

**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/CERC/Fin(Vol-I)/Tariff Reg/CERC Date: 25<sup>th</sup> June'2013)

**5.2.3 Auxiliary Energy Consumption**

The Comments are invited in regard to following issues, namely\_

- a) The stakeholders are requested to share their experiences to assess if there is a scope for improvement in the norms for auxiliary consumption. A fresh view may be required on inclusion of colony and construction power in auxiliary consumption.*

**Comments/Suggestions :**

Sr. No.	Name of organization/ stakeholder	Comments/ Suggestions
<b>A) Autonomous Bodies (JERCs/SERCs/Other Commissions)</b>		
A.1	Chhattisgarh State Electricity Regulatory Commission (CSERC)	For new plants the Auxiliary consumption target may be reduced slightly. However, to account for gradual decay, a linear indexation may be introduced for plants more than 10 years old. Further, differentiation shall be provided between the sets with static excitation system and rotating excitation system (about 0.35% for the sets of size 200 MW). Further, the colony and construction supply should not be included in auxiliary consumption, however the generator should continue to be allowed to meet such requirement from its own generation.
<b>B) Government Departments</b>		
B.1	Govt. of Odisha	(A) The APC should be derived based on the average of first four years data of the last Control Period for respective unit sizes or the design value whichever is less. (B) Colony consumption and construction power should not be included in the normative APC, as it shall provide cushion to the generators.
B.2	Government of Punjab, Dept. of Power	These norms need to be revisited based on actual data with certain operating margin with the condition that saving in cost due to better performance than norms should be equally shared with the beneficiaries. This has been adopted by the Commission in respect of secondary oil consumption in Tariff Regulations 2009. This will give way to the Performance Based Regulations (PBR).
<b>C) Central Sector (Generators/Transmission Cos./ NLDCs/RLDCs)</b>		

C.1	ONGC Tripura Power Company Ltd	<p>As per MoP order on [Removal of Difficulty] (Fourth) dated 8th June, 2005 the housing colonies are deemed to be an integral part of its activity of generating electricity and the generating company shall not be required to obtain licence under this Act for such supply of electricity. The Commission may hence consider the inclusion of colony consumption in auxiliary consumption.</p> <p>After commissioning of one unit, construction power required for remaining units of the project and for expansion of the existing project may be included in the Auxiliary Consumption and percentage of Auxiliary Consumption may be revised accordingly.</p>
C.2	Damodar Valley Corporation (DVC)	<p>Since inception, auxiliary power consumption of MTPS U #1- 4 is much higher compared to CERC Benchmark of 9%.</p> <p>The Commission may allow a normative auxiliary of 10.6% for MTPS 1 to 4.</p> <p>The colony power may be included in the auxiliary consumption. It is also difficult to keep a track of power used in all the construction activities. Therefore Commission may allow colony power &amp; power used in construction activities to be included in auxiliary consumption.</p> <p>The existing norms for all units may be increased to accommodate colony power &amp; construction period.</p>
C.3	IL & FS Energy	<p>The norms of Auxiliary power consumption for the power plants with additional environmental protection facilities viz., FGD may be specified separately.</p>
C.4	Southern Region Power Committee	<p>Allocations are made on installed capacity. In case colony loads are included, beneficiaries end up paying for the colony charges also. Further, consumption power requirement is to be met from the existing unit for new unit would also not be in order. Accordingly, colony power and construction power should not be included in auxiliary consumption.</p>
C.5	North Eastern Electric Power Corporation Ltd. (NEEPCO)	<p>In the existing regulation, normative auxiliary energy consumption varies from 1% to 3% in respect of gas based generating station depending on open or combined cycle operation. While fixing the norms, the following may be considered:</p> <ol style="list-style-type: none"><li>1. Size of the units-for example, auxiliary consumption for a 200 MW unit and for 4 nos. of 50 MW units cannot be same.</li><li>2. Type of the Generator Transformers (GT), whether single phase or three phase transformer, because transformation</li></ol>

