CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No.283/MP/2019

Coram:
Shri P.K. Pujari, Chairperson
Shri I.S Jha, Member
Shri Arun Goyal, Member
Shri P. K. Singh, Member

Date of Order: 7th January, 2022

In the matter of:

Petition under Sections 79(1)(b) and 79(1)(f) of the Electricity Act, 2003 read with Clause 4.7 of the Competitive Bidding Guidelines and Article 13 of the Power Purchase Agreements dated 7.8.2008 and 20.1.2009 entered into by Jhajjar Power Limited with Uttar Haryana Bijli Vitran Nigam Limited, Dakshin Haryana Bijli Vitran Nigam Limited and Tata Power Trading Company Limited respectively in relation to seeking compensation for decrease in revenues and increase in the cost as a result of Change in Law events.

And in the matter of:

Jhajjar Power Limited,
Village Khanpur, Tehsil Matenhail,
District Jhajjar,
Haryana – 124142

….Petitioner

Versus

Uttar Haryana Bijli Vitran Nigam Limited (UHBVNL),
Vidyut Sadan, Plot No. C-16, Sector 6,
Panchkula – 134112, Haryana

Dakshin Haryana Bijli Vitran Nigam Limited (DHBVNL),
Vidyut Nagar, Vidyut Sadan,
Hissar – 125005, Haryana

Tata Power Trading Company Limited (TPTCL),
'A' Block, 34, Sant Tukaram Road, Carnac Bunder,
Mumbai – 400006

Tata Power Delhi Distribution Limited,
NDPL House Hudson Lines, Kingsway
Camp, Delhi – 110009 **...Respondents**

Parties Present:
Shri Sajjan Poovayya, Senior Advocate, JPL
Shri Anuj Berry, Advocate, JPL
Shri Deepto Roy, Advocate, JPL
Ms. Anusha Ramesh, Advocate, JPL
Shri Dnyanraj Desai, Advocate, JPL
Shri Shikhar Mehra, Advocate, JPL
Ms. Disha Andhikary, Advocate, JPL
Shri Rakesh Agrawal, Advocate, JPL
Shri M. G. Ramachandran, Senior Advocate, Haryana Utilities
Ms. Anushree Bardhan, Advocate, Haryana Utilities
Shri Nitish Gupta, Advocate, TPDDL
Ms. Parichita Chowdhury, Advocate, TPDDL
Shri Venkatesh, Advocate, TPTCL
Shri Siddharth Joshi, Advocate, TPTCL
Shri Rishub Kapoor, Advocate, TPTCL
Shri Abiprav Singh, Advocate, TPTCL
Ms. Bikita Kaur, JPL
Ms. Sudipta Ghosh, JPL
Shri Vikas Kadian, Haryana Utilities

ORDER

Jhajjar Power Limited (hereinafter to be referred as 'the Petitioner') has filed the present Petition under Sections 79(1)(b) and 79(1)(f) of the Electricity Act, 2003 (in short, 'the Act'), read with clause 4.7 of the Competitive Bidding Guidelines and Article 13 of the Power Purchase Agreements (PPAs) dated 07.08.2008 and 20.01.2009 executed between the Petitioner and the Respondents seeking revision of the Contracted Capacity, Quoted Non-Escalable Capacity Charges and Quoted Net Heat Rate; compensation of costs due to raw material consumption; compensation of costs due to increased operational and maintenance expenses and increased interest on working capital; and compensation of costs due to incremental capital expenditure incurred and to be incurred by the Petitioner for modification, augmentation, retrofitting of the existing Flue Gas De-Sulphurization (FGD) system

(in short, “the Existing FGD”) installed at the generating station and for their operation and maintenance.

2. The Petitioner has made the following prayers:

a) Admit the present Petition;

b) Declare that the Notification amounts qualifies as an event of 'Change in Law' in terms of the PPAs;

c) Restore the Petitioner to the same economic condition as it was prior to occurrence of the Change in Law Event by permitting the Petition to claim the amounts as per the computations set out in hereinabove or through a suitable mechanism to compensate the Petitioner for the financial impact of the Changes in Law Event;

d) Revise the Contracted Capacity under Discom PPA from 1113.50 MW to 1101.620 MW for Respondent 1 and Respondent 2 (i.e. 550.810 MW each) and from 123.72 MW to 122.402 MW under TPTCL PPA as is set out in paragraph 61 above.;

e) Direct the Respondents to undertake all actions required to record the Revised Contracted Capacity, including, if required, executing amendment agreements to the PPAs;

f) Declare that that the commencement date for the Revised Contracted Capacity be the date from which the Petitioner starts making daily declarations as per the Revised Contracted Capacity, basis the final order of this Hon’ble Commission in this Petition and such Revised Contracted Capacity will be applicable for the entire term of the PPAs;

