From,
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Jaipur -302021
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To,
The Secretary,
Central Electricity Regulatory Commission,
3rd & 4th Floor, Chanderlok Building,
36, Janpath, New Delhi-110001 Tel: 23353503.

Dear sir,

The CERC has issued public notice vide no. L-1/236/2018/CERC dated 24.5.18 dated 14.12.18 inviting comments / suggestions on draft notification of CERC terms and conditions of tariff 2019 for the tariff period commencing from 1.4.19. I am submitting my comments / suggestions. I will not be participating in hearing.

2. Reg3(16)- Proposal virtually extends cut off date by 1 to3 quarters vis-a-vis existing provision. Cut off date is specified to provide for completion of balance works and effecting balance payments. One year is adequate period for the same. Any work not in progress at the time of COD is not essentially required for the power station and should be treated at par with new works. Three years may be replaced by two years.

3. Reg 3(48)- Operation and Maintenance Expenses (or O&M expenses) is defined to include the expenditure on manpower, maintenance and overheads. These are considered normative and are not subjected to truing up as savings are considered as due to management efficiency. However, Overheads on expenditure on man power includes terminal benefits for which provisions are to be made as per Accounting Standards 19 (for Employees benefit) and their disclosure is to be made in the balance sheet based on actuarial valuation. While truing up deficit, if any, in these provisions should be considered by the Commission as not meeting requirements of these is not the savings due to management efficiency. Any deficit is to be considered as carried over and to be met in next year. For Example , as per disclosure made at note 56 page 385 – 389 of NTPC's 42nd annual report of FY17-18 – employee benefit expenses (annexure -1) – against the obligation of Rs 8225.71 crores for Provident

fund, Rs.2586.49 for gratuity and pension, Rs. 1350.61 crores for post-retirement medical facility, fair value of plan assets for the same were respectively Rs. 8281 crores, R s1507.91 crores & Rs.1200.73 crores. Thus there was deficit / lesser provision of Rs.1173.10 crores which has already been paid through tariff. Regulations should provide that deficit in meeting O&M expenses as per actuarial valuation ,made in disclosures under Accounting Standards 19, will be met first and will not be considered towards expenses during subsequent years.

4 Reg 6- In case of failure of generating station to achieve commercial operations before the commercial operations date of transmission system (but not earlier than SCOD of generating station), Reg 6(a) rightly provides for a generating company to pay transmission charges (i.e. loss of fixed charges of transmission system which otherwise would have been suffered by the transmission company). However, in case of failure of transmission licensee to commission the transmission system before COD of generating unit / plant, as per reg 6(b), transmission licensee would pay only transmission charges. This does not effect full compensation to generating company. In such case transmission licensee should pay for fixed cost of generation as it is the loss suffered on account of non-completion of transmission system. Only where beneficiaries of generating company agree , this be transmission charges with difference between fixed cost of generation and transmission charges so paid , reckoned towards capital cost of the generating station.

5. Reg 13:- truing up should not be limited to capital expenditures only as provided in this clause but should be for the savings (not due to efficiency) in annual expenses in respect of the parameters specified at reg 70 and the following, benefits of following needs to be passed on fully to beneficiaries as these have accrued as a matter of course and not on account of better performance by the generating company.

(i) average rate of interest on debt (with floating rate of interest) vis a vis that considered in tariff determination when such change in rate of interest is not on account of restructuring / restructuring of loan.

(ii) difference between grossed up value as per average rate of income tax / MAT on assessed income vis – vis grossed up rate considered in tariff.. This adjustment to be considered on specified return on equity.

(iii) interest charges on working capital due to the following:-

(a) change in rate of interest

(b) stock of coal and oil below specified norms.

(c) Average monthly stock of maintenance spares being below specified value.

(d) advance amount for fuel, actually paid is less than 30 days.

6. Reg.14, 16 & 52:- The energy charges should include cost of limestone , lime and other specific reagents for emission control system (FGD) vide reg 50 and 59(iv) as their consumption will be dependent on kwh generation. Reg. 16 may provide for 3rd component of energy charges towards lime stone, lime and other reagent consumption wherever required. Formula of energy charges at reg 52(2)(a) may also incorporate it.

7. Reg 17(6)- There should be separate norms for determination of tariff for the generating stations having completed useful life. As at that stage, there is no likely hood of any outstanding loans so no requirement of interest charges on debt and depreciation, Risks in operation of power plant will be the minimum and as such ROE will also be required to be lower than that for a new generating station.