		<p>losses is different for both the cases.</p> <p>3. Actual energy consumption (audited) in GT Motor Control Centre Panels (GT MCC) needs to be considered.</p> <p>4. Special consideration is required if the Gas Booster station is run by electrically driven motors in respect of gas based power stations.</p>
C.6	National Thermal Power Corporation (NTPC)	<p>In most of the NTPC stations APC is observed to be having a rising trend and it has been observed that 3 stations (Farakka, Kahalgaon, Talcher STPS Stage-I) which were affected by heavy partial loading due to aforesaid reasons are having APC higher than normative in last 4 years. As per NTPC experience for each 5% change i.e. decrease in unit loading, APC increases by about 0.25 %. In the current scenario, unit performance cannot be sustained during the coming years as unit loading is expected to be low in view of the following reasons:</p> <ul style="list-style-type: none"> <li>➤ Domestic coal availability projected as per new FSA is only 65 % of Annual</li> <li>➤ Contracted Quantity, which is very low and will lead to heavy partial loading in the coming years.</li> <li>➤ Lower demand / schedule &amp; lesser generation.</li> <li>➤ Partial loading of older stations due to R&amp;M works in ESP, DDCMIS and STG during the next tariff period.</li> </ul> <p>NTPC further submitted that existing norms of auxiliary power consumption as specified by CERC during 2009-14 period may be continued for the period 2014-19 along with consideration for additional margin as given below:</p> <ul style="list-style-type: none"> <li>➤ Additional Margin for MDBFP for 660 MW and 800 MW units: 3.5%</li> <li>➤ Additional Margin for Stations with Tube Mills: 1%</li> <li>➤ Additional Margin for Pipe Conveyor and associated conveyors: 0.5%</li> <li>➤ Additional Margin for Station with distantly located water source: 0.5%</li> <li>➤ Coal Quality Deterioration: 0.2%</li> </ul> <p>Further, with regard to the Tanda TPS and Talchar TPS, NTPC submitted that existing norms of auxiliary power consumption as specified by CERC during 2009-14 period may be revised for the period 2014-19 with additional margin of 0.5 % to take care of present condition and additional partial loading of 10 % above 09-14 period due to grid constraint &amp; coal supply/availability. With regard to Badarpur TPS, existing norms of auxiliary power consumption as specified by CERC during 2009-14 period may be revised for the period 2014-19 along with additional margin of 1.5 % to take care of present condition and additional partial loading of 5 % above 2009-14 period due to low grid demand, poor coal &amp; water availability and augmentation of closed CW system with additional CT.</p>

			<p>Further, with regard to the environmental measures taken by NTPC Power Stations, the existing APC norms of need to be revisited with additional consideration for the additional margin on account of the following:</p> <ul style="list-style-type: none"> <li>➤ Additional Margin for FGD: 1%</li> <li>➤ ESP Upgrade: increased APC on account of upgrades/retrofit should also be taken into consideration while formulating the APC norms in Tariff.</li> <li>➤ Additional Pump for Ash Disposal / Utilisation: 0.4%</li> </ul> <p>Further, for gas based stations, NTPC submitted that five years trend of APC is rising in all the units due to partial loading. This trend is likely to continue in the future due to partial loading reasons beyond the control of station like non availability of generation schedule. Additionally, the partial loading of Gas station is further expected to be at least 10% higher than the present condition. This will lead to an increase in minimum 0.2% in APC of the station. Thus, the existing APC norms of Gas stations need to be revisited with additional consideration for Partial Loading below 80% for all Gas stations.</p>
C.7	Neyveli Corporation	Lignite	<p>Definition of generating station under Electricity Act-2003 includes any building used for housing the operating staff of a generating station and also MOP order stipulates that the supply of electricity by a generating company to the housing colonies of the operating staff of its generating station or townships housing will be deemed to be an integral part of its activity of generating electricity.</p> <p>The colony consumption may be included in the Auxiliary consumption but an additional provision may be included in the normative value. In case of NLC's Plants at Neyveli (TPS I) and Barsingsar, colony consumption is already given separately while providing power allocation for the respective Mines by the CEA.</p>
C.8	Power Corporation	Trading	<p>The present CERC operation norms do not address varying quantum of energy generation for coal based TPS since the operation norms such as Station Heat Rate, Auxiliary Energy Consumption are fixed. In the present scenario, Thermal Generating Stations would need to operate in varying load (Availability Based Tariff) to harness renewable energy and hydro potential to the maximum extent and also due to shortage of domestic coal and high cost of imported coal, which discoms are not able to bear.</p> <p>Specific issues for introduction of operation norms for varying load (Availability Based Tariff)</p> <ol style="list-style-type: none"> <li>a. Auxiliary Consumption <ul style="list-style-type: none"> <li>The present CERC norm for auxiliary energy consumption is reasonable for MCR. However, auxiliary</li> </ul> </li> </ol>

