

**Summary of the comments and suggestions received on Approach Paper on Terms and Conditions of Tariff Regulations for the tariff period 1.4.2014 to 31.3.2019**

(Ref No. 20/2013/Fin(Vol-I)/Tariff Reg/CERC Date: 25<sup>th</sup> June'2013)

**4. Alternate Tariff Design: Based on First Year Tariff with Indexation for Balance Life**

*a) Whether the approach of determination of tariff (fixed charge for the first year with fixed and indexed components for remaining period as explained above should be adopted for the new projects?*

**Comments/Suggestions**

Sr.No.	Name of organization /stakeholder	Comments/ Suggestions
<b>A) Autonomous Bodies (JERCs/SERCs/Other Commissions)</b>		
A.1	Rajasthan Electricity Regulatory Commission	No Drawback of the proposed methodology are : (1) Suggested approach will require regression curve and component to be escalated annually per each project as otherwise it will not correctly gather the rate of interest charges varying from year to year (2) It will not cater to contingency of loan swapping resulting in benefit to generating company/transmission licensee. (3) It will not cater to O & M expense varying at higher than indexed rate. (4) It will not cater to statutory changes in income-tax rates and other tax rates. (5) It will not cater to change in any error in determination of capital cost, degradation/up gradation in capacity .
<b>B) Government Departments</b>		
B.1	Govt of Odisha	This approach could be considered on trial basis for the upcoming projects. Based on the success, the approach may be considered to be extended for existing projects.
B.2	Government of Punjab, Dept. of Power	The basis of MYT should be simple understandable to both investor as well as beneficiaries. Introducing new concepts in every MYT period will bring about regulatory uncertainty over the life of the project. Therefore, such new concepts should not be introduced in every MYT period to avoid confusion.
<b>C) Central Sector (Generators/Transmission Cos./NLDCs/RLDCs)</b>		
C.1	Tehri Hydro Development Corporation Limited (THDC Ltd.)	There is no regulatory uncertainty and it is better to have a regulatory framework for a control period as a whole.
C.2	Narmada Hydroelectric	The debt market in India is yet to be stabilize, thus the present situation is pre-matured to be considered for implementing

	Development Corporation Ltd. (NHDC Ltd.)	alternative tariff design, based on first year tariff with indexation for the balance life.												
C.3	Damodar Valley Corporation (DVC)	<p>The existing practice of allowing provisional tariff may be continued with an alternative algorithm detailed hereunder which may be optional to the generators:</p> <p>PROPOSED PROVISIONAL TARIFF DETERMINATION ALGORITHM:</p> <p><b>Step 1: Collection of data</b> Complete data set of final fixed charges 2013- 14 as determined by CERC for each type of MW sets (200,300,500,600 series) separately to be collected. In cases where final fixed charge is not determined, existing provisional tariff determined for 2013-14 will be taken into account. The total fixed charge expressed in per KWH (normative) form will be segregated in two parts, namely <b>Part A &amp; Part B</b>.</p> <p><b>Part A</b> will be O&amp;M per kWh and may be calculated as per O &amp; M norms.</p> <p><b>Step 2: Finding component relationship with age</b> Yearwise <b>B components</b> (other elements of fixed charges except O &amp; M) will be averaged to get a single representative B value for each year. Then one curve will be plotted using power function for B component.</p> <p><b>Step 3: Normalizing the B component</b> using the age polynomial function to get age- neutralized B values for each year.</p> <p><b>Step 4: Get mean &amp; standard deviation</b> of average B values.</p> <p><b>Step 5: Such mean &amp; standard deviations</b> will be used to define provisional B range after applying an appropriate % escalation (say 10%) to mitigate regulatory uncertainty of 14-19 tariff period.</p> <p><b>Step 6: The provisional tariff</b> will be allowed in the tariff regulation in the following format: Provisional tariff for Thermal :200 MW set (200/210/250)</p> <table border="1" data-bbox="651 1482 1451 1892"> <tr> <td data-bbox="651 1482 867 1791">B will be in between <b>B min &amp; B max</b> at the option of generating company subjected to final truing up by CERC</td> <td data-bbox="867 1482 959 1791">Constant</td> <td data-bbox="959 1482 1203 1791">Formula power</td> <td data-bbox="1203 1482 1451 1791">Applicable FC formula for B as a function of Age</td> </tr> <tr> <td data-bbox="651 1791 756 1892">B min</td> <td data-bbox="756 1791 867 1892">B max</td> <td data-bbox="959 1791 1203 1892"><math>\mu</math></td> <td data-bbox="1203 1791 1451 1892"><math>x^b</math></td> </tr> <tr> <td colspan="2"></td> <td colspan="2" data-bbox="1203 1791 1451 1892"><math>FC_b = \mu x B x Age^{-xb}</math></td> </tr> </table>	B will be in between <b>B min &amp; B max</b> at the option of generating company subjected to final truing up by CERC	Constant	Formula power	Applicable FC formula for B as a function of Age	B min	B max	$\mu$	$x^b$			$FC_b = \mu x B x Age^{-xb}$	
B will be in between <b>B min &amp; B max</b> at the option of generating company subjected to final truing up by CERC	Constant	Formula power	Applicable FC formula for B as a function of Age											
B min	B max	$\mu$	$x^b$											
		$FC_b = \mu x B x Age^{-xb}$												