g) Revise the QNECC, as per the formula provided at paragraph 62 (i.e. QNECC1 = 1.0108 x QNECC), starting from the Contract Year 2019-20 for the term of the PPAs and declare that the commencement date of the revised QNECC will be the date on which the Revised Contracted Capacity becomes applicable under PPAs (refer to paragraph (D) above) and such revised QNECC will be applicable for the entire term of the PPAs;

h) Revise the QNHR from 2,396 kcal/kWh to 2,422 kcal/kWh to compensate for the 1% increase in auxiliary consumption at the Plant, which increased auxiliary consumption is due to the Existing FGD being operated on an ongoing basis from 1.4.2018 and declare that the revised QNHR will be applicable for the entire term of the PPAs and that the Petitioner is entitled to the compensation sought by the Petitioner in this regard as set out in paragraphs 63 – 65;

i) Permit the Petitioner to recover compensation for increased auxiliary power consumption by the Plant during the Trial Period in accordance with the principle set out in paragraph 57;

j) Permit the Petitioner to recover, from 01.04.2018 and for the entire term of the PPAs, costs for limestone consumed at the Plant based on the Limestone Consumption Norms and the formula set out in paragraphs 66 and 67 above;

k) Permit the Petitioner to recover compensation for limestone consumption at the Plant during the Trial Period in accordance with the principle set out in paragraph 57;

l) Permit the Petitioner to recover, from 01.04.2018 and for the entire term of the PPAs, costs for water consumed at the Plant based on the Water Consumption Norms and the formula set out in paragraphs 68 and 69 above;

m) Permit the Petitioner to recover compensation for water consumption at the Plant during the Trial Period in accordance with the principle set out in paragraph

n) Permit the Petitioner to recover, from 01.04.2018 and for the entire term of the PPAs, O&M expenses at the rate of 3% of the aggregate capital cost for Existing FGD (as partially capitalized in the books of the Petitioner in 2013-14 and subject to revision in the future on account of capitalisation of the Additional Capital Expenditure with the approval of this Hon'ble Commission), subject to indexation, details of which are set out in paragraphs 73 to 74 above;

o) Recommend a suitable indexation formula for the remaining terms of the PPA for O&M expenses for existing FGD using 2013-2914 as the base year;

p) Permit the Petitioner to recover compensation for the increased O&M expenses at the Plant during the Trial Period in accordance with the principle set out in paragraph 57;

q) Permit the Petitioner to recover, from 01.04.2018 and for the entire term of the PPAs, increased working capital costs as set out in paragraphs 75 - 77 above;

r) Permit the Petitioner to recover compensation for the increased working capital costs during the Trial Period in accordance with the principle set out in paragraph 57;

s) Permit the Petitioner to recover capital expenditure incurred and to be incurred and to be capitalized under Step 1 as set out in paragraph 80 above;

t) Permit the Petitioner and provide an in-principle approval to the Petitioner to proceed with Step 2 activities as per the implementation plan to be submitted by the Petitioner to the Respondents and this Hon'ble Commission as set out in paragraphs 81 to 83 above;

u) Declare that the Petitioner is entitled to recover carrying cost/ interest on all amounts incurred/paid by the Petitioner for ensuring compliance with the Revised Emission Norms from the date of incurrence/ payment of such amounts by the Petitioner till such date as the Petitioner recovers such amounts in their entirety;

v) Allow necessary amendments to the PPAs to account for the aforementioned Change in Law Event and direct the Respondents to execute such necessary amendments;

w) Allow modification/ alternation/ amendment of the Petition/pleadings and/or provide additional information in support of the Petitioner's claim, if necessary; and

x) Pass such further order(s) as this Hon'ble Commission may deem just and proper in the fact and circumstances of the case."

Submissions of the Petitioner

3. The Petitioner has submitted as follows:

a) It is a wholly owned subsidiary of CLP Power India Private Limited (in short, "CLP") and is a generating company as defined in Section 2(28) of the Electricity Act, 2003. It owns and operates a coal-based thermal generating station of 1,320 MW capacity comprising of two units of 660 MW each, at Village Khanpur, Tehsil Matenhail, District Jhajjar, Haryana (in short, "the Plant"). The Plant supplies power to the State of Haryana and the National Capital Territory of Delhi.

b) Haryana Power Generation Corporation Limited (HPGCL), being vested with the rights related to long term power procurement and bulk supply of electricity by the Government of Haryana, was authorized by Respondents 1 and 2 to procure power on their behalf. HPGCL conducted an international competitive bid process as per the 'Guidelines for Determination of Tariff by Bidding Process for Procurement of Power by Distribution Licensees' dated 19.01.2005 (in short, "the Bidding Guidelines") issued by the Ministry of Power, Government of India under Section 63 of the Act, for setting up (design, own, construct, develop, finance, build, engineer, procure, commission, operate and maintain) the Plant as a Case 2 project and supplying 90% of the net power generated from the Plant to the Respondent 1 and Respondent 2.

