



GRIDCO LIMITED

(A Govt. of Odisha Undertaking)
(Formerly Grid Corporation of Orissa Limited)
Regd. Office: Janpath, Bhubaneswar-751022
CIN:L40109OR1995SGC003960

Ref .No. Sr.GM (PP)-27/2018/1503⁽⁶⁾

Date: 15.05.2020

To

Sri Sanoj Kumar Jha, IAS
Secretary, Central Electricity Regulatory Commission
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New Delhi - 110001

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Sub: Draft Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (First Amendment) Regulations, 2020 - Reg.

Ref: Public Notice No.L-1/236/2018/CERC Dtd.01.04.2020 & Dtd.30.04.2020 of CERC on the subject cited above

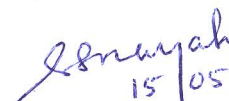
Sir,

With reference to the subject cited above vide public notices under reference, please find herewith attached the Views/Suggestions/Comments on Proposed Draft Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (First Amendment) Regulations, 2020.

This for favour of your information and necessary action.

Encl: Views of GRIDCO on Proposed Draft Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (First Amendment) Regulations, 2020 in 14 pages.

Yours faithfully


15/05/2020
CGM (PP)

- C.C.: i) The Commissioner-cum-Secretary, Govt. of Odisha, Dept. of Energy for kind appraisal.
ii) Director (Trading), GRIDCO/Director (Finance), GRIDCO for kind appraisal.
iii) E.A. to CMD, GRIDCO for kind appraisal of CMD.
iv) L.O., GRIDCO, New Delhi for submission of GRIDCO's request before the Hon'ble Commission.

Views of GRIDCO on 1st Amendment to CERC Tariff Regulations, 2019

1. As per Cl.5.10 of National Electricity Plan (Generation), January, 2018 [Table-5.14(c)], the PLF of Coal based Plants will hover around 56.5% in 2021-22 to 60.5% in the year 2026-27. Therefore, use of Coal for Power Generation will come down drastically during the Control Period (2019-24).
2. Further, as per Cl.6.3.1 of Explanatory Memorandum to CERC Tariff Regulations, 2019 *“CEA has estimated that in view of present demand growth rate and availability of commissioned and under construction capacity, no new coal based capacity may be required till 2027”*
3. Due to heavy upcoming infusion of Renewable Energy Sources as a result of the target addition of RE Capacity of 175GW by 2022 set by MNRE, GoI, Thermal Power Plants are expected to back down. Influx of Energy saving Equipment and LED Bulbs has also a downward effect on Energy Demand.

Due to the above reasons many of the above TPPs may not require installation of ECS for compliance with the new Environmental Norms.

4. Vide letter dated 20.02.2019, CEA has stated that *“Presently, no relevant operational data is available on DeSox and DeNOx systems in the country. The DeSOx systems are under implementation and pilot studies are underway for suitability of DeNOx system for high ash Indian coals.”*

As huge investment is required for installation of Emission Control Systems, which is ultimately to be passed on to the consumers through Tariff, selection of Technology for installation of DeSox and DeNOx systems should be carried out only with sufficient data from pilot projects for Indian Conditions and Indian Coal and should not be experimented on all the Generators with any assumed data.

5. Range of SO₂ Removal, which will vary from Plant to Plant, as envisaged in CEA's *‘Norms for installation of FGD for New Environmental Regulations – 7th December 2015 (From 21st February, 2019 onwards)’*, may be determined and certified by the Central/State Pollution Control Board prior to installation of Emission Control System in order to arrive at the Range of SO₂ Removal required for the individual plant(s).
6. Hon'ble Commission on 1st Apr 2020 has come out with an amendment i.e. CERC (Terms and Conditions of Tariff) (First Amendment) Regulations, 2020 in which the norms for emission has been prescribed. As per the amendment, the said Regulation would come into force w.e.f. 01.06.2020 except amendment to Regulation-21 of the Principal Regulations.

7. In this connection it is humbly submitted that the country is faced with severe pandemic for which there are lockdowns, shutdowns, containments and the economic activity has come to a grind halt. In this scenario, even if, the DISCOMs are maintaining uninterrupted power supply but are not able to collect the revenue from the consumers.
8. It is not known, when the economy of the country will revive, so that the common people will be able to live with minimum requirements, out of which electricity is one of the most basic needs of day-to-day life.
9. Under these circumstances, if the Public will be loaded with the additional tariff arising out of the cost to be incurred towards installation of Emission Control System, they will not be able to pay their bills to the DISCOMs, as a result the DISCOMs will not only be unable to pay the enhanced tariff, in this process they will also lose the normal tariff which is exclusive of cost towards ECS.

