5352/2018/CRU-CERC

(15)


# Office of The Superintending Engineer
## Special Power Agreement & Tariff Circle
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No. 517/SPATC Dated: 13-07-2018

**Sub:** **Comments on CERC Consultation paper for Genertion and Transmission Tariff for period 01-04-2019 to 31-03-2024.**

**Secretary,**
**Central Electricity Regulatory Commission,**
**3rd & 4th Floor, Chandralok Building,**
**36 Janpath, New Delhi-110001**

Dear Sir,

Kindly refer to your letter no-L-1/236/2018/CERC, dated 24-05-2018 where by comments on CERC Consultation paper for Generation and Transmission Tariff for period 01-04-2019 to 31-03-2024 were sought from various stake holders.

In this context kindly find enclosed herewith the preliminary comments of UPPCL for kind consideration and further necessary action.

Thanking you,

Chief (Fin)

JC (Fin) - RP

Yours faithfully

13/07/18

**( Deepak Raizada )**
**Superintending Engineer**

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**Superintending Engineer**

# Comments of UPPCL on CERC Consultation paper for Generation and Transmission Tariff for period 01.04.2019 to 31.03.2024

| S. Ref. | Section / | Changes Proposed/Discussed No. | Comments/Suggestion |
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| | **TARIFF DESIGN: Generation and Transmission** | | |
| | Thermal Generating Stations (7.2) | **Two part tariff to Three part tariff:** The recovery of fixed component could be linked to target availability, whereas variable component could be linked to the difference between availability and dispatch. Fuel charges could be linked with dispatch.<br><br>**Proposed components of tariff:**<br><br>Fixed Charge: Components of debt service obligations allowing depreciation for repayment, interest on loan and guaranteed return to the extent of risk free return and part of operation and maintenance expenses<br><br>• Variable Charge: Incremental return above guaranteed return and balance operation and maintenance expenses<br><br>* Energy Charges: fuel cost, transportation cost and taxes, duties of fuel | In the present scenario, most of the State Discoms are in power surplus scenario and are particular about their scheduling of power. The utilities are shying away from signing of additional Long Term PPA's due to the fact that this would subsequently increase the fixed cost component that they have to bear. The Discoms are liable to pay the fixed charges on normative availability basis even if power is not procured from the generating stations (when generator not get scheduled in MOD). Due to low demand, coal based power plants are running at a PLF of around 60% and the CEA forecasts the same to reach further lower levels of 56.50% by FY22 and many plants may get partial or no schedule of generation. It is proposed to split fixed cost into fixed charges and variable charges. However the Commission has not clarify regarding methodology of implementation for the split of O&M in to fixed and variable, without which it is difficult to comment. As regards guaranteed return to the extent of risk free return, it is required to know whether the Commission is going to fixed it on bank rate or G-Sec rate which changes through-out the year or fixed it for whole Financial Year based on last available bank rate or G-sec rate available during the issue of Tariff Order, need to be clarify.<br>However, keeping the incremental return above risk free return as part of variable charges would be |

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| | | | appropriate and result in substantial saving of fixed costs if no power is being scheduled. This proposed structure could encourage signing of long term PPA's by the state owned power distribution companies which will come as a relief to the units which have been unable to complete their project or remain idle due to lack of long term PPA's will get a boost. Therefore, a three part structure would provide a more representative approach towards the power purchase procurement and related cost. |
| | Thermal generatin g Stations-Old er than 25 Years -(7.3) | Separate Policy/ Regulatory oversight proposed for plants with more than 25 years age<br>Possible options being:<br>l}replacement of inefficient sub critical units by super critical units,<br>ii)phasing out of old plants,<br>iii)renovationof old plants or extension of useful life etc. | Decisions regarding replacement with super critical units, phasing out or extension of useful life of old stations that have crossed the age of 2 5 years should be taken on case-to-case, based on Residual Life Assessment and cost benefit analysis study. Further, adequate opportunity of representation to all beneficiaries may also be provided. Beneficiaries, who do not want to extend the PPA should be entitled to relinquish their shares |
| | Hydro generatin g Stations-(7.4) | **Proposed components of tariff:**<br>• **Fixed Charge:** Components of debt service obligations, interest on loan and guaranteed return to the extent of risk free return<br>**Variable** Charge: Incremental return above guaranteed return, operation and maintenance expenses and interest on working capital | In existing two part tariff structure of hydro generating station, it is difficult to get dispatched due to resultant higher energy charges. The proposed methodology for determination of fixed and variable charges may dispatch the costly hydro stations and increased the cost burden of Discoms by increasing their share of fixed cost.<br>It is suggested that instead of reduction of variable cost which ensure dispatch under MOD, ways and means of reduction in hydro tariff like longer loan |