c) HPGCL issued Request for Qualification dated 25.05.2006 and a draft Power Purchase Agreement attached to the RFP in accordance with the Bidding Guidelines and standard bid documents. HPGCL, vide its letter dated 20.02.2007 also issued an addendum. In the addendum, it was stated that HPGCL would be responsible for organising the source from which coal would be procured and the coal linkage for the Plant. CLP was shortlisted as a qualified bidder, and an RFP dated 24.12.2007 was also issued to CLP.

d) The Bidding Documents did not limit emission of SO_2 at stack to less than 200 mg/Nm^3 nor did they stipulate any requirement for installation of FGD system. Based on the representations and conditions made out by HPGCL in the Bidding Documents, CLP submitted its bid on 10.03.2008, i.e. the "Bid

Deadline". Subsequently, HPGCL incorporated the Petitioner as a special purpose vehicle for setting up the Plant.

e) After the submission of the bid, but prior to the issuance of LOI (letter of intent) and execution of the PPAs, HPGCL obtained an Environment Clearance (EC) dated 24.04.2008 from MOEFCC (Ministry of Environment, Forests and Climate Change of Government of India). The EC did not require the Petitioner to install an FGD system. Also, there was nothing in the Bidding Documents pertaining to emission of SO_2 at stack to less than 200 mg/Nm^3 or any requirement for installation of an FGD system.

f) CLP was declared the successful bidder and HPGCL awarded the project to CLP and issued the LOI dated 23.7.2008. Thereafter, on 07.08.2008, CLP acquired 100% equity shares of the Petitioner and executed a Power Purchase Agreement dated 7.8.2008 (in short, "the Discom PPA") with Respondent 1 and Respondent 2.

g) Under the Discom PPA, the Petitioner was required to supply 556.75 MW (net) each to the Respondent 1 and Respondent 2.

h) Since the Plant fell under the category of mega power projects, it was required under the mega power policy of the Ministry of Power, Government of India that balance 10% of the capacity of the Plant be sold outside the State of Haryana. The Petitioner, therefore, executed a Power Purchase Agreement dated 20.01.2009 (in short, "the TPTCL PPA") with Tata Power Trading Company Limited i.e. Respondent 3 TPTCL has a back to back contract with Tata Power Delhi Distribution Limited (TPDDL) on the same tariff.

i) The EC was amended by the MOEFCC on 16.10.2008 upon request from the Petitioner due to change in technology of the Plant from sub-critical to super-critical. The EC was further amended by MOEFCC on 25.11.2009 on account of change of name of addressee in the EC from HPGCL to the Petitioner.

j) Central Coalfield Ltd (CCL) issued a Letter of Assurance ("LOA") dated 14.10.2008 in favour of the Petitioner wherein, it was clarified that the total coal

requirement for the Plant will be met by CCL based on incremental availability of domestic coal and imported coal. However, the Bidding Documents mentioned that coal linkage for the Plant had been secured and basis the information subsequently provided (including the terms of the EC), the Petitioner had anticipated that the Plant will be operating on coal with sulphur content less than 0.35%. However, through the LOA and other similar communications which followed, the Petitioner came to anticipate that it may be required to use coal with varying sulphur content at the Plant.

k) The EC only provided for a requirement of keeping space for FGD system to be retrofitted, if required at a later date. CLP was aware that incorporating an FGD system at a later date, if required, would result in substantial changes to the Plant, which could result in integration issues with the Plant and may also require the Plant to be shut down for a long period. Further, on account of correspondence with CCL and other governmental authorities, CLP anticipated that there may be instances where, either due to coal shortages or other reasons beyond the control of the Petitioner, coal with excess sulphur content may be provided to the Plant and an FGD system, if installed, could be operated, as and when necessary, i.e., to control SO_2 emissions under special circumstances. For these reasons, CLP decided to install an FGD system even though it was not required to be installed as per the EC. Accordingly, the Petitioner, vide letter dated 16.03.2010 issued to MOEFCC, voluntarily sought permission to install an FGD. In the said letter, the Petitioner specifically stated that the FGD system was being installed to ensure integrity of the main Plant design and, therefore, requested approval for:

> *"1. Installation of wet limestone-gypsum based Flue Gas Desulphurisation (FGD) plant having a sulphur removing efficiency of ~85% for each unit within 3 years of commissioning of the power station with a permissible change in the emission characteristics of gas velocity of 21.6 m/sec at a stack temperature of 52.4o C; and*
>
> *2. Flexibility to operate the FGD as and when required to ensure compliance under EC issued vide letter dated 24th April 2008 are met."*

l) In response to the above-quoted letter of the Petitioner, MOEFCC vide letter dated 11.8.2010 allowed the Petitioner to install FGD system at the Plant and also "welcomed the initiative" taken by the Petitioner to install FGD system

despite the same not being a mandatory condition of the EC. Accordingly, the MOEFCC amended the EC (in short, "the Revised EC").