For the reasons stated above in Points 1 to 9, it is submitted before the Hon'ble Commission to defer the installation of Emission Control Systems by a period of at least 2 years and for the plants having more than 15 Years of balance life, so that the same can be taken up after revival of economic condition and sufficient operational data for DeSOx and DeNOx systems are made available from the Pilot Projects.

However, without prejudice to the above stand, GRIDCO submits its views on the Draft Regulations as given hereunder:

Regulation	Proposed Amendment	Suggested Modification	Views/Justification/Rationale
3(15a)	'Date of Operation' or 'ODE' in respect of an emission control system means the date of putting the emission control system into use after meeting all applicable technical and environmental standards, certified through the Management Certificate duly signed by an authorised person, not below the level of Director of the generating company; [New Insertion]	'Date of Commercial Operation' or 'CODE' in respect of an emission control system means the date of putting the emission control system into use after meeting all applicable technical and environmental standards, certified through the Management Certificate duly signed by an authorised person, not below the level of Director of the generating company and obtaining due certification from the State Pollution Control Board towards	i) Since the emission control system is put to commercial use after such date, the term should be modified as 'Date of Commercial Operation' or 'CODE' in line with Regulation 3(15): 'Date of Commercial Operation'. ii) Compliance is mandatory to the revised Emission Standards notified by MoEFCC vide notification dated 07.12.2015, therefore, the amended Regulations need to have provisions for certification from Central/State Pollution Control Board, which is the competent authority to ascertain and certify the compliance to the Environmental Norms. iii) In line with the provision for witnessing of

		compliance to all applicable environmental norms; Provided that, the Beneficiary(ies) reserve the right to witness the Commercial Operation Test for Emission Control Systems.	COD tests of TPPs, provision should also be there in case of Emission Control Systems for Beneficiary(ies) iv) The amended Tariff Regulations should have provision for detailed procedure for Commercial Operation Test of Emission Control Systems.
3(73)(aa)	‘Useful Life’ in relation to a unit of a generating station, integrated mines, transmission system and communication system from the date of commercial operation shall mean the following:	‘Useful Life’ in relation to a unit of a generating station, integrated mines, transmission system and communication system from the date of commercial operation shall mean the following: (aa) Emission Control System for a Coal/Lignite based thermal generating station : 35 Years [Suggested New Insertion]	As there will be new asset addition incurring capital expenditure, useful life for the same should be defined in the amended Regulations.
9(1) 4 th Proviso	Provided also that the generating company shall file an application for determination of supplementary tariff for the emission control system installed in the coal or lignite based thermal generating station in accordance with these regulations not later than 60 days from the date of operation of such emission control system.	Provided also that the generating company shall file an application for determination of supplementary tariff for the emission control system installed in the coal or lignite based thermal generating station in accordance with these regulations not later than 60 days from the date of commercial operation of such emission control system.	Since the emission control system is put to commercial use after such date, the term should be modified as ‘Date of Commercial Operation’ or ‘CODE’ in line with Regulation 3(15): ‘Date of Commercial Operation’.
15(1)	Capacity Charges: The capacity charges shall be derived on the basis of annual fixed cost. The Annual Fixed Cost (AFC) of a generating	Capacity Charges: The capacity charges shall be derived on the basis of annual fixed cost. The Annual Fixed Cost (AFC) of a generating	