		Where $\mu$ is the constant and $x^b$ is the polynomial power of the plotted curve.
C.4	National Hydroelectric Power Corporation (NHPC)	Since tariff based competitive bidding is applicable in the country (except hydro), which provides for tariff on the proposed principle not exactly the same, it is not advisable to introduce this in tariff regulations. Secondly, when provision for everything including the digression, escalation, additional capitalization etc. has to be incorporated in between the tariff period, the tariff determination on existing methodology is suitable and should be continued.
C.5	North Eastern Electric Power Corporation Ltd. (NEEPCO)	The proposed new approach is not in favour of growth of the power sector. The methodology proposed for ascertaining escalable components of the fixed charges will not furnish the correct figure. Further, escalation of the escalable component based on WPI and CPI is not a fair method. Further, the said proposed methodology will create more negative impact on hydro sector due to unique location, topography etc. as well as risks involved during its construction as well as operating stages and thus will discourage the investors. Therefore, the present tariff approach may be applied to all existing and new projects.
C.6	National Thermal Power Corporation (NTPC)	The proposed new approach is not in favour of growth of the power sector. The methodology proposed for ascertaining escalable components of the fixed charges will not furnish the correct figure. Further, escalation of the escalable component based on WPI and CPI is not a fair method.
C.7	Neyveli Lignite Corporation	Tariff need not be changed based on first year tariff with indexation for balance life.
C.8	Power Grid	In the current Approach paper, the Commission has not elaborated the approach to be adopted for approving the first year tariff in terms of ROE/ROCE, pre/post tax approach, O & M expenses. Given this limited information, it is suggested that the alternative tariff designed may also be proposed as a part of the regulations and the utility may be given a flexibility to approach the Commission under any of the frameworks without the option of switchover.
<b>D) State Sector (Generators/Transmission Cos./Distribution Cos./SEBs/SLDCs)</b>		
D.1	Madhya Pradesh Power Generation Co Ltd	The approach for determination of tariff given under Alternative Tariff design based on the first year tariff and indexation can be considered for new projects. First year should be counted from the cut-off date to account for additional capitalization after the CoD. However, by adopting this tariff design provision for replacement of assets and additional capital expenditure on account of unavoidable conditions should also be kept.