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| | | | duration, lower free energy during the loan repayment period etc. may be explored. |
| | ISTS-(7.5] | Two-part tariff structure proposed for Transmission, wherein the first part can be linked with the access service and second part can be linked with the transmission service<br>It defines transmission access as right to access the transmission system and the transmission service as the right to transfer the electricity through the transmission system<br><br>The recovery of fixed component can be linked to the extent of access (Transmission Access Charge) and variable component can be linked to the extent of use, to be recovered in proportion to the power flow (Transmission Service Charge). | It is to be noted that power purchase cost of a Utility includes the fixed charges (or the capacity charges) paid to power generators as well as fixed charges paid to the transmission utility. These charges are paid by the procurer irrespective of any energy procured or wheeled. Hence, the Two-part tariff structure [illegible] based on access service and variable component based on transmission service (energy wheeled) is a welcome step as through this structure if Discoms [illegible] decrease.<br><br>It is proposed to split fixed cost into fixed charges and variable charges. However, the Commission has not clarify regarding methodology of implementation for the split of O&M in to fixed and variable, without [illegible]<br>As regards guaranteed return to the extent of risk free return, whether the Commission is going to fixed it on bank rate or G-Sec rate which changes throughout the year or fixed it for whole Financial Year based on last available bank rate or G-sec rate available during the issue of Tariff Order, need to be clarified. |
| | Renewable Energy -(7.6) and (34} | Two-part tariff structure proposed for RE Generation,<br>**Proposed Components**<br>**Fixed Component** (debt service obligations and depreciation) and | In the present scenario, renewable energy [illegible] whenever the station is generating power, it is being purchased by the utility. As such, introducing two-part tariff for renewable generation may not have any impact at present. However, with increasing penetration of wind and solar power and higher |

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| | | **Variable Component** (equal to marginal cost i.e. O&M expenses and RoE)<br>Fixed component as feed-in-tariff (FIT) and Variable component equal to capacity augmentation such as storage or back up supply tariff.<br>7.6.4 In case of integration of the renewable generation with the coal/ lignite based thermal power plant, the following may be the alternatives.<br>The renewable generation may be supplied through the existing tariff for the contracted capacity of thermal power plant under PPA. In this alternative, the tariff of renewable generation may replace the energy charges;<br>Tariff of renewable generation maybe combined with the fixed and variable components of the thermal generation to the extent of contracted capacity under PPA. The operational norms of conventional plants may require revision such as higher target availability for recovery of fixed charges, higher plant load factor for recovery of incentive;<br>The tariff for supply of power from renewable generation and thermal power generation may be recovered separately. The operational norms for | share of RE, it may be decided to do away with must run status for renewable energy stations and include them in the merit order while subjecting them to stringent forecasting and scheduling regulations, then two part tariff may be considered. In case of integration of the renewable generation with the coal/lignite based thermal power plant, the tariff for supply of power from renewable generation and thermal power generation may be recovered separately and the operational norms for recovery of tariff be specified separately. • Separate tariff for renewable and coal will ensure thatany inefficiency, be it in coal plant or in RE generation is not passed on to beneficiaries. Further, the Commission should also consider the implementation issues as scheduling of thermal power is firm and RE power is infirm.<br>• It is also suggested that in present scenario bundling is not required as intent of bundling was to schedule the costly RE power but presently RE is competitive to thermal. |

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| | | recovery of tariff may have to be specified separately." | |
| **2.** | **Deviation from Norms** | | |
| | Deviation from Norms-(8.4] | • For various reasons, out of tied up capacity by the distribution licensee, some of the capacity often remains un-dispatched over large part of the year. Since the tariff determined by the Commission acts as ceiling, there is no embargo on the generating stations or the transmission licensee to charge lower tariff. This provides a scope for creating some competition.<br>* Possible option could be to develop for incentive and disincentive mechanism for different levels of dispatch and specifying the target dispatch expanding the scope of Regulation 48 above. | The generators may be allowed to give discount in AFC on annual basis which can adjusted in energy rate while scheduling dispatch as per MOD. This will help generating companies with higher variable cost in getting schedule. |
| **3.** | **Components of Tariff** | | |
| | Compone ntsof Tariff-(9.3] | Whether the annual fixed charges and energy charges are to be determined to the extent of the capacity tied up under Section 62 of the Act or for the entire capacity. | We understand that the Commission suggested to determine the energy charges to the extent of the capacity tied up, while AFC can be determine for the entire capacity or tied-up capacity. If energy charges determined for the entire capacity, it will be difficult to the generator to arrange cheaper coal through FSA for entire capacity and blending of coal makes the prorated energy charges higher. |
| **4.** | **Optimum Utilization of Capacity** | | |

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| | Coal based thermal generation-(10.3) | Flexibility to Distribution Company and Generating Companies to decide the Annual Contracted Capacity [ACC] out of the total Contracted Capacity [CC). The difference between CC and ACC may be treated as Unutilized Capacity (UC) for the year. The distribution licensee will have a right to recall Unutilized Capacity during next year and for securing such rights, some part of fixed cost, say 10-20% or to the extent of debt service obligations, may be paid; Such unutilized Capacity may be aggregated and bidded out to discover the market price of surplus capacity. The surplus capacity may be reallocated to the distribution licensee at market discovered price. | This is a welcome step and is the need of the hour. It will reduce the burden of fixed cost for the Discoms and eventually to the consumers. Flexibility to Distribution Company and Generating Companies to decide the Contracted Capacity (CC) out of the total Contracted Capacity [CC] shall be allowed for every month. The uncontracted capacity may then be freed up for short term and medium term open access. Appropriate mechanism for sharing of the Fixed Cost shall be required, so that both generator and the procurer can benefit out of the arrangement. |
| | Hydro Generation-Cl0.5) | Extend the useful life of the Hydro project up to 50 years from existing 35 years and the loan repayment period up to 18-20 years from existing 10-12 years for moderating upfront loading of the tariff. Assign responsibility of operation of the hydro power stations and pumped mode operations at regional level with the primary objective for balancing. | • We welcome the option proposed for moderating the upfront loading of tariff by extending the useful life of the Hydro project up to 50 years and the loan repayment period up to 18-20 years. Further, it is suggested to reduce free power component of State in initial year to ensure that loan is serviced. Use of Hydro power with the primary objective for balancing is a welcome step but the Commission has not clarify regarding methodology of implementation for the same, without which it is difficult to comment. |
| | Gas based Thermal | Scheduling and dispatch of gas based generating station may be shifted to | All the gas based generating station capacities may be pooled at regional level. After meeting the requirement of designated beneficiaries, the balance |