	station or a transmission system including communication system based on capital cost shall consist of the following components: (a) Return on equity; (b) Interest on loan capital; (c) Depreciation; (d) Interest on working capital; and (e) Operation and maintenance expenses: [New Insertion]	station or a transmission system including communication system based on capital cost, as determined by the Commission , shall consist of the following components: (a) Return on equity; (b) Interest on loan capital; (c) Depreciation; (d) Interest on working capital; and (e) Operation and maintenance expenses:	
15(2)	Supplementary Capacity Charges: Supplementary capacity charges shall be derived on the basis of the Annual Fixed Cost for emission control system (AFC _e). The Annual Fixed Cost for the emission control system based on capital cost shall consist of the components as listed at (a) to (e) of Clause (1) of this Regulation. [New Insertion]	Supplementary Capacity Charges: Supplementary capacity charges shall be derived on the basis of the Annual Fixed Cost for emission control system (AFC _e). The Annual Fixed Cost for the emission control system based on capital cost, as determined by the Commission , shall consist of the components as listed at (a) to (e) of Clause (1) of this Regulation.	
23(iii)	Where the emission control system is installed, the norms of initial spares specified in this regulation for coal or lignite based thermal generating station as the case may be, shall apply. [New Insertion]	Reg.-23: Initial Spares: Initial spares shall be capitalised as a percentage of the Plant and Machinery cost, subject to following ceiling norms: (aa) Emission Control System - 1.0%	i). As per Reg.-23, ceiling norms for Initial spares for capitalisation for Coal-based/lignite-fired thermal generating stations is set at 4% of the Plant and Machinery cost. ii). The above ceiling limit is set at a higher percentage due to large no of dynamic (rotating) equipments/parts in case of Coal-based/lignite-fired thermal generating station, which is expected to be much lower in case of

			Emission Control System due to its limited machinery. iii). Moreover, no recommendation by OEMs on Initial Spares has reflected in the Draft Regulations. iv). Therefore, the above ceiling norms should be limited to a realistic figure of 1%.
30(2) 1 st Proviso	Return on equity shall be computed at the base rate of 15.50% for thermal generating station, transmission system including communication system and run-of river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run-of river generating station with pondage:	<u>Provided that return on equity in respect of capital cost on account of installation of Emission Control System, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or in the absence of actual loan portfolio of the generating station, the weighted average rate of interest of the generating company as a whole or MCLR of SBI, whichever is minimum, shall be considered;</u> [Suggested New Insertion]	i). The additional expenses have no risk of getting return as the PPAs are already in place and the plants are in operation. Rather, it is a help in disguise, due to the fact that the recovery of revenue is assured. ii). The Generator has to mandatorily comply to the revised Norms for Emission notified by MoEFCC, therefore it's the obligation of the Generator and not an additional business for the Generator for which it should be allowed any profit in lieu of its obligations. iii). Further, as per Regulation 63 of the principal Regulations, the Generator is allowed the proceeds of carbon credit from approved emission reduction projects under Clean Development Mechanism. This credit amount may be adjusted for reduction in Fixed Cost of the Environment Control System. iv). Lending rates of financial institutions/banks are decreasing day by day. Therefore, in order to safeguard the interest of the consumers RoE should have an upper capping limit of MCLR of SBI, which is a proven identifier of the current market lending rate.
30(2) 1 st 2nd Proviso	Provided that return on equity in respect of additional capitalization after cut-off date beyond the original scope	Provided that return on equity in respect of additional capitalization after cut-off date beyond the original scope shall	Justification: As provided above against 1 st Proviso to Regulation 30(2).

	excluding additional capitalization due to Change in Law shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system or in the absence of actual loan portfolio of the generating station or the transmission system, the weighted average rate of interest of the generating company or the transmission licensee, as the case may be, as a whole, shall be considered; [Proposed Modification]	be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system or in the absence of actual loan portfolio of the generating station or the transmission system, the weighted average rate of interest of the generating company or the transmission licensee, as the case may be, as a whole or MCLR of SBI, whichever is minimum, shall be considered;	
30(3)	The return on equity in respect of additional capitalization due to emission control system shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or in the absence of actual loan portfolio of the generating station, the weighted average rate of interest of the generating company as a whole shall be considered; [New Insertion]	The return on equity in respect of additional capitalization due to emission control system shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or in the absence of actual loan portfolio of the generating station, the weighted average rate of interest of the generating company as a whole or MCLR of SBI, whichever is minimum, shall be considered;	Justification: As provided above against 1st Proviso to Regulation 30(2).
32(5)(a)	The rate of interest on loan for emission control system shall be the weighted average rate of interest of actual loan portfolio of the emission control system	The rate of interest on loan for emission control system shall be the weighted average rate of interest of actual loan portfolio of the emission control system or in	Justification: As provided under 1st Proviso to Regulation 30(2)