D.2	Rajasthan Discoms Power Procurement Centre	The basis of MYT should be simple tariff which is understood by the investor as well as the beneficiaries. Introducing new concepts in every MYT period will bring about Regulatory Uncertainty over the life of the project. It is therefore requested that new concepts which are difficult to understand by the beneficiaries as well as the developers may not be introduced in every MYT period to avoid confusion.
D.3	Uttar Pradesh Power Corporation Ltd. (UPPCL)	The basis of MYT should be simple tariff which is understood by the investor as well as the beneficiaries. Introducing new concepts in every MYT period will bring about Regulatory Uncertainty over the life of the project. It is therefore requested that new concepts which are difficult to understand by the beneficiaries as well as the developers may not be introduced in every MYT period to avoid confusion.
D.4	GRIDCO	This approach could be considered on trial basis for the upcoming projects. Based on the success, the approach may be considered to be extended for existing projects.
D.5	Tripura State Electricity Corporation Ltd.	The proposal for determining tariff based on 1 <sup>st</sup> year fixed tariff and indexation for balance life on pre-determined norms for new project is similar to case-I/case-II bid process. The difficulties/issues encountered in case-I/case-II project may be considered and thereafter CERC may float separate discussion for such alternate tariff design methodology.
D.6	Gujarat Urja Vikas Nigam Limited	Alternate tariff design based on first year tariff with indexation for balance life may be complicated on account of various variables which cannot be forecasted for the entire project life and required frequent revisions. Since it would be very difficult to capture all revisions adequately through indexation, therefore, present methodology is suitable.
D.7	Orissa Power Generation Corporation Ltd.	The current approach should be followed.
D.8	Chhattisgarh State Power Distribution Co. Ltd.	It is to submit that the tariff determination process should be understandable by everyone and should be very simple and based on the actual figures rather than hypothetical indexation. Indexation may result in creeping of several anomalies in tariff structure. Introducing new concepts in every MYT period will bring about Regulatory Uncertainty over the life of the project. It is therefore requested that new concepts which are difficult to understand by the beneficiaries as well as the developers should not be introduced in every MYT period to avoid confusion.
D.9	MP Power Management Company Ltd.	The tariff determination process should be understandable and very simple and based on the actual figures rather than hypothetical indexation. Indexation may result in creeping of several anomalies in tariff structure. Introducing new concepts in every MYT period will bring about Regulatory Uncertainty over the life of the project. It is therefore requested that new concepts which are difficult to understand by the beneficiaries as well as the developers may not be introduced in every MYT period to avoid confusion.

D.10	Maharashtra State Power Generation Co. Ltd.	The alternate tariff design proposal is not expected to serve the intended purpose and thus no comments are offered.
D.11	Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL)	It is submitted that proposal of determining tariff based on 1st year fixed tariff and indexation for balance life of project on pre-determined norms for New Projects is something similar to Case-I/II bid process. The difficulties/issues observed in Case-I/II projects may be taken into consideration and thereafter CERC needs to float separate discussion paper/ guidelines for such alternate tariff design methodology. As a 2nd option, the Commission may, however, specify that regulations as on the date of In-Principle Approval shall apply for the life of a project.
D.12	Kerala State Electricity Board (KSEB)	The annual fixed cost of the generator or transmission licensee for the entire useful life can be estimated as on the date of COD with a reasonable accuracy. Further, considering the uncertainty on the tariff determination on present methodology, the following alternative approaches for tariff determination have been suggested: <ul style="list-style-type: none"> <li>• Levelised Tariff Approach</li> <li>• First year tariff with indexation for balance life.</li> </ul>
D.13	Tamil Nadu Generation and Distribution corporation limited (TANGEDCO)	The Commission may circulate draft norms for Alternate Tariff Design based on first year tariff with indexation for balance life detailing the pre-specified limit to be allowed on additional capitalization, expected operational efficiency, degression curves for new and old projects, etc. A methodology for indexation should be proposed such that no legal issue rises as in the previous tariff period of 2001-04.
<b>E) Private Sector (Generators/Transcos/Distribution Cos)</b>		
E.1	Jindal Power Limited	The Commission may adopt alternate tariff framework for new projects provided the issues enumerated above are addressed and there is no compromise on recovery of the cost plus basis of tariff determination. Alternatively, The Commission may considered following : <ul style="list-style-type: none"> <li>• In case the Commission considers it prudent to continue with the existing methodology of MYT regime, we request that in order to provide greater regulatory certainty and reduce the financial risk for the project developer, the Commission should introduce the concept of Tariff Period similar to that applicable to renewable energy projects. The concept of tariff period would protect the project developers from any changes in regulatory regime during subsequent control periods.</li> <li>• The tariff period may be defined as period for which tariff/ AFC is to be determined by the Commission on the basis of norms specified under prevalent the CERC Regulations. The Tariff Period should be considered equal to useful life of the project (i.e. 35 years for hydro projects)</li> <li>• Therefore the tariff norms such as ROE, interest on</li> </ul>

