## BEFORE THE ODISHA ELECTRICITY REGULATORY COMMISSION CHUNOKOLI, SAILASHREE VIHAR, BHUBANESWAR

CASE NO: FILING NO:

IN THE MATTER OF:

An application for Determination and approval for levy of Grid Support Charges (GSC) for industries having Captive Generating / Cogeneration Plants and running in parallel with

the Grid of Odisha Power Transmission Limited.

AND

IN THE MATTER OF:

Odisha Power Transmission Corporation Limited, Janpath,

Bhubaneswar-7510022

.....Applicant

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Confederation of Captive Power Plant, Odisha (CCPO), N-3-160. IRC Village, Nayapali, Bhubaneswar-751015, Odisha. Respondent

Odisha Power Transmission Corporation Limited (OPTCL), the humble applicant above named,

## MOST RESPECTFULLY SHEWETH THAT:

- That, Odisha Power Transmission Corporation Limited(OPTCL) is the State designated STU and the Transmission Licensee authorized for carrying out the activities of intrastate transmission and wheeling of Electricity within the state of Odisha u/s 39 of Electricity Act, 2003.
- OPTCL operates and maintains about 158 Sub- Stations and about 14,444/- Kms of EHT transmission lines at voltage levels of 132KV, 220 KV and 400 KV, which carry electricity from various Generators and IPPs situated within and outside the state of Odisha to load centers all across the state and also facilitates intra as well as Interstate Open access power transactions. OPTCL also observes all provisions of safety and other applicable standards as per OGC/IEGC in compliance of statutory provisions of Electricity Act 2003 and regulations made there under.
- 3. That ,there are 34 Nos of Bulk industrial Consumers having CGPs of their own to meet their power requirement but connected and running in parallel with the OPTCL Grid for the sake of safety, security, reliability and efficiency. Bulk Consumers with CGPs (herein after CGPs) also enjoy the discretion of export of energy to the state / other Consumers by open access after meeting their requirement for extra revenue earning and to their loads located at separate location(s) of the state. CGPs are exempted from paying Electricity Duty on import of energy as envisaged in the Indian Electricity Act 2003.

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- 4. That OPTCL has designed a robust Grid System with proper transmission planning for meeting the present peak load and also to cater future Load growth of the state and Industries with higher stability and reliability at a huge Capital Expenditure.
- 5. These industries with CGP are consumers of the Discoms and pay transmission charges to OPTCL only when they import or export power from or to the grid, which happens occasionally. Thus OPTCL though having provided the connectivity infrastructure in terms of substation bay and interconnecting line practically get very less revenue.
- 6. These CGPs because of their connectivity with the grid and assured of stable power supply any time they need, have the advantage of installing their CGPs whose capacity is almost equal to their load. This enables them to not only economizing their design capacity but giving them advantage of operating at near to full capacity with very high Plant load Factor (P.L.F)
- 7. That the Bulk consumers (With CGPs) also enjoy a lot of advantages being embedded with the State Grid at times of no generation / low generation and during fault conditions, when tripping of CGP generator is inevitable. They also enjoy the liberty of drawing energy from the Grid as and when required for continuity of production activities based on the contracted Demand with the concerned Discoms.
- 8. That the Grid Network provides the most reliable and operational flexibility to the CGPs as outage of any Transmission Line does not affect their production or generation. The robust Grid can take up any Load variation and disturbances mainly associated with starting of High Capacity HT Motors, Rolling mills etc. without appreciable voltage dip and fall of frequency.
- 9. While the CGPs have the discretion to operate in islanded mode, they have chosen connectivity with the STU for higher efficiency, higher PLF, less risk of outage, safety, security and reliability of supply without making any investment of their own. CGPs make substantial saving by avoiding frequent tripping and start-ups (cold/hot) while continuing with their production activity.
- 10. That while CGPs operate in parallel with the Grid and derive numerous benefits, they also inject harmful harmonics, sudden jerk and unbalanced current which stress and pollute the overall power quality and inflict detrimental effect on the safety and useful service life of the equipment of the state Grid.

