava Bharat Ventures Limited, Kharagprasad, Dhenkanal.
5. M/s. Jindal Stainless Limited, 50-HIG, BDA, Jayadev Vihar, Bhubaneswar.
6. Dr. K. K. Das, Advisor UPSC, Malaya Vihar, Bhubaneswar.
7. Mr. R. P. Mahapatra, Consultant (Power Sector).
8. Bhushan Power & Steel Ltd. Nayapalli, Bhubaneswar.
9. Orissa Power Transmission Corporation Limited, Janpath, Bhubaneswar.
10. Grid Corporation of Orissa Limited.
11. Orissa Hydro Power Corporation Limited.
12. Steel Authority of India Limited, Rourkela Steel Plant.
13. NALCO, Bhubaneswar.
14. Karnataka Electricity Regulatory Commission.
15. Ferro Alloys Corporation Ltd.
16. CII
17. WESCO
18. NESCO
19. Haryana Electricity Regulatory Commission
20. SOUTHCO
21. SMC Power Generation Limited
22. IDCOL Kalinga Iron Works Ltd.
23. CESU