m) Subsequently, Unit 1 and Unit 2 of the Plant were commissioned on 29.3.2012 and 19.7.2012 respectively. Both Units of the Plant were installed with a wet limestone-based FGD system at the initial capital expenditure of Rs.299.02 crore and the same was commissioned in October 2013.

n) The Petitioner is not seeking reimbursement of capital expenditure of Rs 299.02 crore, incurred in installing the Existing FGD. However, the incremental capital expenditure, impact of increased auxiliary consumption and raw material consumption, increased operational and maintenance expenses, and increased interest on working capital, to be incurred by the Petitioner for complying with the Revised Emission Norms should be compensated under Change in Law in terms of both PPAs.

o) MOEFCC vide Notification issued "the Revised Emission Norms" on 07.12.2015 and amended the standards of emissions of SO_2 to less than 200 mg/Nm^3 (measured on a dry basis at 6% O_2). The Revised Emission Norms were to be followed by all existing as well as future thermal power plants.

p) The Notification mandated that all thermal power plants should comply with the Revised Emission Norms within a period of two years from the date of the Notification dated 07.12.2015. Based on the concerns raised by various thermal power plants with respect to the practical difficulties in meeting the deadline of two years specified in the Notification, MOEFCC assigned the Central Electricity Authority ("CEA") with the task of working with various power plants to develop a plan for implementation of the Notification. CEA was also required to provide technical support to the power plants for ensuring compliance with the Revised Emission Norms. Accordingly, CEA was given the responsibility of preparing the phasing plan for the identified units in the Northern Region and submitting the final plan to the Northern Region Power Committee ("NRPC").

q) In furtherance of the above, the 36th meeting of the Technical Coordination Committee ("TCC") of the NRPC was held on 14.09.2017, wherein

the manner of complying the Revised Emission Norms was discussed. Based on interactions with various power plants, a phasing plan for implementation of the Notification was developed ("FGD Phasing Plan"). In the said meeting, the Petitioner had informed the members of TCC that the Existing FGD cannot achieve SO_2 emission levels set out in the Revised Emission Norms on continuous basis. As such, the Petitioner sought an extension of timeline: (A) for augmentation of the Existing FGD; (B) to build redundancies in critical components/ equipment and auxiliaries to ensure continuous operation of the Existing FGD; and (C) to conduct trial runs to test the adequacy of the operating systems and processes of the Existing FGD to operate continuously on a long-term basis and in a reliable manner in compliance with the Revised Emission Norms. Furthermore, in addition to assisting the Petitioner in identifying the limitations of the Existing FGD, the trial runs also assisted in stabilising processes and equipping the relevant manpower at the Plant to operate the Existing FGD on a continuous basis.

r) TCC shifted the Plant from the list of power plants already having FGD to the list of power plants that ought to be covered under the FGD Phasing Plan. Further, as per the FGD Phasing Plan, the Petitioner was granted time till 31.01.2019 to ensure that it was in strict adherence with the Revised Emission Norms.

s) In furtherance of the above, Central Pollution Control Board ("CPCB") vide notification dated 11.12.2017 directed the Petitioner to install an FGD system by 31.01.2019. As per the FGD Phasing Plan notified by CEA, the Revised Emission Norms with respect to SO_2 were to be met by the Petitioner from 1.2.2019. Based on these norms, the Petitioner was required to maintain the SO_2 emissions at exhaust stack at a level below 200 mg/Nm^3 (dry basis at 6% O_2) on a continuous basis during operations, as opposed to the earlier situation where the Petitioner was required to operate FGD system as and when necessary, i.e. to control SO_2 emissions under special circumstances and there were no emission norms with which the Petitioner had to comply.

t) CEA published the Standard Technical Specification for Wet Limestone based FGD in December 2017 and revised those in October 2018 ("CEA

Standards"). The CEA Standards recommend that FGD system should have design capability to operate continuously on a long-term basis and in a reliable manner with adequate redundancies, and further maintain the stack exhaust levels at < 150 mg/Nm^3 (dry basis at 6% O_2), with SO_2 concentrations at inlet of FGD of 1800 mg/Nm^3 (wet basis), for coal having Sulphur content of 0.5%.

u) In order to operate the Existing FGD on continuous basis in compliance with the Revised Emission Norms from 01.02.2019, the Petitioner undertook substantial maintenance work commencing from 01.04.2018 until 31.01.2019 ("Trial Period"), some refurbishment work and also conducted extensive trial runs of the Existing FGD. The objective of these trial runs was to test the adequacy of the operating systems and processes of the Existing FGD to operate continuously on a long-term basis and in a reliable manner in compliance with the Revised Emission Norms. Based on these trial runs, the CEA Standards issued in December 2017 and consultations with external technical experts and original equipment manufacturer, the Petitioner discovered the constraints of the Existing FGD which would hamper its continuous operation and also identified certain modifications required to be made to the Existing FGD to improve its reliability, availability and SO_2 removal efficiency. Moreover, the trial runs also assisted in stabilising processes and equipping the relevant manpower at the Plant to operate the Existing FGD on a continuous basis. The Existing FGD needed improvement in:

a) reliability of the FGD system;
b) availability of the FGD system; and
c) SO_2 removal efficiency as per the CEA Standards.