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| | Generation-(10.7) | regional level with the primary objective of balancing. After meeting the requirement of designated beneficiaries, the regional level system operator can use it for balancing power at the rate specified by the generating companies. • Alternate, all the gas based generating station capacities may be pooled at regional level. After meeting the requirement of designated beneficiaries, the balance generation may be offered for balancing purpose as and when required. | generation may be offered for balancing purpose as and when required.<br>Use of gas based generating station capacities with the primary objective for balancing is a welcome step but the Commission has not clarified regarding methodology of implementation for the same, without which it is difficult to comment. |
| 5 | **Capital Cost** | | |
| | Capital Cost-(11.8-11.10) | One of the options is to move away from investment approval as reference cost and shift to benchmark/reference cost for prudence check of capital cost. However, the challenge is absence of credible benchmarking of technology and capital cost. • In new projects, the fixed rate of return may be restricted to the base corresponding to the normative equity as envisaged in the investment approval or on benchmark cost. The return on additional equity may be restricted to the extent of weighted average of interest rate of loan portfolio or rate of risk free return. | The existing scheme of Tariff determination on the basis of investment approval needs to be replaced as it has resulted into undue financial burden on the consumers of the beneficiary States.<br>• Considering the audited balance sheet of the developers as the basis for determination of capital cost, is also required to be reviewed since, the auditor does not go into the details of the expenditure incurred viz. its reasonableness, its justification and technical necessity.<br>Having benchmarks would provide an assurance to the end consumers that the impact of any unjustified capital expenditure is not passed onto them. The benchmark capital cost for the coal based thermal generating stations and transmission projects based on the technology shall be allowed.<br>• The Commission may annually review the benchmark capital cost norms. It should publish |

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| | | • Further, incentive for early completion and disincentive for slippage from scheduled commissioning can also be introduced. | detailed rules/regulations on how and on what basis the actual capital costs may be allowed to exceed the projected capital cost. Such rules will help improve the certainty for investors.<br>The capital cost of the project should be fixed based on benchmarks of the capital cost fixed by CERC or actual cost as on COD whichever is lower as on COD of the project.<br>If capital cost increased from investment approval, beneficiaries may be provided with the exit option. It is welcome suggestion to restrict the fixed rate of return on equity to normative equity on benchmark cost. The return on additional equity should be based on risk free rate of return on Government Securities (G-Sec) or RBI bank rate.<br>Incentive for early commissioning is already there therefore disincentive for slippage from scheduled commissioning of plant should also be allowed. |
| 6 | **Renovation & Modernization** | | |
| | Renovation& Modernisation-[12.7] | The R&M of transmission system could include Residual Life Assessment of Sub-Station and Transmission Lines, Upgradation of sub-station and transmission line, System Improvement Scheme (SIS) and replacement of equipment. The Commission may allow Renovation & Modernization (R&M) for the purpose of extension of life beyond the useful life of transmission assets. Alternatively, the Commission may allow special allowance for R&M of | In case of Renovation & Modernization (R&M) after Residual Life Assessment study and cost benefit analysis, the Commission should allow a separate allowance for Renovation & Modernization (R&M) for extension of asset life and should monitor actual expenses incurred very closely and the Transmission availability factor after these expenses. * The Commission may check that licensee should not get compensation and special allowance for the same assets. Further, the Commission need to relook in to compensation allowance to check if . licensees are not making undue profits out of it. |

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| | | transmission assets. Such provision will enable the transmission companies to meet the required expenses including R&M on completion of 25/35 years of useful life of sub-station/transmission line without any need for seeking resetting of capital base | |
| 7 | Financial Parameters | | |
| | Financial Paramete rs [13.2) | While continuing with the hybrid approach, more weightage may be provided for normative parameters to induce greater efficiency during operation as well as in development phase | Interest rate on debt shall also be fixed on MCLR with some margin as passing of actual interest on , debt does not motivate the developers to reduce it. The Commission should move away the hybrid approach and completely adopt the normative parameters which will definitely induce greater efficiency. |
| 8 | Depreciation | | |
| | Depreciat ion [14.6) | Increase the life of well-maintained plants for the purpose of determination of depreciation for tariffs<br>Extend useful life of the transmission and hydro assets to 50 years and thermal assets to 35 years Reassess life at the start of every control period / every additional expenditure through a provision in the same way as is prescribed under Ind AS and corresponding treatment to depreciation. Consider additional expenditure | • Increase the life of well-maintained plants for the purpose of determination of depreciation for tariffs may require huge exercise of Residual Life Assessment study & cost benefit analysis, discourage maintenance of plant as increase in life of plant may lead to lower tariff due to lower depreciation. Further, the plants which will impacted by lower depreciation, will not be able to depreciate assets fully due to PPA tenure.<br>Extension of useful life of the transmission and hydro assets to 50 years and thermal assets to 35 years, respectively shall decrease the depreciation. It is preferred to continue with the present approach of weighted average useful life for multi-unit plant. |