		consumption at part load will increase.
C.9	Bajaj Energy Pvt. Ltd.	The operating norms of CFBC plants based on coal should also be kept at par with CFBC plants based on lignite fuel in respect of Auxiliary Energy Consumption.
<b>D) State Sector (Generators/Transmission Cos./Distribution Cos./SEBs/SLDCs)</b>		
D.1	Madhya Pradesh Power Generation Co Ltd	The power requirement of the colonies based on per MW man power requirement can be included in AFC and appropriate improvement in the norms for auxiliary consumption can be made.
D.2	Rajasthan Discom Power Procurement	These norms need to be revised on actual basis. Our proposal is to be specifying these norms based on actual data with certain operating margins with the condition that saving in cost due to better performance then norms should be equally shared with the beneficiaries. In a way moving towards performance based regulation. This sharing mechanism has been adopted by the commission in respect of secondary oil consumption in Tariff Regulation 2009.
D.3	Uttar Pradesh Power Corporation Ltd. (UPPCL)	Comments can be offered once CGU share actual data of Auxiliary Consumption.  Colony consumption and construction power may be metered separately and these items may not be included in the auxiliary consumption
D.4	OTPCL	The Commission may consider the inclusion of colony consumption in auxiliary consumption. After commissioning of one unit, construction power required for remaining unit of the project and for expansion of the existing project may be included in the Auxiliary Consumption and percentage of Auxiliary Consumption may be revised accordingly.
D.5	GRIDCO	The APC should be derived based on the average of first four years data of the last Control Period for respective unit sizes or the design value whichever is less. Colony consumption and construction power should not be included in the normative APC, as they shall provide cushion to the generators.
D.6	Tripura State Electricity Corporation Ltd.	The actual auxiliary consumption of CGS is lower than normative level. Therefore, CERC may decide the revised norms on the basis of actual past trend.
D.7	Power Company of Karnataka Ltd.	If Flue Gas De-sulphurization unit and Desalination units etc., are installed the Commission has to specify the percentage of auxiliary consumption for such units. Further, any associated equipments like captive jetty, water pump house etc., are located outside the generating station premises and are separately availing the power from the grid in such cases, the consumption of units made by these equipments shall be

		excluded from the auxiliary consumption. Such installations shall have to be treated as HT industrial consumers of concerned jurisdictional Distribution Licensee and shall be billed accordingly.
D.6	Gujarat Urja Vikas Nigam Limited	Auxiliary Consumption should not include construction power and colony consumption.
D.7	Chhattisgarh State Power Distribution Co. Ltd.	Colony consumption is the liability of the generator and should be borne by them whereas the construction power should be availed from local area distribution licensee. There is no provision in the Electricity Act to supply power by a generator to another generator, even for construction activity. Hence, in any case these items should not be included in the auxiliary consumption in any case. Based on actual data of major power stations the Commission may consider for reduction in auxiliary energy consumption norm. Further, auxiliary consumption for new plant are lower than old plants and therefore different norms should be prescribed for new and old plants.
D.8	MP Power Management Company Ltd.	Colony consumption is the liability of the generator and should be borne by them. Whereas the construction power is supposed to be a part of capital expenditure and it is expected to be covered in capital expenditure of the project and hence, these items may not be included in the auxiliary consumption in any case. On the contrary, there is a need for further reduction in existing auxiliary energy consumption norm.
D.9	Maharashtra State Power Generation Co. Ltd.	The auxiliary consumption should be reduced by 1% in respect of all existing thermal power stations having residential colony attached to such power stations.
D.10	Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL)	In actual the auxiliary consumption of CGS is lower than approved / normative levels. So based on the actual past trend, Commission may decide the revised norms. Further the impact of colony & construction power needs to be decided based on the consumption requirement level and accordingly the norms may be provided separately or may be included in existing ones and be retained at same level.
D.11	Tamil Nadu Generation and Distribution corporation limited (TANGEDCO)	The existing norms for Auxiliary consumption may be continued. However, there are some additional facilities, such as where additional equipment to meet the sweet water requirement of the boiler and other requirement is obtained through the desalination plant, where external coal handling system is required to unload the coal from the ship and move it to the power station, proper flue gas desulfurization plant to comply with the environmental standards are installed in a station. The consumption in these additional facilities are required to be given above the normal allowed for conventional coal based thermal station not having these facilities. Further, the Commission has been requested that the colony consumption shall not be treated as auxiliary.