v) Enhancing of SO_2 removal efficiency involves complexities of re-designing and implementation, which would need to be done on a long-term basis. As far as reliability of the FGD system and availability of the FGD system is concerned, it was less complex and could be implemented by the Petitioner in the near future whereas some improvements were urgent in nature and had to be immediately implemented by the Petitioner.

w) The Petitioner has also approached CEA in relation to the actions to be taken by the Petitioner to address the shortcomings in the Existing FGD. CEA

vide letter dated 29.03.2019 informed the Petitioner that the guiding norms for installation of FGD systems has been uploaded to the CEA's website and the Petitioner may approach their concerned regulator for the future course of action in this regard.

x) Thus, as a consequence of introduction of the Revised Emission Norms, the Petitioner is required to modify, augment and retrofit the Existing FGD and operate it on a continuous basis. Consequently, the Petitioner / Plant has been and will:

i. Incur reduction in the Contracted Capacity and incur costs as a consequence of increased heat rate of the Plant due to increased auxiliary consumption;

ii. Incur additional expenditure for procuring raw materials for operating the Existing FGD and increased waste and contaminated water disposal costs on a continuous basis;

iii. Incur significant O&M expenses on a continuous basis;

iv. Incur additional working capital costs on a continuous basis; and

v. Incur additional capital expenditure for increasing reliability, availability and SO_2 removal efficiency of the Existing FGD.

y) As on the Cut-Off Date of PPAs, there were no norms/ standards specified that limited, inter alia, emission of SO_2 at stack, to less than 200 mg/Nm^3 nor were there any prevailing norms/ standards requiring installation of an FGD system. The Revised Emission Norms dated 07.12.2015 of MOEFCC were issued after the Cut-Off Date of PPAs. Therefore, this Notification amounts to a Change in Law as defined in the PPAs ("Change in Law") and, as specified in the PPAs, the Petitioner is entitled to be compensated, for the costs incurred and to be incurred by it, so that the Petitioner is placed in the same economic position as if such "Change in Law" had not occurred.

z) The Commission in its order dated 17.9.2018 in Petition No. 77/MP/2016 has held that on account of the Notification dated 07.12.2015 of

MOEFCC, the Petitioner therein is affected by change in law in respect of change in norms for SO_2, Nitrogen Oxide, requirement for installation of cooling tower system and norms on restriction of water consumption in terms of Article 13 (change in law) of the power purchase agreement. Similarly, the Commission vide order dated 08.10.2018 in Petition No. 133/MP/2016 has held that the Notification prescribing revised environmental norms in respect of thermal power plants which have been issued after the cut-off dates of Sasan ultra mega power plant is change in law in terms of the power purchase agreement.

aa) During the Trial Period, the Petitioner undertook extensive maintenance work and some refurbishment work on the Existing FGD, including procuring new spare parts in substantial quantities. Further, the Petitioner also conducted extensive trial runs on the Existing FGD so as to test the adequacy of the operating systems and processes of the Existing FGD to operate continuously on a long-term basis and in a reliable manner in compliance with the Revised Emission Norms. During these extensive trial operations, the Petitioner has incurred substantial operating expenses wherein Unit 1 FGD was operated for 2187 hours and Unit 2 FGD was operated for 2693 hours. All these actions were preparatory in nature and were undertaken solely to enable the Petitioner to get ready for continuous operation and these actions would not have been required to be undertaken if the Existing FGD was to be continued to be operated for controlling SO_2 emissions under special circumstances as originally envisaged. Further, from 01.02.2019 onwards, the Petitioner has been continuously operating the Existing FGD in compliance with the Revised Emission Norms and has been incurring costs related to increased auxiliary and raw material consumption, increased operational and maintenance expenses and costs related to working capital.

bb) Operating the Existing FGD on a continuous basis has resulted in increased consumption of auxiliary power at the Plant, at the rate of 1% of the gross installed capacity of each Unit of the Plant (i.e., an aggregate increase of 13.2 MW for the Plant). Such 1% increase in the auxiliary consumption is in line with the design specifications manual of M/s. Spic Yuanda, the original

equipment manufacturer and the supplier of the Existing FGD and is also in line with the CEA norms for auxiliary consumption in FGD (without gas-gas heater) titled “Norms for Installation of FGD for New Environmental Regulations” dated 07.12.2015.