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| | | during the end of life with or without reassessment of useful life. Admissibility of additional expenditure after renovation and modernization (or special allowance) to be restricted to limited items/equipment; Continue the present approach of weighted average useful life for multi-unit plant<br>Reduced rates which will act as a ceiling. Continue with the existing policy of charging depreciation. | • Reduced rates which will act as a ceiling is welcome. Further,<br>• Developer may be allowed to opt for lower depreciation rate subject to ceiling limit |
| 9 | GFA Approach | | |
| | GFA~ (15.3) | Proposed to base the returns on the modified gross fixed assets arrived at by reducing the balance depreciation after repayment of loan in respect of original project cost, instead of current approach of allowing return on Gross Fixed Assets. | Proposal of using modified gross fixed assets in which equity will reduce after loan repayment and reduce the annual fixed charges of generating stations and transmission licensees is a welcome move.<br>As per existing regulation generator or Transco after repaying 70% debt may use equity which is freed through depreciation beyond 70% to create further new assets, which lead to double accounting of equity. Therefore, using modified gross fixed assets shall check on such duplications, |
| 10 | Debt :Equity Ratio | | |
| | Debt/Equity ratio for new plants | • Modjfy debt equity ratio to 80;20 for new projects | The Commission need to examine normative debt-equity ratio of 70:30 and 80:20 keeping in mind the State generators and transmission licensees which are not able to raise loan easily. Further increasing |

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| | (16.4) | | the debt component may increase the lenders and generators risk due to higher component of debt, which may hurt the future investments in the sector. Further, the existing CERC regulation already allow less than 30% equity infusion. |
| 11 | Return on Investment | | |
| | Return on Investme nt-(17.4) | Continuation of fixed rate approach or alternative | • Fixed rate of return on equity is as an acceptable approach and has been followed by most of the State Electricity Regulatory Commissions. It's tried and tested method and is hence, easily understood by all stakeholders. Therefore, it is proposed to continue with the fixed rate approach (RoE Approach) with modified GFA. |
| 12 | Rate of Return on Equity (ROE) | | |
| | ROE<br>(18.7) | • Review the rate of return on equity considering the present market expectations and risk perception of power sector for new projects; Have different rates of return for generation and transmission sector and within the generation and transmission segment, have different rates of return for existing and new projects;<br>Have different rates of return for thermal and hydro projects with additional incentives to storage based hydro generating projects; In respect of Hydro sector, as it experiences geological surprises leading to delays, the rate of return | • Rate of return on equity should be reduced. Review of the rate of return on equity considering the present market expectations and risk perception of power sector for new projects is required. Further, reduction in RoE is also required as risk free return (G-Sec) came down.<br>The Commission should consider different RoE levels based on the risks involved in the project. It is pertinent to mention that projects through competitive bidding carry a higher risk as compared to projects through cost + basis. In case of generation, different sources have different risk factor. For e.g. developing a hydro plant involves more risk factors than having a thermal plant.<br>• There shall be different rates of return for thermal and hydro projects with additional incentives to storage based hydro generating projects; |

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| | | can be bifurcated into two parts. The first component can be assured whereas the second component is linked to timely completion of the project;<br>Continue with pre-tax return on equity or switch to post tax Return on equity;<br>Have differential additional return on equity for different unit size for generating station, different line length in case of the transmission system and different size of substation;<br>Reduction of return on equity in case of delay of the project; | It is preferred to continue with the pre-tax return on equity.<br>Rate of return may be linked with timely completion of project. Incase of delay, ROE should be reduced. |
| 13 | Cost of Debt | | |
| | Cost of Debt (19.4-19.5) | Continue with existing approach of weighted average cost of debt<br>Link it with more reflective MCLR, G-sec or RBI repo rate with frequency for re-setting<br>Incentivize lowering of cost of debt through restructuring and refinancing | In existing regulatory framework weighted average interest rate calculated on the basis of actual loan portfolio of the utility. This approach does not motivate the Generating or Transmission Company to reduce the cost of debt by arranging it through the alternate funds.<br>It is required to link the cost of debt with more reflective MCLR, G-sec or RBI repo rate with annual frequency for re-setting.<br>The Commission should also direct the Generation/ Transmission Company to submit steps taken by it to refinance its debt at lower cost and benefit achieved shall be shared with the beneficiaries. |
| 14 | IOWC | | |