		<p>working capital etc applicable during a particular control period under which the projects gets commissioned (or the COD of the last unit of the project) should remain valid for the useful life of that project.</p> <ul style="list-style-type: none"> <li>• Further, the Commission should provide a flexibility to file a separate Petition or to undertake revision in tariff/AFC based on suo-motu basis in case of significant variation in market conditions and unforeseen circumstances resulting in additional capital or operating &amp; financial cost for the generator. The Commission may revise AFC considering the norms prevalent at the time of filing of such review Petition</li> </ul>
E.2	Calcutta Electric Supply Corporation Limited (CESC Ltd.)	<p>The method of Alternate Tariff Design based on First Year Tariff with Indexation for Balance Life is simpler, it may pose significant challenges if implemented. It is extremely difficult to project the efficiency level, station heat rates and other cost elements over a long period of time. Such methods will always result in under-recovery/over-recovery for developers and interim reviews might not be sufficient to address cash flow issues of the developers. <b>Thus the present approach may be continued.</b> Also a detailed study of efficiency parameters with vintage needs to be carried out before any such measure is contemplated.</p>
E.3	Athena Infraprojects Pvt. Ltd.	<p>Commission may clarify as to how the degression curve would be determined considering the fact that in case of projects no two hydro projects would be identical.</p> <p>In case of hydro projects, the ratio of escalable components to non-escalable components is less in the initial years and increase in subsequent years of operation. In case the tariff is determined in the first year itself, what would be the ratio which would be considered and will such ratio be allowed to change in subsequent years of operation.</p>
E.4	GMR Kamalanga Energy LTD	<p>Power market is not yet mature in dealing with the additional risk of Alternate Tariff design.</p>
E.5	Jindal Steel & Power Ltd.	<p>The Commission may adopt alternate tariff framework for new projects provided the issue enumerated above are addressed and there is no compromise on recovery of the cost plus basis of tariff determination.</p> <p>Alternatively, in case the Commission considers it prudent to continue with the existing methodology of MYT Regime we request that in order to provide greater regulatory certainty and reduce the financial risk for the project developer the concept of tariff period similar to that applicable to renewable energy projects should be introduced.</p> <p>Therefore, the tariff norms such as ROE, interest on working Capital etc applicable during a particular control period under</p>

		<p>which the projects gets commissioned (or the COD of the last unit of the project) should remain valid for the useful life of that project.</p> <p>Further, Commission should provide a flexibility to file a Separate Petition or to undertake revision in tariff based on suo-motu basis in case of significant variation in market conditions and unforeseen circumstances resulting in additional capital or operating &amp; financial cost for the generator. The Commission may revise AFC considering the norms prevalent at the time of filing of such review Petition.</p>
E.6	Association of Power Producers (APP)	<p>The assumption of payout curve and prefixed (percentage) escalable component may not hold good for entire period of PPA and for all projects. The current approach is more scientific and realistic in nature. The escalable component of cost i.e. O&amp;M under current norms is derived based on the actual data obtained from central power stations. It is difficult to estimate a single percentage for the escalable component of tariff. The fixed charge varies from project to project based on the project cost, location etc. The concept of fixed component remaining same for the duration of the PPA effectively means lower returns for the developer in initial years when debt service is high for the project.</p> <p>Further, in the current methodology though the exact quantum of recovery may vary from one control period to another, the broad methodology ensures recovery of actual costs. However, the alternate tariff design as suggested, may not lead to full recovery of costs and would increase the uncertainties for developers rather than reducing them.</p>
E.7	Rudraksh Energy	Existing method may be continued.
E.8	Bhavnagar Energy Company Ltd.	<p>It is suggested that for the new project as against the existing financial norms (Hybrid Approach) fixed cost &amp; variable cost for deciding tariff, alternative tariff design i.e. fixed and incurred components' for remaining life of the generating unit, may be explored as an alternative to determine tariff. Tariff design should be such as to ensure periodic table recovery of cost and should not be subjected to periodic changes in financial &amp; operational norms.</p> <p>Further, the determination of tariff for new project only for the first year based on financial and operational norms prevailing on COD with a provision of periodic revision of fixed components to take in to account changes on O&amp;M Cost, depreciation, interest on loan etc., @ 20% to 25% towards O&amp;M components' of the AFC may be treated as an escalated component. Escalation rate may be determined year on year basis based on WPI &amp; CPI. Remaining 75% to 80% of AFC may have digressions curve to take in to account depreciation interest on loan rate. For</p>