cc) As a consequence of increased auxiliary consumption at the Plant, there is a corresponding reduction in the Contracted Capacity deliverable by the Petitioner. Consequently, the Annual Capacity Charges recoverable by the Petitioner under the PPAs will get reduced to such extent. Further, the Petitioner also incurred costs on account of the Plant being able to dispatch less energy though it consumes the same amount of fuel (i.e., heat rate of the Plant increases).

dd) 1% increase in the auxiliary consumption at the Plant will result in a reduction in the Contracted Capacity. Further, Under the PPAs, “Annual Capacity Charges” is defined as the product of Normative Generation, expressed in Million Units (MU) and QNECC. The Petitioner is entitled to recover 100% of the Annual Capacity Charges in each Contract Year when it declares 80% of Contracted Capacity (“Normative Generation”) to the Respondents under respective PPAs. Since there is a reduction in the Contracted Capacity due to increase in auxiliary consumption at the Plant, the capacity (in MU) derived from 80% of the Revised Contracted Capacity (“Revised Normative Generation”) will be less, resulting in under-recovery of Annual Capacity Charges. Therefore, to compensate the Petitioner for such under-recovery, QNECC has to be increased correspondingly.

ee) The Plant is a Case 2 project and the PPAs provide for pass through of fuel cost at Quoted Net Heat Rate (“QNHR”). The Energy Charge per kWh derived from the Revised QNHR at the delivered cost of coal at site correctly reflects the cost of fuel consumed to produce each unit (kWh) delivered to the Respondents under their respective PPAs after consumption of auxiliary power (including the additional auxiliary power required to operate the Existing FGD on a continuous basis). QNHR has to be increased to compensate for the additional fuel consumed for producing the increased auxiliary power required to operate the Existing FGD to comply with the Revised Emission Norms.

ff) It will require limestone (95% $CaCO_3$) with standard specifications for the Existing FGD to absorb the SO_2 produced from coal. This limestone will be sourced from the Indian market through tendering process. As per the design specifications manual of M/s. Spic Yuanda, the original equipment manufacturer and the supplier of the Existing FGD, the limestone consumption would be 8.8 tonne per hour for the Plant.

gg) The Plant requires 280 m^3/hr of additional clarified water as make-up water to operate the Existing FGD on a continuous basis in compliance with the Revised Emission Norms. Therefore, the Petitioner is entitled to compensation for the cost of additional water consumed at the Plant based on the Water Consumption Norms.

hh) SO_2 absorbed by the limestone slurry at the Existing FGD results in production of by-product/ waste product of chemical nature on continuous basis. The Petitioner has to dispose such waste products regularly. In the absence of quality standards, defined usage etc., the Petitioner has to incur costs for disposing the waste products in accordance with the relevant MOEFCC norms. FGD continuously produces ~17 m^3/hour of chemically contaminated water which has to be treated in accordance with the relevant MOEFCC norms prior to disposal. Due to uncertainties in dealing with by-product and contaminated water produced from FGD, the Petitioner is not able to forecast the expenses to be incurred to dispose the waste products and contaminated water. Therefore, the Petitioner, at this stage, is not seeking compensation in this regard.

ii) Since FGD involves handling of chemical substances which are highly corrosive in nature, the Petitioner will be required to undertake Plant and equipment maintenance at more frequent intervals. Consequently, the Petitioner will incur significant additional repair and maintenance expenses on recurring basis to ensure that FGD system continues to be operational on a continuous basis in compliance with the Revised Emission Norms. The additional maintenance work for ensuring continuous operation of the Existing FGD would require significant staff engagement and periodic engagement of external service providers, including OEMs.

jj) On account of the increased operation and maintenance activities from 01.04.2018, the Petitioner estimates the annual operation and maintenance expenses of the Existing FGD to be incurred at the rate of 3% of the total capital cost of the Existing FGD {i.e., (initial capital expenditure of Rs. 299.02 crores capitalized in 2013-14) + (additional capital expenditure to be capitalized in future with the approval of this Commission)}.

kk) Further, escalation on such increased O&M expenses, with 2013-14 as base year, may be approved by this Commission using the WPI (wholesale price index)/ CPI (consumer price index) indexation. The Petitioner may be permitted to recover full O&M expenses at 80% annual Availability Factor (as defined in the PPAs) during each contract year, provided that if the Plant achieves less than 80% annual Availability Factor (as defined in the PPAs) in any contract year, the Petitioner may be permitted to recover the O&M expenses on pro-rata basis.

ll) The continuous operation of the Existing FGD in compliance with the Revised Emission Norms has impacted working capital requirements of the Plant, and the interest payable thereon. Therefore, the Petitioner is entitled to recover full increased working capital costs at 80% annual Availability Factor (as defined in the PPAs) during each contract year, provided that if the Plant achieves less than 80% annual Availability Factor (as defined in the PPAs) in any contract year, the Petitioner is entitled to recover the working capital costs on pro-rata basis.

mm) The table below summarizes the various components basis which the Petitioner has claimed additional interest on working capital:

Sr. No.	Working Capital Components	Methodology of Computing Compensation
1.	O&M Expenses	1 Month O&M Expenses
2.	Water Expenses	1 Month Water Charges at normative capacity
3.	Maintenance spares Expenses	20% of O&M Expenses
4.	Limestone Expenses	20 Days Stock + 1 Month Advance for consumption at normative capacity

Sr. No.	Working Capital Components	Methodology of Computing Compensation
5.	Receivables for Additional Expenses	45 Days of total receivables due to FGD Change in Law

nn) The Petitioner estimates interest on working capital to be incurred for FGD operation at the State Bank of India marginal cost lending rate + 2% and this is required to be collected for each month as a part of the monthly bill for FGD system.

oo) The components of the increased revenue expenditures along with the methodology of computing the compensation, is as under:

Sr. No.	Components of Increased Revenue Expenditure	Methodology of Computing Compensation
1.	Increase in Auxiliary Consumption	(i) Revision of Contracted Capacity and QNECC (ii) Revision of QNHR
2.	Increase in Consumption of Raw Material and Waste Disposal Costs	
(a)	Limestone	As per LCN
(b)	Water	As per WCN
(c)	Waste Disposal Costs	Not seeking compensation at this stage
3.	O&M Expenses	3% of Aggregated Capex with WPI/CPI Indexation
4.	Interest on Working Capital	State Bank of India marginal cost lending rate + 2%

pp) The Existing FGD can be operated by the Petitioner in compliance with the Revised Emission Norms after augmenting the Existing FGD to increase its reliability, availability and SO_2 removal efficiency, provided that the coal received by the Petitioner has Sulphur content as mentioned in the EC (as amended by the Revised EC). The Petitioner has adopted a two-step plan of action to address these issues, which has resulted in and will result in the Petitioner incurring additional capital expenditure.

Sr. No.	Item description	Estimated Amount	Remarks
		(₹ crore)	
1	Covered Limestone & Gypsum Storage Areas	2.23	Installation completed or close to completion
2	CEMS up gradation	1.1	

Sr. No.	Item description	Estimated Amount	Remarks
3	Sulphur Analyser	0.27	
4	Permanent platforms and approaches for FGD	1.21	The works are in progress to make egress and access safer for O&M
5	ID fan & Motors Up gradation	15.15	Installation of the ID fans will be aligned with respective Unit outages. Existing ID Fans are required to be replaced by a new design having anti-stalling feature. There are 2 Fans & 2 Motors in a Boiler. Since ID Fan & motor have a long lead time (10 months), the Petitioner has placed an order for 2 Fans and Motors on the Original Equipment Manufacturer. These fans and motors will be installed in the Unit 2 in its scheduled outage of 2019. ID fans and motors for Unit 1 whose outage is scheduled in mid-2020 is being ordered on OEM.
6	Modification of Emergency Slurry Storage Tank as Lime Slurry storage tank cum emergency slurry tank	2.1	Work is in progress. The existing tanks don't have reasonable buffer capacity to facilitate maintenance of limestone processing equipment. This can lead to unit outage in case of failure of any equipment associated with limestone processing unit.
7	Waste Gypsum storage dyke	3.11	Work is to be initiated on these items
8	1 number screw compressor with dryer	1.83	
9	New Lime grinding and slurry preparation stream installation with accessories	16	
10	Construction of drainage system in WFGD area	0.73	
11	Contingency (5%)	2.19	
Total		46.03	

qq) The CEA Standards specify that FGD system should have design capability to maintain SO_2 emission at the stack exhaust levels at less than 150 mg/Nm^3 (dry basis at 6% O_2), when coal having Sulphur content of 0.5% is burnt in the boiler (Section 2.4.1 of CEA Standards). Though the Plant is

expected to receive domestic coal with Sulphur content less than 0.35% and operate on this basis, in the past, due to significant coal shortages, the Petitioner, with the permission of the Respondent 1 & Respondent 2, as required under the Discom PPA, has used coal from other sources. Thus, as of the date of this Petition, the coal used for operating the Plant is being received from various sources. The quality of coal, including the Sulphur content of the coal supplied under the Government of India coal linkage, is not under the control of the Petitioner. Hence, going forward, the Petitioner may be required to use coal with higher Sulphur content. High Sulphur levels in coal may result in higher SO_2 influx at the inlet of the Existing FGD and in such circumstances, the capacity of the Existing FGD and its efficiency to remove SO_2 will not be sufficient to meet the Revised Emission Norms.