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| | Interest onWC (20.3) | A fresh benchmark for stock of fuel may be developed or actual to be considered for computing Working Capital<br>As maintenance spares are considered part of maintenance expenses as well, a view needs to be taken about the % of maintenance spares that needs to be considered for computing working capital<br>In view of higher penetration of renewable, low demand and consequent low PLF for power plants, target availability for the purpose of computing working capital needs to be reviewed. | It has been observed that the generators are not maintaining desired stock of fuel as per existing regulation. Considering the actual stock of fuel afresh benchmarking study is required to revise the same, The Commission should examine the actual inventory and afresh benchmarking shall be determined. Further, the Commission shall also check that there is no duplication of spares in the inventory with initial spares (which are already included in capital cost).<br>Rate of Interest for working capital should be linked to the prevalent market parameter of MCLR with certain margin. Presently margin is 350 basis points, which need to be reduced. |
| 15 | O&M expenses | | |
| | O&M expenses [21.7] | * Review the escalation factor for determining O&M cost based on WPI & CPI indexation as they do not capture unexpected expenditure; Address the impact of installation of pollution control system and mandatory use of treated sewage water by thermal plant on O&M cost. Review of O&M cost based on the percentage of Capital Expenditure (CC] for new hydro projects; Review of O&M expenses of plants being operated continuously at low level (e.g. gas, Naptha and R-LNG based plants]. | The Commission need to analyse the actual O&M expenses and align it with the State utilities O&M expenses which are on lower side. Further, the Commission has to consider the use of automation and IT which may lead to efficiency gain in O&M. • Impact of installation of pollution control system and mandatory use of treated sewage water by thermal plant shall be passed through O&M cost under special allowance.<br>The gas based thermal generating stations offer greater capability of ramping up and ramping down. Thus, gas based generating station can provide alternative source for balancing power to address the intermittency of renewable generation. Therefore, Review of O&M expenses of gas plants |

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| | | • Rationalization of O&M expenses in case of the addition of components like the bays or transformer or transmission lines of transmission system and review of the multiplying factor in case of addition of units in existing stations;<br>• Have separate norms for O&M expenses on the basis of vintage of generating station and the transmission system.<br>• Treatment of income from other business (e.g. telecom business) while arriving at the O&M cost. | need to be address considering it as balancing power.<br>Rationalization and review of the multiplying factor in case of addition of bays/transformer/lines in existing stations (on the basis of MVA capacity instead of individual components else some weightage may be accorded to different components) The Commission need to relook in to compensation allowance to check if licensees are not making undue profits out of it.<br>Income from other business (e.g. telecom business) may be shared with the end consumer while arriving at the O&M cost. Most of the State Electricity Regulatory Commission have notified the regulation for sharing of the Income from Other Business. A similar approach may be considered by the Commission. |
| **16** | **Fuel** | | |
| | GCV-(22.8 } and (26.3.18) | Specify normative GCV loss between "As Billed" and "As Received" at the generating station end and identify losses to be booked to coal Supplier and Railways<br>Specify normative GCV loss between " As Received" and " As Fired" in the generating stations Standardize GCV computation method on" As Received" and " Air-Dry" basis for procurement of coal both from domestic as well as international suppliers | Currently, suppliers and transporters have no risk associated linked to coal delivery. Having a normative GCV loss between "As Billed" and "As Received" is a welcome option. It would ensure the efficiency and risk allocation among all players of the value chain including mines and modes of transportation. It would also ensure that any unjustified expenses are not passed on to the Generator and then end consumers. While deciding normative losses between "As Received" and "As Fired", seasonal variation and methodology for determination of GCV becomes important parameters. It's very difficult to comment anything in absence of sample actual losses data |

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| | | | between "As Received" and "As Fired", While deciding normative parameters the Commission shall check that generator will not make profit out of it. Standardize GCV computation method on "As Received" and "Air-Dry" basis for procurement of coal both from domestic as well as international suppliers is welcome move. |
| | Blending of Imported Coal- (23.6} | Given fuel shortage, normative blending ratio may be specified for existing and new plants separately in consultation with the beneficiaries. | • Normative blending ratio may be specified for existing and new plants separately in consultation with the beneficiaries. Further, the generator should declare blending ratio to the beneficiaries in advance.<br>The Commission may specify normative upper ceiling for blending in consultation with the beneficiaries. Further there should also be some normative losses allowed between "As Received" and "As Fired" in the generating stations for blended imported coal. |
| | Landed Cost- (24.5] | • All cost components of the landed fuel cost may be allowed as part of tariff, else, specify the list of standard cost components<br>• The source of coal, distance (rail and road transportation) and quality of coal may be fixed for a minimum period, so that the distribution company will have reasonable predictability over variation of the energy charges | Standard cost components of the landed fuel may be allowed as part of energy charges which should be act as upper ceiling. Further, generators shall provide break-up of the landed fuel cost in the invoice raised to Discoms in a specified format. • Currently, while deciding the Merit Order Despatch, data related to energy charges with the beneficiaries are two - three months old. Generators should declare their energy charge based on the fuel which is going to be used, while declaring the plant availability for the next day. This canbe used for preparation of Merit Order Depatch. A cap ofupto +/-1% variation may be allowed in actual energy |

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| | | | charge vis-a-vis declared energy charge. |
| | Alternate Source-(25.2) | Stipulate procedure for sourcing fuel from alternate sources including ceiling rate Rationalize formulation in view of the change in energy rates and coal costs | • The Commission shall stipulate procedure for sourcing fuel from alternate sources including ceiling rate in consultation with the beneficiaries. Beneficiaries may be provided exit option in case FSA is violated. |
| 17 | **Operational Norms** | | |
| | **Thermal Generation (Coal based)** | | |
| | Station Heat Rate-(26. 3.6) | • Approach for determination of station heat rate may need review including the criteria for specifying heat rate of old plants, continuation of relaxed norms for specific stations and possible changes required in the existing norms given in Tariff Regulation 2014-19. | Different station heat rate norms for old and new plants considering scope for efficiency improvement should only be done if compensation allowance get scrapped. |
| | Specific Secondary Fuel Oil consumption-(26.3.7) | • The Norms for consumption of secondary fuel oil on account of nature of operations. | Norms for consumption of secondary fuel oil may be define considering plant having normal operations and plants having supply & operations at lower PLF up to technical minimum. |
| | Auxiliary Energy Consumption-(26.3.10) | Methodology of declaring availability after reduction of normative auxiliary consumption and colony consumption need elaboration. | The auxiliary consumption should not include colony power consumption and construction power consumption as these consumptions are not directly linked to the plant operations. But Generating companies should be made to declare the actual auxiliary consumption and housing colony consumption to have a regular check on the plant |