<b>E) Private Sector (Generators/Transcos./Distribution Cos)</b>										
E1	Calcutta Electric Supply Corporation Limited (CESC Ltd.)	<p>Norms related to Station Auxiliary Energy Consumption need to be revisited as various additional equipment like, desalination plant, Flue-Gas De-sulfurisation unit etc. are becoming essential for power plant operation. In the alternate, separate allowance may kindly be provided for such equipment.</p> <p>Auxiliary energy consumption will also increase because of part load operation.</p>								
E.2	Jaiprakash Power Ventures Ltd.	The colony and construction power must be included in auxiliary consumption.								
E.3	BSES Yamuna Power Limited	Comments shall be offered once actual data is available.								
E.4	Torrent Power	<p>Power for colony consumption should be included in Auxiliary Energy Consumption (AEC) and may be specified based on past data.</p> <p>The Auxiliary Consumption percentage needs to be revised to address the following:</p> <p>(a) Operation of Plant at considerably lower load than Availability due to lower dispatch by Beneficiaries.</p> <p>(b) Losses of Bus Reactor</p> <p>(c) Losses of Inter connecting Transformers inside switchyard</p> <p>(d) Losses of Generator Step-up Transformer, Auxiliary Transformers</p> <p>(e) Power Consumption for Water Intake Pump Facility, when the same is away from the Power Station</p> <p>(f) Power for colony consumption</p> <p>In view of the above the current auxiliary consumption norms may not be sufficient to take care of the above and the following normative aux. consumption is recommended:</p> <table border="1" data-bbox="695 1331 1469 1472"> <thead> <tr> <th>Normative Age (in years)</th> <th>Normative Auxiliary</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>4%</td> </tr> <tr> <td>5-10</td> <td>4% to 5%</td> </tr> <tr> <td>10-15</td> <td>5%</td> </tr> </tbody> </table>	Normative Age (in years)	Normative Auxiliary	5	4%	5-10	4% to 5%	10-15	5%
Normative Age (in years)	Normative Auxiliary									
5	4%									
5-10	4% to 5%									
10-15	5%									
E.5	Association of Power Producers (APP)	<ul style="list-style-type: none"> <li>Existing norms of AEC may be continued. However, tolerances may be specified for part load operations in steps of 5% below the normative availability.</li> <li>Additional AEC should be allowed for installations of new technology equipments like FGD, Air cooled condensers or any equipment required for environmental compliances. For FGD, additional 2% may be considered.</li> <li>It is suggested that for CFBC based power plants, auxiliary power consumption norm should be atleast 12 %.</li> <li>Usage of sea water requires more blow down as compared to plant using normal water, additional AEC may be allowed for such plants.(0.5%)</li> </ul>								

		<ul style="list-style-type: none"> <li>• It will not be appropriate to include colony and construction power consumption in auxiliary power consumption due to the fact that, there is very little scope to accommodate such proposed consumption within the normative auxiliary consumption. In many cases, the power to colony is not supplied by the generating station itself; it is supplied with power by local Distribution Licensees of the area in which the colony is located. Power consumption of the colony also depends upon its size and no. of residents.</li> <li>• Norms for 300 / 330 MW Units may be fixed based on the operational experience from such Units.</li> <li>• Further, the construction power at various green-field project sites is procured from sources having no set pattern of costs. However, after commissioning of one Unit, construction power for the other Units under construction may be supplied from the first Unit and so on. Hence, a separate metering scheme needs to be installed at construction site in order to account for the construction power. In both cases, cost of construction power consumption shall be capitalized in the Books of Accounts. Therefore, it is not necessary to set a Norm for construction power consumption.</li> <li>• The Auxiliary Consumption percentage shall also cover the following criteria which may not have been considered currently: <ul style="list-style-type: none"> <li>✓ Losses of Bus Reactor, if any</li> <li>✓ Losses of Inter connecting Transformers inside Switchyard</li> <li>✓ Losses of Generator Step-up Transformer, Auxiliary Transformers</li> <li>✓ Power Consumption for Water Intake Pump Facility, which is away from the Power Station (Applicable for DGEN)</li> <li>✓ Power Consumption for the Township (Applicable for DGEN since Township will be away from the Power Station)</li> </ul> </li> <li>• In view of the above the current auxiliary norms may not be sufficient to take care of the above.</li> </ul>
E.6	Rudraksh Energy	Norms for Auxiliary consumption should be based on the actual figures for the last five years. However, saving in cost due to better performance should be shared with beneficiary.
E.7	Bhavnagar Energy	Colony and Administrative buildings should be included