8. Reg. 23:- Any additional capital expenditure beyond cut off date or beyond original scope of works or deferred works as on COD of project, should be treated as new works and taking up of these works should be subject to recommendations of the consultants and in principle approval of the commission after hearing affected parties. Works deferred for execution as on COD of the project , irrespective of cut off date should be considered as new works as such works were not essentially required for the operation of the power plant.

9 Reg. 30(Return on Equity):- Solar and wind power plants have achieved grid parity and cost of their generation has gone below that of many thermal power stations. This has been reflected in lower scheduling of thermal power plant by the beneficiaries and consequential reduction of PLF of thermal plants. In last five years , solar +wind power plant capacity has risen from 31692 MW as on 30.3.14 (ref: MOP annual report FY14-15 page 213(vide annexure -2) to 70013 MW as on 30.9.18 (Ref:- CEA installed capacity report Nov. 18 (annexure -3)) against thermal capacity of 177742 MW (as on 30.11.14) and 222427 MW (as on 30.11.18) respectively as per these reports. In last four years solar power installed capacity has risen steeply from MW to 2630 to 22000 MW (excluding roof tops and solar pumps) and that of wind from 21000 to 34000 MW (MNRE -last 4 year achievement report(annexure -4)). Solar power is targeted to 175000 MW by 2022. If it materialize then during sunshine hours, thermal generation will be backed down to about 30% of the capacity. Karntaka , Tamilnadu, Rajasthan, Andhra Pradesh and Gujarat presentally have very high RE capacity to thermal generation capacity and this ratio is going to increase. Backing down of thermal power plant and surrender of their capacity may be much higher in these states.

state	RE capacity,MW	thermal capacity, MW	Ratio RE/Thermal

Karnataka	12911.73	9960.82	129.6%
Tamilnadu	11614.44	15086.07	77.0%
Rajasthan	7424.65	11763.16	63.1%
Andhra Pradesh	7229.48	14643.82	49.4%
Gujarat	7544	22168	34.0%

10. This backing down will not be only on account of their must -run status but due to economic considerations also also. In order that thermal plants can compete with economics of solar power plant, it is imperative that both fixed and variable costs of thermal power plants is reviewed critically and brought down. The major component of fixed cost is Return on equity. With solar power plants operating in competition with thermal power plant and that too at much lower return on equity, there is hardly any justification to keep ROE for thermal power plants at 15.5%. Reg. 16(2) of CERC (T&C of tariff determination from RE sources) reg 2017 specifies ROE as 14% for RE power plants. On the face of it, ROE of 15.5% as per proposed reg. 43 for thermal plants is high and it should be below 14.0%. The argument that risk of establishing thermal plat is high due to long gestation period, is unsustainable extra cost due to long gestation period is IDC and IEDC which is capitalized. Argument of thermal plants having operational risks is also not sustainable as solar generation dependent on nature is is unpredictable and generator bears the risk not only of variation in generation due to atmospheric and whether conditions, failure of inverter and module degradation but deviation charges due to forecasting errors.

11. ROE of 15.5% was specified for tariff period FY14-19 (vide Statement of reasons dated 24.4.14 issued by CERC It was having 7.50% risk premium above the Risk free rate as average of the yield on 10 year zero coupen bonds at 7.99% and it was also higher than PLR of 14.60% in FY12-13(vide para 24.11, 24.14 & 24.15 -annexure -5).. From 1.4.16, all banks in India are required to benchmark and price their loans to MCLR (Marginal Cost of Fund based Lending Rate) and presently SBI MCLR is ranging from 8.20% - 8.75% and base rate of 9.0%. In view of interest rates having come down, ROE needs to be lowered. Experience has indicated that such high margin is not required as risk is quite less for power sector. Future investment is not likely to be effected by lowering ROE as otherwise high cost of generation will lead to no taker of power generated. It will not affect existing investment except the share prices which is already high. Profit and loss account of 42nd Annual report of NTPC indicates profit of Rs. 10480.81 crores and Assets and liability statement indicates equity share capital of Rs.8245.46 crores and earning per equity share of Rs.10.00 is Rs. 12.11 (vide page 301-304- annexure -6). Thus return on equity i.e. 121.1% per annum. This is on account of the reserve built from high ROE, ploughed back to business.and even then

actual return on equity may be much higher than 15.5% provided by the Commission due to operation beter than norms. Thus there is a case of its reduction and ROE needs to be lowered to at least 14.0% for thermal power plants.