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| | | | availability. Further, there should be benefit sharing mechanism with beneficiaries, if generator is able to achieve lower auxiliary consumption. |
| | Normative Annual Plant Availability- (26.3.15) | • The existing norms of annual plant availabilitv mav need review bv considering fuel availability, procurement of coal from alternative source, other than designated fuel supply agreement, shifting of fixed cost recovery from annual cumulative availability basis to a lower periodicity, such as monthly or quarterly or half yearly. | • As per present regulatory framework, the recovery of [illegible] availability during the year. In existing mechanism if any Generators declare lower availability during the peak demand season, while during low demand season, the generating station declares higher availability so as to achieve the cumulative targeted availability on annual basis to recover the full annual fixed charges. In this process, the beneficiaries may not get the electricity when required at the time of high demand. It would be more rationale if generators have to achieve quarterly target availability.<br>If generator achieve PLF more than targeted PLF, it gets incentive for additional generation. At the same time, in case of PLF lower than the target PLF, the operating norms of the plants gets relaxed. Thus, beneficiaries have to bear additional cost in both the cases. The Commission may relook into this approach and consider scrapping increase cost either on PLF higher than normative PLF or PLF lower than normative PLF. |
| | **Transmission System** | | |
| | Transmission Availability Factor- (26.5.5) | Existing approach for computation of Transmission system availability and weightage factors to be applied for outage hours for transformer and reactors: | • Existing approach for computation of Transmission system availability and weightage factors to be applied for outage hours for transformer and reactors is welcome. • Approach may be reviewed in such a way that incentive/dis-incentive for availability shall be |

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| | | Review of the incentive formula for HVDC bi-pole and HVDC back-to-back stations at par with AC system;<br>• Specify appropriate region (import or export) for certifying the availability of Inter-regional links (AC and HVDC line) for the purpose of incentive and recovery of annual fixed charges; and<br>• Review of the existing methodology or procedure for computation of availability, monthly availability and cumulative availability | different for peak and off-peak seasons. It is also important to also specify standards of performance for transmission utilities like it is specified for distribution utilities. Timeframe should be prescribed to resolve outages and penalties should be levied if the prescribed timelines are not met.<br>• Availability targets for HVDC system are much lower in comparison to AC system. There is a need to relook in to the target availability for HVDC system based on the past availability and increase HVDC system size.<br>Further, base transmission availability, on which incentive is computed, should also be revised considering improved performance of the transmission licensees.<br>Rather than giving incentive in proportion to AFC, incentive may be linked to RoE (currently considered by Bihar Electricity Regulatory Commission). This will be in-line with the approach adopted by the CERC for generation, where incentive for higher PLF was based on per unit rather than Annual Fixed Cost. |
| | Transmission Losses-[26.5.9) | Introduce the norms for inter-state transmission losses based on factors within control and international benchmarks. | • The norms for inter-state transmission losses based on factors within control and international benchmarks is necessary as existing interstate transmission losses are higher. Penalty mechanism need to be develop if Transco not achieve the targeted inter-state transmission losses. Further, there is no penalty for higher losses, therefore Transmission licensees are not motivated to reduce the same. |

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| | **Hydro Generation** | | |
| | Hydro Generation- (26.6) | • Review of existing values of NAPAF based on actual PAF data for last 5 years. | • Review of existing values of NAPAF based on actual PAF data for last 5 years is welcome. Further, it would be more rationale if generators AFC is linked to monthly target availability. |
| **18** | **Incentive** | | |
| | Incentive- (27) | Review linking incentive to fixed charges in view of variation of fixed charges over the useful life and on vintage of asset- Need for different incentives for new and old stations; Different incentive may be provided for off peak and peak period for thermal and hydro generating stations. Differential incentive mechanism for storage and pondage type hydro generating stations may also be considered.<br>• Review the incentive and disincentive mechanism in view of the introduction of compensation for operating plant below norms.<br>• Review the norms for availability of transmission system. | There should be different incentive for off peak and peak period for thermal and hydro generating stations to motivate the generators to provide power to beneficiaries when they required most at the time of high demand.<br>Compensation for plants operating below norms should be scrapped.<br>It is also proposed to have different availability norms for peak and off-peak seasons.<br>* Availability targets for HVDC system are much lower in comparison to AC system. There is a need to relook in to the target availability for HVDC system based on the past availability and increase HVDC system size.<br>Further, base transmission availability, on which incentive is computed, should also be revised considering improved performance of the transmission licensees.<br>Rather than giving incentive in proportion to AFC, incentive may be linked to RoE (currently considered by Bihar Electricity Regulatory Commission). This will be in-line with the approach adopted by the CERC for generation, where incentive for higher PLF was based on per unit rather than Annual Fixed Cost. |