	Company Ltd.	<p>in Auxiliary Consumption.</p> <p>Moreover for thermal generating stations where source of water is at a considerable distance from the plant site, certain specific additional consideration of power should be allowed while deciding operating norms for Aux. Energy consumption for such projects.</p>
<b>F) Other Organizations/Institutions/Banks/Investors</b>		
F.1	Federation of Indian Chambers of Commerce and Industry (FICCI)	<p>Colony power may be included in Auxiliary Energy Consumption. Many State Discoms charge very high tariff for startup power or any import of power from the grid as they consider it as Temporary Category power supply. It is suggested that any import of power for start up should be set off against the power exported.</p> <p>Developers should be allowed to extend the power supply to Colony (atleast for common facilities) or construction power of other under construction units and same shall be considered as Auxiliary power.</p> <p>In case of part load operations, mechanism needs to be determined for Auxiliary Power Compensation due to reasons beyond the control of generator, such as non-approval of alternate coal procurement, non availability of schedule from procurers, etc.</p> <p>Further, for CFBC based power plants, auxiliary power consumption norm should be at least 12%. Separate norms should be specified for 300/330 MW as well as for 125 MW/135 MW, 600 MW, 660 MW and 800 MW and all sizes of units operating in India based on past history.</p>
<b>G) Individual /Public Group/Any others</b>		
G.1	Shri R. B. Sharma	<p>The auxiliary energy consumption should be reduced by 1% in respect of all existing thermal power stations having residential colony attached to such power stations. As on today, the power supply to the residential colony attached to the power station is fed from the normative auxiliary energy consumption although the auxiliary energy consumption does not include colony power consumption. Therefore there is need auxiliary energy consumption should be reduced by 1% in respect of all existing thermal power stations.</p>
G.2	R.P. Sanjiv Genk Group	<p>Norms related to Station Auxiliary Energy Consumption need to be revisited as various additional equipment like, desalination plant, Flue-Gas De-sulfurisation unit etc. are becoming essential for power plant operation. In the alternative, separate allowance may be provided for such</p>

		equipment. Auxiliary energy consumption will also increase because of part load operation. Suitable revision in auxiliary energy consumption norm needs to be incorporated to address this issue.
G.3	Dr.Ashok Kundapur	The rate of auxiliary consumption should be fixed specifically for individual units.
G.4	Shri Arun Kumar Dutta	The existing norms may be compared with the actual achieved during the last 5 years so that there is a scope of reduction of auxiliary consumption. Further, the colony power consumption can be restricted to a moderate normative level beyond which it should be payable by the individual employee. Finally the cost of power saved may suitably be shared with employees at 20% as incentive.

- b) The norm for 300/330 MW units may have to be specified separately for which suggestions/comments are invited along with authentic support data available, if any.*

**Comments/Suggestions:**

Sr. No.	Name of organization/ stakeholder	Comments/ Suggestions
<b>A) Autonomous Bodies (JERCs/SERCs/Other Commissions)</b>		
	-	-
<b>B) Government Departments</b>		
	-	-
<b>C) Central Sector (Generators/Transmission Cos./ NLDCs/RLDCs)</b>		
C.1	ONGC Tripura Power Company Ltd	Apart from 300/330 MW units, gas based generating plants using motor driven gas compressors should be allowed to have higher (actual) auxiliary consumption on basis of manufacturer's guaranteed auxiliary consumption for new plants and as per historical data for already commissioned projects.
<b>D) State Sector (Generators/Transmission Cos./Distribution Cos./SEBs/SLDCs)</b>		
D.1	MP Power Management Company Ltd.	Comments can be offered only once the actual data of consumption is made available.
<b>E) Private Sector (Generators/Transcos./Distribution Cos)</b>		
		-
<b>F) Other Organizations/Institutions/Banks/Investors</b>		
		-
<b>G) Individual /Public Group/Any others</b>		