12. Not only ROE, even norms of working capital has been considered high. It is reported that at number of times in coal stocks have been below even a week's generation. Table - 1(page 127-128 of the explanatory memorandum indicate that for pit head stations also coal stock has been on an average 11.3 days and at non-pit head 16.5 days. On the face of such low stock to consider 15 days coal stock for pithead generating stations and 20 days for non pit head generating stations (vide reg 34(a)) coal stock for working capital is unduly high. Similarly 30 days advance payment for coal is new concept introduced without seeking comments. is to be considered only, if it has been actually made (vide reg 34(b). similarly, maintenance spares @20% vide reg 34(b) also needs to be reviewed as a sizable part of such spares are stocked for short period before the annual maintenance. Further, working capital requirement vary during the year due to reserves built up through various components of tariff recovered through monthly billing but discharged on quarterly or annual basis. e.g. interest on debt, depreciation and income tax is recovered monthly but interest payment, repayment of loan and advance payment of income tax is effected on quarterly basis. Thus during the intervening period, there is reserve requiring lesser / no working capital. Similarly, recovery of ROE is effected monthly while its liability is discharged (in the form of dividend) after the end of the year. Even entire ROE is not paid as dividend to share holders and central Govt. On this account working capital , other than receivable will be much less. Commission vide reg 34(2)&(3) has considered resetting / truing up of fuel prices and interest rate considered but along with that these coal stock, advance payment for fuel and cost maintenance spares need to be true upped.

13. Reg. 33(3) - Reduction in salvage value to 5%, does not have sound basis. Commission has considered it based on note 5 below Part C of Schedule-II of the Companies Act 2013. However, the part B of said schedule provides as under:-

> "4. The useful life or residual value of any specific asset, as notified for accounting purposes by a Regulatory Authority constituted under an Act of Parliament or by the Central Government shall be applied in calculating the depreciation to be provided for such asset irrespective of the requirements of this Schedule."

Thus, CERC's reg. will have overriding effect on useful life and salvage value of the assets. As such , reduction of salvage value based on provision in companies act is not appropriate. It should be based on data. With rising cost of metals, even the cost of steel (as

scrape) may yield more than 5% value after useful life of 25-40 years for power plants and transmission lines. Without detailed study, salvage value should not be lowered as it is going to raise depreciation by (95-90)/90% i.e. 5.56% for new projects. In case of existing projects (with less than 12 years of operation), it will be workout much higher.

14. On variable cost also, auxiliary consumption needs to be reviews to deal where requirement of auxiliary consumption may be met by using RE (say solar power).

15. Reg 35(3):- (i) Norms does not provide for O&M expenses for shunt reactors used in EHV system for compensation of line capacitance. A bay may / may not have shunt reactor. The O&M expenses of shunt reactor may be provided separately based on their voltage class and ratings and corresponding reduction in bay-wise or transformer-wise O&M may be effected.

(iii) Norms of O&M expenses of transmission lines , irrespective of voltage class of line, does not appear logical. O&M expenses of single circuit 765 kV line will obviously be higher than that of 400 kV line with same conductor size and number of conductor in a bundle and that of 400 kV line higher than 220 kV and so on. In consideration to this and CERC regulations serving as guidelines to SERC, Line voltage & bundle conductor configuration wise O&M expenses may kindly be specified.

16. Reg 45:- Input price of coal sourced from mine (or commonly known as transfer price), proposed to be determined as per this regulations, is on the lines of the that considered for cost of generation. This will not be proper as;-

(a) a substantial cost of mining is that of the box-cut, which is amortised for the life of mine as otherwise cost / ton of mining in first year will be exorbitant.

(b) in case of mining, cost of land is substantial compared to that of thermal power plant. Funding of this is also by equity and debt. On account of land being not depreciable but debt is to be repaid, this substantial land cost can lead to cash flow problems and a comfort has to be provided by extra cash flow (by way of higher depreciation rate or otherwise) so that specified debt service ratio is met during the period of repayment and this extra payment so made is recovered in later years.

© unlike thermal power plant, mining operation is outsourced. O&M expenses will not cover such outsourcing cost. Further, outsourcing cost is subject to GST.

(d) Mining machinery (specially excavators & dumpers) operates on diesel. Dewatering of mine (wherever required) may also require diesel set or stand by diesel

set and variation in diesel price has therefore to be factored in outsourcing as well as O&M costs.

(e) lignite has high volatile contents and as such its storage can not be for longer duration. lignite stock at mine has to be considered for shorter duration.

(f) depreciation rates may not cover all mining equipment (like excavators, dumpers etc and belt conveyers if used for transportation).