	or in the absence of actual loan portfolio, the weighted average rate of interest of the generating company as a whole shall be considered. [New Insertion]	the absence of actual loan portfolio, the weighted average rate of interest of the generating company as a whole or MCLR of SBI, whichever is minimum, shall be considered.	
33(9)	The depreciation of the emission control system shall be computed from its date of operation for the balance useful life or extended life of the generating station, as the case may be. [New Insertion]	The depreciation of the emission control system shall be computed from its date of operation for the balance useful life or extended life of the generating station, as the case may be, <u>considering the useful life of such Coal/Lignite based Thermal Power Generating Station as 35 (Thirty Five) Years, with due consent from the Beneficiary(ies) Provided that in case Beneficiary(ies) do not agree to continue for the additional 10 years, then the Generator may sell it in Power Market as Merchant Power.</u>	In this connection, the consultation paper of CERC on 'Terms and Conditions of Tariff Regulations for Tariff Period 2019-24' may be referred, as per which it has been recommended that the life of the Thermal Generating Station should be specified as 35 Years. The life period of some existing Thermal Power Stations is on the verge of completion and it is also uncertain that same will be extended for further period. Therefore, if the Emission Control Systems will be installed in those Coal/Lignite based Thermal Generating Stations, it will be a loss of national property as the Emission Control Systems has also to be retired prematurely. Further, the Consumers will be heavily loaded due to recovery of the cost of the Emission Control System within a very short period through recovery of depreciation cost. It is therefore, submitted that Hon'ble CERC may consider the life period of such Coal/Lignite based Thermal Power Plants as 35 Years, with acceptance of the Beneficiaries, so that at least 10 years of balance life period can be made available for utilization of the Emission Control System with reasonable burdening of the annual fixed cost on the consumers. In case, the Beneficiary(ies) do not agree to continue for the additional 10 years, then the Generator should sell

			it in Power Market as Merchant Power. Further, only the plants having more than 15 years of balance life should be allowed for installation of Emission Control System.
34(aa)	Interest on Working Capital: For emission control system of coal or lignite based thermal generating stations: (i) Cost of limestone or reagent towards stock for 20 days corresponding to the normative annual plant availability factor; (ii) Receivables equivalent to 45 days of supplementary capacity charge and supplementary energy charge for sale of electricity calculated on the normative annual plant availability factor; (iii) Operation and maintenance expenses in respect of emission control system for one month; (iv) Maintenance spares @ 20% of operation and maintenance expenses in respect of emission control system. [New Insertion]	Interest on Working Capital: For emission control system of coal or lignite based thermal generating stations: (i) Cost of limestone or reagent towards stock for 20 days corresponding to the normative annual plant availability factor or the maximum limestone/reagent stock storage capacity of the generating station whichever is lower; (ii) Receivables equivalent to 45 days of supplementary capacity charge and supplementary energy charge for sale of electricity calculated on the normative annual plant availability factor; (iii) Operation and maintenance expenses in respect of emission control system for one month; (iv) Maintenance spares @ 20% 5% of operation and maintenance expenses in respect of emission control system.	i) Cost of limestone or reagent towards determination of Interest on Working Capital should be limited to stock for 20 days corresponding to the normative annual plant availability factor or the maximum limestone/reagent stock storage capacity of the generating station whichever is lower. ii) Due to large no of dynamic (rotating) equipment/parts in case of Coal-based/lignite-fired thermal generating stations, calculation of Interest on Working Capital on account of maintenance spares to the extent of 20% of operation and maintenance expenses for coal/lignite based thermal generating stations should not be applicable to Emission Control System. iii) Therefore, Maintenance spares should be realistically considered @ 5% of operation and maintenance expenses in respect of emission control system for the purpose of Interest on Working Capital.
35(1)(7)	The additional operation and	The operation and maintenance	i) No genesis has been provided for fixing

	maintenance expenses on account of implementation of revised emission standards shall be notified separately: Provided that till the norms are notified, the Commission shall decide the additional O&M expenses on case to case basis. The operation and maintenance expenses on account of emission control system in coal or lignite based thermal generating station shall be 2% of the admitted capital expenditure (excluding IDC & IEDC) as on the date of its operation, which shall be escalated annually at the rate of 3.5% during the tariff period ending on 31st March 2024: Provided that income generated from sale of gypsum or other by-products shall be reduced from the operation & maintenance expenses.	expenses on account of emission control system in coal or lignite based thermal generating station shall be 21% of the admitted capital expenditure (excluding IDC & IEDC) as on the date of its operation, which shall be escalated annually at the rate of 3.5% during the tariff period ending on 31st March 2024: Provided that income generated from sale of gypsum or other by-products shall be reduced from the operation & maintenance expenses.	operation and maintenance expenses on account of emission control system in coal or lignite based thermal generating station to the extent of 2% of the admitted capital expenditure. ii) Further, as per the Explanatory Memorandum, Hon'ble Commission is of the view that due to utilization of common facilities, the increase in Operation and Maintenance Expense may not be significant. iii) Therefore, operation and maintenance expenses on account of emission control system in coal or lignite based thermal generating station should be limited to 1% of the admitted capital expenditure
41(2)	The normative consumption of specific reagent for the various technologies installed for meeting revised emission standards shall be notified separately as specified in Regulations 49 of these regulations.		No genesis has been provided for fixing normative consumption of specific reagent for the various technologies installed for meeting revised emission standards. The same should be obtained from actual data from Pilot Projects which are specific to Indian conditions rather than on any assumed data.
42(2)	Provided that in case of	Provided that in case of	The existing proviso should remain unaltered