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| **19** | **Implementation of Operational Norms** | | |
| | Implemen tation of Operation al Norms (28) | The operational norms of the new tariff period should be implemented from the effective date of control period irrespective of issuance of the tariff order for new tariff period. | The benefits of the improved operational norms are passed to beneficiaries only after time lag of few months when Tariff Order get issued. Therefore, we welcome proposal of implementing operational norms of the new tariff period from the effective date of control period irrespective of issuance of the tariff order for new tariff period. |
| **20** | **Late Payment Surcharge & Rebate** | | |
| | Late payment Surcharge & Rebate (30) | • Review linking late payment surcharge to MCLR instead of existing 1.5% per month of delay<br>• Rebate is applicable if payment is made in two days from presentation of bill. Valid mode of presentation of bill, authorized signatory, definition of two days (working days or including holidays) may need elaboration | Late payment surcharge (LPS) of 1.5% per month is very high considering low interest rate scenario currently prevailing in the country. It is suggested to link LPS with MCLR with some margin. LPS should not be excessively high and should be around interest rate of working capital. The Existing regulation provides a rebate of 2% if the bill is paid within 2 days of presentation of bill. Two days are very less to verify and pay the bills. It is suggested to give at least 5 working days from presentation of bill to avail 2% rebate on the bill amount. Further, After 5 days, rebate should be allowed on per day basis (2% prorated) till 60 days, in line with LPS charges, which are applicable on daily basis. |
| **21** | **Non-Tariff Income** | | |
| | Non-Tari ff Income (31) | The principle of treatment of other income as applicable in case of transmission can be extended for the generation business. | The proposal for extension of principle of treatment of other income in transmission business to the generation business is welcome. Further, accounting for the income on account of disposal of old assets and interest on advances should also not be missed. |

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| | | | The revenue from telecom business is adjusted at the rate of Rs 3000/- per KM, which was fixed in 2007 need review.<br>Some SERC's are having separate regulation for Income from other businesses, CERC may explore the same. |
| **22** | **Standardization of billing process** | | |
| | Standardization of billing Process (32] | Standardization of billing process including formats, verification may be done to avoid possible disputes Wherever electricity duty is applicable on auxiliary consumption, it needs to be specified whether the same is applicable based on normative or actual auxiliary consumption | The standardization of the billing process would be a much needed and welcome step. Specific formats should be draft after due diligence and any deviation from the set formats and process should not be encouraged.<br>Form-15 should additionally include the following:<br>Monthly coal consumption by Unit<br>Opening coal stock<br>Closing coal stock • Bills and Form-15 to be provided in MS-Excel format to Discoms |
| **23** | **Tariff mechanism for pollution control System (New norms for TPP)** | | |
| | Tariff mechanis mfor Pollution Control System (33.3] | Principle of brining the generator to same economic condition if considered as change in Law • Technical specification based on the difference in actual emission and revised emission, proposed technology, construction period, phasing plan for shutdown during the period<br>Change in auxiliary consumption and O&M expenses due to implementation | Change in auxiliary consumption based on consumption of proposed pollution control equipment' and O&M expenses due to implementation of pollution control equipment's shall be pass through on normative basis. Based on type and cost of technology, auxiliary consumption and separate allowance through O&M maybe allowed. The Commission while making such norms keep check that it will not lead to undue profiteering to developers. |

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| | | of pollution control equipment's | |
| **24** | **Commerci** | **al Operation or Service Start date** | |
| | Commercial Operation or Service Start date (35) | Addressing the shortcomings in existing methodology for trial run of generating station and trial operation for transmission element through appropriate regulatory mechanism<br>Issue of trial operation and commissioning of the project when a generation station is ready but cannot be operated due to non-availability of load or evacuation system<br>• Pre-requisite of completion of data telemetry and communication facilities for operationalization of RGMO for declaring COD of generating station<br>Linking of commercial operation date with scheduled commercial operation or schedule commencement date of the Power Purchase Agreement or Long Term Access Agreement respectively<br>Linking of commercial operation date of the transmission system with the commissioning of the generating units or stations<br>* Separation of commercial operation date of the unit or stations from the service start date under the contract | The Commission while deciding CoD should direct the transmission utility to make all out efforts to ensure that for every network, upstream and downstream network is also built in synchronization and there is no stranded asset as the transmission infrastructure cannot operate in isolation. Ideally the CoD of a transmission line should be accepted when both upstream/ downstream transmission assets are commissioned after signing of Long term access agreement with distribution utilities.<br>In case generator is ready for trial operation & commissioning as per agreement but cannot operated due to non-availability of evacuation system, the transmission licensee should provide the compensation based on daily loss to generator, vice versa.<br>* Linking of the COD of the transmission system with the commissioning of the generating units is essential;<br>Pre-requisite of completion of data telemetry and communication facilities for declaring COD should also be necessary; |
| **25** | **Energy Storage System** | | |