17. Reg 47:- Sampling procedure (for coal from each wagon / rack / truck/heap or for every hour from conveyer belt from mine etc.) and its testing by NABL accredited labs needs to be standardised and specified as part of regulations or procedures to be issued.

18. Reg.50: – Reagent consumption for FGD plant is dependent of SO2 generation (i.e on sulpher contents of the fuel, vide equation at page 262 of the explanatory memorandum) and NO2 generation (i.e. temperature of the boiler and air flow , which is dependent on fuel consumption). Normative consumption not linked to fuel consumption is not appropriate. These parameters needs to be specified and should be reviewed in mid term review.

19. Reg 51:- (i)Full annual fixed charges are payable up to normative plant availability factor for the year. From the formula given at reg 51(2), where PAFDp has been considered in numerator this condition will not be met.

(ii) Further for plant scheduled generation beyond Normative Plant load Factor, incentive will be payable (as per reg 51(3)).This incentive paid for a particular month due to better performance is to be adjusted against poor performance, if any during subsequent month or vice versa. This aspect is not mentioned, either incentive be specified to be payable on quarterly basis or specified to be payable @65p/kwh based on cumulative scheduled energy during the peak period up to the end of month in excess of normative quarterly plant load factor) less peak period incentive paid up to the previous month. Similar provision to be made for for the off-peak period incentive also. Appropriate formula may be specified.

(iii) 'notional gain' specified in first & second proviso below reg 51(5) is not explicitly clear. It would be appropriate to elaborate it by example or formula in regulations.

20. Reg 55 and 60(5) :-Reg. 60(5) specifies entitlement of hydro regeneration during peak hours of 75% of the energy supplied by beneficiary for pumping. Thus, 25% of energy loss is considered in pumping and regeneration of energy considering turbine efficiency and Auxiliary consumption. The pumped storage power plant are hydro power plant which can effect generation of design energy and can also effect pumping during the period of energy

surplus and regenerating it during other periods (not necessarily during peak load period). Thus generation from pumped storage plant will correspond to the design energy output + 75% of energy utilized for pumping. There can be contingency when energy is offered for pumped storage during the period when pumped storage plant was scheduled to generate. In that case, instead of pumping water, generation of pumped storage will be reduced (thereby energy is conserved in the upstream reservoir to be used for regeneration later). In that case, power offered for pumping will get interchanged at bus bar itself. There will be no loss of energy in pumping and in regeneration it will be small incremental loss (equal to auxiliary consumption) only. In that case applying a factor of 25% will not be appropriate. This reg. needs review.

21. Further, pumped storage depends upon availability of surplus energy which may and may not be available with all beneficiary in the ratio of allocated capacity. Provision of transfer of allocation will not be feasible for pumped storage as capacity will be utilized for scheduled generation as hydro station over-which pumped storage will be superimposed. Hydro generation has low Plant Load factor and as such generation capacity at hydro station is much more than load requirement (except during rainy season when it is fully utilized). In view of these, capacity charge for utilization of pumped storage need be based on that utilized for pumping period only and energy entitlement as 75% of energy utilized for pumping and 97.5% for balance energy made available when only generation was backeddown.

22. Further availability of generating units and actual generation for the purpose of capacity and energy charges of tariff should exclude period of pumped storage and its exclusive regeneration.

23. Reg 59:- In considerations to likely part loading of units with the increase in solar generation capacity, CEA's recommendations in respect of part load operation may be considered Norms to be checked with CEA recommendations.at para F (impact of part Load Operation on performance of thermal Generating station may be considered for the part load duration and average part load certified by RLDC with part loading considered equal to average partload and corrdection applied in proportion to duration of part load operation (in hours) /(Actual plant operation hours).

24. Reg. 59(iv);Lime stone consumption for lignite power plants is dependent on sulpher contents of fuel(vide equations at page 263 of explanatory memorandum) and as such its linkage with sulpher contents needs to be specified. Providing their charges without

considering % of sulpher content will be giving undue benefit to generating. company. In chemical reaction (2) equation t at page 263 of explanatory memorandum SO2 is missing and equation is not balanced)

25. Reg. 83:- BBMB is a power plant of the partner states (viz, Punjab, Haryana, Rajasthan and Himachal Pradesh) with dedicated transmission system. In view of this being captive power plant with dedicated transmission system, generation and transmission tariff should be left to be decided by its partner states and tariff should only be determined for non-beneficiaries.

Yours

Shanti Prasad ,
Ex-chairman / RERC.