Proviso	generating station or unit thereof under shutdown due to Renovation and Modernisation or installation of emission control system , as the case may be, the generating company shall be allowed to recover O&M expenses and interest on loan only.	generating station or unit thereof under shutdown due to Renovation and Modernisation or installation of emission control system , as the case may be, the generating company shall be allowed to recover O&M expenses and interest on loan only.	because: i) In order to fulfill the shortfall in supply by the Generator(s) on account of installation of emission control system, the Beneficiary(ies) may also have to procure the same from the market or other sources even at a higher price, which also need to be taken care of. ii) In order to take care of this, the Generator(s) may provide the same quantum of power to the Discoms by arranging it from other sources.
49(E)(bb)	Auxiliary Energy Consumption (AUX _e) on account of emission control system of thermal generating stations: [New Insertion]		No genesis is provided for fixing the quantum of Auxiliary Energy Consumption as percentage of gross Generation. It is practicable and feasible to adopt the rated consumption parameter of the Emission Control System, as specified/guaranteed by the OEMs instead of the values provided by some plants towards fixing the norm of Auxiliary Consumption for Emission Control System
49(F)	Norms for consumption of reagent: (1)The normative consumption of specific reagent for various technologies for reduction of emission of sulphur dioxide shall be as below: (a) For Wet Limestone based Flue Gas De-sulphurisation (FGD) system: The specific limestone consumption (g/kWh) shall be worked out by following formula: [0.85 x K x SHR x S]/[CVPF x LP] Where,	Norms for consumption of reagent: (1)The normative consumption of specific reagent for various technologies for reduction of emission of sulphur dioxide shall be as below: (a) For Wet Limestone based Flue Gas De-sulphurisation (FGD) system: The specific limestone consumption (g/kWh) shall be worked out by following formula: [0.85 x K x SHR x S]/[CVPF x LP] Where, S = Sulphur content in	1. Vide letter dated 20.02.2019, CEA has stated that “Presently, no relevant operational data is available on DeSox and DeNOx systems in the country. The DeSOx systems are under implementation and pilot studies are underway for suitability of DeNOx system for high ash Indian coals.” 2. As heavy investment is required on account of installation of Emission Control Systems, which is ultimately to be passed on to the consumers through Tariff, selection of Technology for installation of DeSox and DeNOx systems should be carried out only