		<p>replacement of asset and additional capital expenditure during the useful life of the project, separate approval of the additional capitalization and on consequent revision of AFC and digression curve to adjust for such additional capital expenditure.</p> <p>Further, Performance of the Plant in terms of Station Heat Rate (SHR) may be reviewed at an interval of every five year and based on revised SHR energy charge may be passed through.</p>
E.9	IL & FS Energy	With the principles set out under section 61 of Electricity act, 2003 and Tariff Policy, 2006, we propose that for tariff period 2014-19, the existing methodology may be continued.
E.10	BSES Yamuna Power Limited	The current system of tariff determination has evolved over last three tariff periods. It is in line with various accounting concepts and conventions. It also has a bit more clarity on legal front.
E.11	Torrent Power	<p>The assumption of payout curve and prefixed (percentage) escalable component may not hold good for entire period of PPA and for all projects. The current approach is more scientific and realistic in nature. The escalable component of cost i.e. O&amp;M under current norms is derived based on the actual data obtained from various power stations including central power generating stations. It is difficult to estimate a single percentage for the escalable component of tariff. The fixed charge varies from project to project based on the project cost, location etc and therefore a single percentage of fixed component is difficult to be estimated. The concept of fixed component during the tenure of PPA effectively means lower returns for the developer in initial years when debt service is high for the project.</p> <p>Further, the alternate method as suggested, may not lead to full recovery of fixed costs leading to increase the uncertainties for developers rather than reducing them.</p>
<b>Other Organizations/Institutions/Banks/Investors</b>		
F.1	National Institute of Public Finance and Policy (NIPFP)	<p>The indexation approach described is promising, but it should be modified a little.</p> <p>Tariff is determined by dividing the required revenue by the number of units produced/sold. Each of these can be subjected to a different regulatory treatment periodically.</p> <ul style="list-style-type: none"> <li>• The fair rate of return may be revised annually (on actual basis for debt, and based on CAPM for equity).</li> <li>• The operating costs should be revised annually based on two types of adjustment factors: adjustment for inflation of costs and adjustment for improvement in efficiency.</li> <li>• On depreciation, since the Commission follows a straight line method, unless there are additional assets to be depreciated in the coming year, the depreciation charge would remain unchanged year on year.</li> <li>• Taxes will be the actual applicable taxes.</li> </ul>



		<ul style="list-style-type: none"> <li>• The Regulatory Asset Base (RAB) may be revised annually based on the standard formula.</li> <li>• Number of units produced / sold may be revised periodically, based on estimates from firms and approved by the Commission.</li> </ul> <p>So, indexation makes sense only for some of the variables going into the tariff decision. Indexes should be created for each of these, and the calculations should be done annually to revise the tariffs. The indexation should not be done for the balance life but only for a regulatory cycle (5 years), because there may be changes in fundamental variables going into creating the index. This approach would provide certainty of tariff to the investors, and bring a systematic and less discretionary approach to tariff revision within the regulatory cycle. The Commission should leave a window open for revising the index under specified exceptional circumstances, which should be published in advance.</p>
F.2	Federation of Indian Chambers of Commerce and Industry (FICCI)	This approach itself needs further deliberation in detail, may consider the same separately
<b>Individual /Public Group/Any others</b>		
G.1	Dr.Ashok Kundapur	At least till the debt service is cleared, some relief has to be there for developer. Better alternate suggestions can be considered.
G.2	Shri Arun Kumar Dutta	<p>Once capital invested is determined based on COD and existing norms duly modified with regional (location) factors, the fixed charges may be fixed. Any future retirement and addition may need revision in the fixed cost and correction in the regression curve may not be a major factor. O&amp;M charge may be fixed on normative basis based on the CAG audited balance sheet for the most efficient company. However all these norms can revise once in 3 to 4 years. As regards private operators, there is a tendency to inflate expenditure and also due to unaccountability. The audited balance sheet cannot be taken as the yard stick. There should be the prudence check of actual capital expenses with several stations/companies to arrive at the lowest capital expenses which may match the govt. owned companies only. Such capital expenses can be adopted for AFC with 20% escalation and the rest considered for regression curve.</p> <p>As regards O&amp;M cost, these are very standard operation and can be evaluated station wise/region wise and arrived at normative level for indexation. However, WPI &amp; CPI are both on higher side and efficiency has to be progressively raised by about 2% annually. The regression curve may be redrawn when fresh</p>