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| | Energy Storage System (36) | Energy storage system for use are to combine the tariff with transmission and generation projects. Storage facility as a part of inter-state transmission system may be subjected to regulatory approval while storage facility as a part of the generating capacity may be as per the consent of the procurer for availing storage facilities.<br>The annual fixed charges of energy storage system may be determined separately as per the pre-specified operational and financial norms by the Commission and may be recovered from the beneficiaries of the region as supplementary to the transmission charges. Energy storage at transmission level can be used for overall optimization of power from the grid, irrespective of the owner of storage capacity and may be dispatched when needed. Such dispatch can be added in the drawl schedule of all beneficiaries of the region on ex-post basis. Alternatively, the energy storage at transmission level can be used as ancillary support services. The specific operational procedure can be devised for transmission level grid storage.<br>The annual fixed charges of the storage facility can be determined | With the increasing penetration of wind and solar power and higher share of RE, balancing of Grid become a major issue. In existing scenario, energy storage system seem to be vital for the grid. The proposed approach to have Storage facility as a part of inter-state transmission system and as a part of the generating capacity is welcome.<br>The annual fixed charges of the storage facility can be determined based on ramping rate, auxiliary consumption, Return on Equity [ROE], Interest on Loan, Depreciation, Operation & Maintenance cost and Interest on Working Capital and may be recovered from the beneficiaries of the region as supplementary to the transmission charges. Energy storage at transmission level can be used for overall optimization of power from the grid, irrespective of the owner of storage capacity and may be dispatched when needed. Such dispatch can be added in the drawl schedule of all beneficiaries of the region on ex-post basis. |

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| | | based on ramping rate, auxiliary consumption, Return on Equity (ROE), Interest on Loan, Depreciation, Operation & Maintenance cost and Interest on Working Capital. | |
| **26** | **Alternative Approach to Tariff Design** | | |
| | Benchmarking of Capital Cost (37.6) | Would it be advisable to undertake econometric analysis to arrive at benchmark capital cost?<br>What are the variables that should be considered for the purpose of determining Capital Cost on normative basis?<br>Any other methodology for benchmarking the capital cost for generation and transmission projects? | Econometric analysis to arrive at benchmark capital cost may be adopted but in this approach covering of all vital variable i.e., type of technology, mandatory environmental norms etc, is complex and require huge database |
| | AFC as a percentag eof Capital Cost (37.9) | Whether it is a good idea to determine AFC as percentage of Capital Cost on normative basis? What could be the possible methodology to establish the relation between AFC and Capital Cost so that it meets the interests of both buyers and sellers? | • Determination of AFC on percentage of capital cost makes the tariff determination less complicated and easily understandable hence recommended. Percentage may be determined separately for thermal and hydro, with further bifurcating them to type of technology. Relation between AFC and capital cost may be explored based on actual data of sampled stations. In this approach as AFC is linked to Capital cost, determination of capital cost becomes important. |
| | By fixing each compone ntofAFC as a | Whether clustering the components of AFC based on their nature to increase/ decrease in order? Any other possible method to cluster the AFC components? | Options of clustering the components of AFC based on their nature to increase/ decrease in order may be explored |

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| | percentag e oftotal AFC (37.17) | What methodology should be adopted to determine the escalable (increasing)/ non-escalable (decreasing) factors?<br>Whether escalable (increasing) / non-escalable (decreasing) factors should remain same for all plants/transmission systems (or) they be separate for each of the plants/transmission systems based on vintage / capacity / fuel type/ fuel linkages etc.<br>Whether isolation of "Additional Capitalization" as a separate stream of revenue would provide for recovery of AFC on a normative basis in realistic terms?<br>Alternatively, do you suggest any other methodology to treat "Additional Capitalization" for determination of AFC on normative basis?<br>Whether applicability of change in tariff principles in each control period for the new plants would allow regulatory certainty to the existing plants?<br>Alternatively, is there any other methodology to minimize the impact on AFC on account of change in control period? | |
| 27 | **Principles of cost Recovery- Approach towards Multi- Part Tariff** | | |

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| | Principles of cost Recovery-Approach towards Multi-Part Tariff [38] | • Does the proposal of differential recovery of AFC by segregating into peak and off-peak periods balance the need for both the buyers and sellers? What could be the weightage factors for peak and off-peak periods along with the PAF for each segment? What could be other mechanisms to arrive at peak and off peak AFC tariffs? | Yes, the proposal of differential recovery of AFC by segregating into peak and off-peak periods balance the need for both the buyers and sellers. Weightage factors for peak and off-peak periods may be determined by following steps:<br>I$^{st}$ Step: determination of Off-peak and Peak period based on daily/monthly/annual load data.<br>II$^{nd}$ step: Identification of Peak and off-peak period and weightage of the same can be considered.<br>As regards PAF, 85% for off-peak period and 90% for peak period may be considered. |
| **28** | **Relaxation of Norms** | | |
| | Relaxatio n of Norms [39] | Whether to continue with the practice of relaxing of norms or change the parameters during the intervening stage. | Present framework of relaxing of norms in special conditions maybe continue. |
| **29** | **Merit Order Operation** | | |
| | Merit Order Operation [40] | Present merit order is based on the fuel cost of the past data, with time lag of up to two-three months in billing cycle. | It has been observed that certain plants especially old ones having low overall tariff and higher variable rate don't get dispatch.<br>Three options in MoD are suggested:<br>• The generators may be allowed to give discount in AFC on annual basis which shall be adjusted in energy rate while scheduling dispatch as per MOD.<br>• As the data related to energy charges with the |

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| | | | beneficiaries are two - three months old, the generators can be allowed to declare its energy rate considering its latest available data(variation in energy rate shall not be allowed more than 10% to last available with the beneficiaries). If three part tariff get implemented variable component of AFC also get linked with actual generation. In such scenario, there shall be option to generator to declare energy rate while giving schedule on day ahead basis. Further, declared energy rate shall not be more than last available actual energy rate with the beneficiary. The difference between declared and actual energy charge at that point of time may be considered as discount from the generator. |

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