	S = Sulphur content in percentage, LP = Limestone Purity in percentage, SHR= Gross station heat rate, in kCal per kWh; CVPF = (a) Weighted Average Gross calorific value of coal as received, in kCal per kg for coal based stations less 85 Kcal/Kg on account of variation during storage at generating station; (b) Weighted Average Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic meter, as applicable for lignite, based stations; Provided that value of K shall be equivalent to (35.2 x Design SO2 Removal Efficiency/96%) for units to comply with SO2 emission norm of 100/200 mg/Nm3 or (26.8xDesign SO2 Removal Efficiency/73%) for units to comply with SO2 emission norm of 600 mg/Nm3; Provided further that the limestone purity shall not be less than 85%. (b) For Lime Spray Dryer or Semi-dry Flue Gas Desulphurisation (FGD) system: The specific lime consumption shall be worked	percentage, LP = Limestone Purity in percentage, SHR= Gross station heat rate, in kCal per kWh; CVPF = (a) Weighted Average Gross calorific value of coal as received at colliery end, in kCal per kg for coal based stations less 85 Kcal/Kg on account of variation during storage at generating station; (b) Weighted Average Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic meter, as applicable for lignite, based stations; Provided that value of K shall be equivalent to (35.2 x Design SO2 Removal Efficiency/96%) for units to comply with SO2 emission norm of 100/200 mg/Nm3 or (26.8xDesign SO2 Removal Efficiency/73%) for units to comply with SO2 emission norm of 600 mg/Nm3; Provided further that the limestone purity shall not be less than 85%. (b) For Lime Spray Dryer or Semi-dry Flue Gas Desulphurisation (FGD) system: The specific lime consumption shall be worked out	with sufficient data from pilot projects for Indian Conditions and Indian Coal and should not be experimented on all the Generators with any assumed data. 3. As per recommendation of CEA, GCV is one of the parameters in the following empirical formula for calculation of specific consumption of limestone. As per Cl. No. A(1) of Annexure-1 of CEA recommendations on additional operation norms on implementation of new environmental emission control measures, Specific consumption of limestone = $\frac{K \times \text{Normative heat rate(kcal/kWh)} \times \text{Sulphur content of coal (\%)} \text{ g/kWh}}{\text{GCV of coal (kcal/kg)}}$ As per Regulation 49(F) of Draft CERC (Terms and Conditions of Tariff) (First Amendment) Regulations, 2020, the stage of ‘As received GCV’, CVPF = Weighted Average Gross calorific value of coal as received, in kCal per kg for coal based stations less 85 Kcal/Kg on account of variation during storage at generating station Therefore, as per CERC Tariff Regulations, 2019, Energy Charge Rate (ECR) has to be computed on the basis of Weighted Average Gross Calorific Value or GCV of coal as received, in kCal per kg for Coal based Stations less 85 Kcal/Kg on account of variation during storage at generating station. In the said regulation, GCV ‘as received’ has been defined as the GCV of coal as measured
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	out based on minimum purity of lime (PL) as at 90% or more by applying formula $[0.90 \times 6 / \text{PL}(\%)]$ gm/kWh; (c) For Dry Sorbent Injection System (using sodium bicarbonate): The specific consumption of sodium bicarbonate shall be 12 gm per kWh at 100% purity. (d) For CFBC Technology (furnace injection) based generating station: The specific limestone consumption for CFBC based generating station (furnace injection) at 85% purity limestone (kg/kWh) shall be computed with the following formula: $[62.9 \times S \times \text{SHR} / \text{CVPF}] \times [0.85 / \text{LP}]$ Where S= Sulphur content in percentage, LP = Limestone Purity in percentage, SHR= Gross station heat rate, in kCal per kWh, CVPF = (a) Weighted Average Gross calorific value of coal as received, in kCal per kg for coal based stations less 85 Kcal/Kg on account of variation during storage at generating station; (b) Weighted Average Gross	based on minimum purity of lime (PL) as at 90% or more by applying formula $[0.90 \times 6 / \text{PL}(\%)]$ gm/kWh; (c) For Dry Sorbent Injection System (using sodium bicarbonate): The specific consumption of sodium bicarbonate shall be 12 gm per kWh at 100% purity. (d) For CFBC Technology (furnace injection) based generating station: The specific limestone consumption for CFBC based generating station (furnace injection) at 85% purity limestone (kg/kWh) shall be computed with the following formula: $[62.9 \times S \times \text{SHR} / \text{CVPF}] \times [0.85 / \text{LP}]$ Where S= Sulphur content in percentage, LP = Limestone Purity in percentage, SHR= Gross station heat rate, in kCal per kWh, CVPF = (a) Weighted Average Gross calorific value of coal as received at colliery end, in kCal per kg for coal based stations less 85 Kcal/Kg on account of variation during storage at generating station;	at the unloading point of the thermal generating station. a) In this connection, it is to submit that GRIDCO has filed an Appeal no. 238 of 2017 in APTEL, where it has been argued that the “as received” stage is at the Colliery end as per the terms and conditions of the Fuel supply Agreement between Coal Supplier and Generator. The appeal has already been admitted by APTEL on Dt. 30.10.2017 and is pending for hearing. b) Further, GRIDCO in its views on the Draft CERC Tariff Regulations, 2019 had taken the above stand that GCV ‘as received’ is at colliery end and ECR should be computed on the basis of GCV computed at colliery end. However, Hon’ble CERC has stipulated the stage of “As received’ GCV as determined at Generating station end less 85 kcal/kg on account of variation during storage at generating station. The same stipulation has also been mentioned for calculation of specific consumption of limestone at Regulation 49(F) of Draft CERC (Terms and Conditions of Tariff) (First Amendment) Regulations, 2020, c) After publication of the CERC Tariff Regulations, on Dt. 08.05.2019, CERC has come out with ‘A Terms of Reference’ for “Engagement of Consultant”, in which it is inter-alia stated to ascertain for risk
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	calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic meter, as applicable for lignite, based stations; (e) For Sea Water based Flue Gas Desulphurisation (FGD) system: The reagent used is sea water, therefore there is no requirement for any normative formulae for consumption of reagent. (2) The normative consumption of specific reagent for various technologies for reduction of emission of oxide of nitrogen shall be as below: (a) For Selective Non Catalytic Reduction (SNCR) System: The specific urea Consumption of SNCR system shall be 1.2 gm per kWh at 100% purity of urea. (b) For Selective Catalytic Reduction (SCR) System: The specific ammonia consumption of SCR system shall be 0.6 gm per kWh at 100% purity of ammonia.	(b) Weighted Average Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic meter, as applicable for lignite, based stations; (e) For Sea Water based Flue Gas Desulphurisation (FGD) system: The reagent used is sea water, therefore there is no requirement for any normative formulae for consumption of reagent. (2) The normative consumption of specific reagent for various technologies for reduction of emission of oxide of nitrogen shall be as below: (a) For Selective Non Catalytic Reduction (SNCR) System: The specific urea Consumption of SNCR system shall be 1.2 gm per kWh at 100% purity of urea. (b) For Selective Catalytic Reduction (SCR) System: The specific ammonia consumption of SCR system shall be 0.6 gm per kWh at 100% purity of ammonia.	allocation between the Coal Company, Railways, and the Generating stations for loss of GCV from colliery end to Generating station end. The outcome on the decision of such risk allocation is yet to be published by Hon'ble CERC. d) GRIDCO has also challenged the CERC Tariff Regulations, 2019 in Hon'ble High Court of Orissa with a prayer that the stage of 'GCV as received' should be as determined at colliery end for computation of ECR. The Writ Petition has been admitted by the Hon'ble High Court on Dt.19.12.2019 and pending for hearing. In view of the pendency of the GRIDCO's Appeal/Writ Petition in Hon'ble APTEL and Hon'ble High Court of Odisha & decision of CERC on risk allocation towards loss of GCV from Colliery end to Generating Station end, it is submitted that the GCV for computation of consumption of limestone may be specified as 'GCV as received at colliery end'.
Appendix-1	Depreciation Schedule	Depreciation Schedule of Assets needs to be modified in order to accommodate Emission Control System	Depreciation Schedule for Emission Control System need to be specified to determine schedule of repayment of loans and return on equity.