		capital is infused. In any event the availability of the plant and the capacity must be maintained and improved gradually. It is emphasised that no idle period is ever considered for fixed charges and availability must be above 90% to improve gradually. In case of lower availability it should be increased to target of 90%.
G.3	Shri Shanti Prasad	No Drawback of the proposed methodology are : <ol style="list-style-type: none"> <li>(1) Suggested approach will require regression curve and component to be escalated annually per project as otherwise it will not correctly gather the rate of interest charges varying from year to year</li> <li>(2) It will not cater to contingency of loan swapping resulting in benefit to generating company/transmission licensee.</li> <li>(3) It will not cater to O &amp; M expense varying at higher than indexed rate.</li> <li>(4) It will not cater to statutory changes in income-tax rates and other tax rates.</li> </ol> It will not cater to change in any error in determination of capital cost, degradation/up gradation in capacity .

*b) How should the degression curve be set?*

Sr.No.	Name of organization/ stakeholder	Comments/ Suggestions
A) Electricity Regulatory Commissions (JERCs/SERCs)		
B) Government Departments		
B.1	Government of Punjab, Dept. of Power	The term is new. Therefore, no comments
C) Central Generators/Transmission License		
C.1	Tehri Hydro Development Corporation Limited (THDC Ltd.)	Same as 4(a) above.
C.2	Narmada Hydroelectric Development Corporation Ltd. (NHDC Ltd.)	(Included in (a) above)
C.3	North Eastern Electric Power Corporation Ltd. (NEEPCO)	The proposed new methodology should not be implemented with the present scenario.
D) State Generators /Transmission License /State Distribution Licensees		
D.1	Rajasthan Discoms Power Procurement	No comments. Since the terms digression curve is still new.

	Centre	
D.2	Uttar Pradesh Power Corporation Ltd. (UPPCL)	No Comments. Since the term digression curve is still new.
D.3	Chhattisgarh State Power Distribution Co. Ltd.	No comments.
D.4	MP Power Management Company Ltd.	No comments.
E) Private Sector (Generators/Transcos./Distribution Cos)		
F) Other Organizations/NGOs/Institutions		
G) Individual		

**C) What difficulties are foreseen in implementation of the above mentioned approach?**

**Comments/Suggestions**

Sr.No.	Name of organization/ stakeholder	Comments/ Suggestions
A) Electricity Regulatory Commissions (JERCs/SERCs)		
B) Government Departments		
B.1	Government of Punjab, Dept. of Power	Will bring regulatory uncertainty.
C) Central Generators/Transmission License		
C.1	Tehri Hydro Development Corporation Limited (THDC Ltd.)	Same as 4(a) above.
C.2	Narmada Hydroelectric Development Corporation Ltd. (NHDC Ltd.)	(Included in (a) above)
C.3	North Eastern Electric Power Corporation Ltd. (NEEPCO)	The proposed new methodology should not be implemented with the present scenario.
D) State Generators /Transmission License /Distribution Licensees		
D.1	Rajasthan Discoms Power Procurement Centre	It will bring about Regulatory Uncertainty.
D.2	Uttar Pradesh Power Corporation Ltd. (UPPCL)	It will bring about Regulatory Uncertainty

D.3	Chhattisgarh State Power Distribution Co. Ltd.	There will be Regulatory Uncertainty.
D.4	MP Power Management Company Ltd.	There will be Regulatory Uncertainty.
E) Private Sector (Generators/Transcos./Distribution Cos)		
F) Other Organizations/NGOs/Institutions		
F.1	National Institute of Public Finance and Policy (NIPFP)	The Commission will need a system of collecting the relevant information, and determining the tariff periodically. Much of this can be automated, if the information flow is streamlined. Since most variables are not likely to change significantly over a short period of time, the Commission may conduct this exercise every 2 years, with the tariff for the next two years set in year 1.
F.2	Federation of Indian Chambers of Commerce and Industry (FICCI)	Determining Escalation and Degression curve for each Project will be time consuming and may further lead to complications/litigations.
G) Individual		