11. All these benefits are extended to them without any mechanism for recovery of the cost towards polluting power quality and endangering/lowering the service life of equipment deployed by the State Grid for the very purpose.

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- 12. The specific benefits Bulk Consumers with CGPs (hereafter CGPs) derive for being embedded with the State Grid are summed up as below:
  - (i) The shocks due to fluctuating loads is absorbed by the utility Grid which relieves the CGP generators of undue stress so that the bulk consumers can run their generators at constant generation mode without bothering for the load cycles. This helps in optimum production and enhanced plant Load Factor (PLF).
  - (ii) Fluctuating loads like arc Furnaces and press mills etc. inject harmonics in the grid system when running in parallel. The harmonics not only pollute the power quality but also are harmful for the equipment of the utility Grid without any benefit.
  - (iii) It also affects the quality of power supply to neighboring consumers of the STU.

Unbalanced load of some of the Bulk Consumers generate negative phase-sequence current. The magnitude of negative phase sequence current is much higher at the PCC (Point of Common Coupling) than at the generator output terminal. When operated in isolated mode, harmonics cause overheating of generator terminals. By virtue of connectivity with the grid, Captive Generators are relieved of this harmful effect which also enhances the equipment life and reliability/profitability of CGP owners.

- (iv) Due to higher fault level of the grid, voltage drop at the load end is nominal and in any particular fault condition, the contribution of fault current by the Grid is higher than the fault current contributed by the CGPs as the Grid acts as an infinite Generator. Thus effect of fault current on the CPG equipment are minimal and risk of failure of CGP equipment are minimized/reduced.
- (v) Enhanced PLF of the Captive Generators ensures more revenue by way of sale of surplus power or low cost of production as the case may be.
- (vi) Voltage and frequency dip during starting of high capacity H.T motors are nominal as grid acts as an infinite bus.
- (vii) The impact of sudden load through-off and consequent tripping of generator on over speed is avoided if the CGP is connected to Grid. The shock is taken by the utility grid.

(viii) CGPs make substantial saving in terms of investment by installing low capacity equipment than would be required in case they decide to operate in isolated mode as higher capacity means high investment.



- (ix) Transient surges reduce the life of the equipment including that of the CGP generators. In few cases the high magnitude of the transient surge may lead to failure of equipment. CGPs connected with the utility grid are at low risk as the surge is absorbed by Grid.
- (x) Bulk Consumers get uninterrupted supply in case of tripping of their own generator(s) as instantly grid supply is extended by virtue of the connectivity with the Grid.
- 13. That, keeping in views of the above explanations, OPTCL is of the considered view that, CGPs should pay GSC (Grid Support Charges) to the transmission Licensee i.e OPTCL in lieu of the benefits derived by them from the grid. As these Bulk Consumers (CGPs) operate normally with Zero import / Limited Export mode, their contribution towards transmission charges are also bare minimal. Further, the free service extended to the CGPs hitherto is neither quantified nor factored in the ARR of OPTCL.
- 14. That the connectivity allowed to the CGPs does not in any way benefit the system/Grid except in rare instances when there is acute scarcity of power and the state is in dire need of power from internal sources. Government is empowered under Sec-11(of EA, 2003) to direct the CGPs to maximize their injection to state grid after their self-consumption. However, law also stipulates that the CGPs are also duly compensated by offering higher rate of power purchased from them during the scarce scenario.
- 15. That the above scenario is an unequitable and one-sided situation where the benefit is extended by the state Grid to CGPs without any scope/mechanism of being benefited/ compensated in return.
- 16. That, the concept of Grid Support Charge (GSC) otherwise called as POC (Parallel Operation Charges) in some states, is not a new concept and already in practice in several other states of India since the last decade.
- 17. That, is strongly felt by the OPTCL that, CGPs should pay Grid Support Charges (GSC) to the STU(OPTCL) for taking advantages of the Grid Connectivity which is erected, operated and maintained at a huge cost of Hundreds of Crores of rupees.

 That the revenue so earned will help in furthering the service of the STU and also provide for scarce equity.



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