GRIDCO reserves it right to make any further submissions at the time of Public Hearing by Hon'ble CERC.

Details of Reagent for
Computation of Supplementary Energy Charge Rate

Name of the Petitioner: _____

Name of the Generating Station: _____

Sl.No.	Details	Unit	For preceding 3rd Month (from COD _e)	For preceding 2nd Month (from COD _e)	For preceding 1st Month (from COD _e)
A.	<u>OPENING QUANTITY:</u>				
1	Opening Quantity of Reagent	Tonne			
2	Value of Stock	(Rs.)			
B.	<u>QUANTITY:</u>				
3	Quantity of Reagent supplied by Limestone supply Company				
4	Adjustment (+/-) in quantity supplied made by Limestone or Reagent supply Company				
5	Net quantity of Reagent Received (3±4)				
C.	<u>PRICE:</u>				
6	Amount charged for Reagent supply Company	(Rs.)			
7	Adjustment (+/-) in amount charged made for Reagent supply by the Company	(Rs.)			
8	Total amount Charged (6±7)	(Rs.)			
D.	<u>TRANSPORTATION:</u>				
9	Transportation charges by rail/ship/road transport	(Rs.)			
10	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs.)			
11	Demurrage Charges, if any	(Rs.)			
12	Total Transportation Charges (9±10-11)	(Rs.)			
E.	<u>TOTAL COST:</u>				
13	Total amount Charged for Reagent supplied including Transportation (8+12)	(Rs.)			
14	Weighted Average Cost of Reagent during the month	(Rs/Tonne)			
F.	<u>QUALITY:</u>				
15	Purity of Reagent received during the month	(%)			