rr) Accordingly, the Petitioner is currently undertaking analysis and assessing the modifications to be made to the Existing FGD to meet the Revised Emission Norms considering Sulphur content in coal as prescribed in the CEA Standards. The actions proposed to be taken by the Petitioner are as under:

i. Preparing the tender documents to seek appropriate technological solutions for retrofitting the Existing FGD to meet input parameters for the FGD system (as per CEA Standards) and the output parameters for FGD system (as per CEA Standards);

ii. Invite techno-commercial offers under international competitive bidding;

iii. Evaluate the best techno-commercial bids submitted in response to the international competitive bidding conducted by the Petitioner;

iv. Enter into contractual arrangements with the selected bidder to undertake retrofitting of the Existing FGD;

v. Produce implementation plan and obtain approvals from the Respondents for Plant shutdown, as and when required to implement the retrofitting of the Existing FGD;

vi. Recommission the FGD system upon completion of retrofitting such that the FGD system is fully operational and the asset is capitalised;

vii. Undertake any other actions (including obtaining approvals from relevant government authorities) which may be required to be undertaken by the Petitioner in this regard; and

viii. Approach this Commission once again for approval for costs incurred and seeking compensation and relief under Change in Law provision of the PPAs.

ss) During the implementation, there will be outages resulting in complete Unit(s) shutdown. The Respondents may be directed to permit the Petitioner to undertake outage(s) based on the implementation plan submitted by the Petitioner. Further, the Plant should be deemed 'available' during such outage(s) and the Respondents should be required to pay Capacity Charges to the Petitioner such that the Petitioner is able to recover the Annual Capacity Charges for the said contract year.

tt) The summary of the capital expenditure incurred initially and to be incurred for modifications and retrofitting of the FGD system are as under:

Capital Expenditure Summary	Amount (in INR Crores)
Initial Capital Expenditure	299.02 This expense is not being claimed as Change in Law
Step 1: Modifications aimed at improving availability & reliability	46.03
Step 2: Retrofitting aimed at improving SO_2 removal efficiency.	To be Initiated.

uu) The capital expenditure to be incurred will not exceed the norms prescribed by CEA in the *"Norms for Installation of FGD for New Environmental Regulations"* dated 7.12.2015.

vv) The Petitioner has approached this Commission for seeking to incur capital costs in relation to Step 1. These costs will be capitalized by the Petitioner and upon capitalization of the costs and submission of requisite documents, the Petitioner should be compensated for the same in accordance

with Article 13.2(b) of the PPAs. In case of Step 2, the Petitioner is seeking compensation for the capital expenditure incurred by the Petitioner.

ww) Both the PPAs (the Discom PPA and the TPTCL PPA) entered into by the Petitioner provide for relief in case of a "Change in Law". Article 13 of the PPAs provide that a party impacted by a 'Change in Law' event should be restored to the same economic position as if such 'Change in Law' had not occurred. As per Article 13.2 of both PPAs, determination of the consequence of Change in Law Event, ought to have due regard to the principle that the fundamental purpose of compensating the party affected by such Change in Law Event, is to restore through monthly tariff payments, the affected Party to the same economic position as if such Change in Law Event has not occurred.

xx) Article 13.2(b) of both PPAs provide for determination of impact of a Change in Law Event occurring during the "Operation Period" (defined as the period between COD (as defined under the relevant PPA) and the date of expiry or earlier termination of the PPAs in accordance with their respective terms). Under both PPAs, compensation for Change in Law during the Operation Period is payable subject to the condition that increase/ decrease in revenues or cost to the Petitioner is in excess of an amount equivalent to one percent (1%) of the Letter of Credit (as defined in the relevant PPA) in aggregate for a Contract Year.

yy) The increase/ decrease in revenues and costs to the Petitioner on account of issuance of introduction of the Revised Emission Norms is in excess of the said threshold for the Contract Years, commencing from Contract Year 2018-19.

zz) The notification of the Revised Emission Norms was through the Notification of MOEFCC, which is a Ministry under the Government of India and, therefore, an "Indian Government Instrumentality" as defined under the PPAs.

aaa) The EC in respect of the Plant that was obtained on 24.04.2008 (as modified on 16.10.2008, 25.11.2009 and 11.08.2010) was being duly complied with by the Petitioner. Moreover, the Petitioner, from time to time, had also

obtained certain other permissions, such as the consent to operate from the Haryana Pollution Control Board.

bbb) If the Petitioner had not installed the Existing FGD, then as of date of this Petition, the Petitioner would be required to spend a minimum amount of Rs. 488 crore plus taxes in reference to CEA's 'Norms for Installation of FGD for New Environmental Regulations' dated 7.12.2015.

ccc) The Petitioner issued a notice dated 27.07.2016 to the Respondents, vide which the Petitioner apprised them that the Plant had been operating as per the prevailing norms, and that it was not adequately equipped to comply with the Revised Emission Norms. Further, the Petitioner intimated that in order to comply with the Revised Emission Norms, the Existing FGD would require certain modifications to increase reliability, availability and SO_2 removal efficiency owing to which the Petitioner would be incurring substantial additional costs. The Petitioner accordingly stated that owing to the fact that the Revised Emission Norms constituted a 'Change in Law' event under the PPAs, the said additional expenses ought to be compensated to the Petitioner.

ddd) In addition to the above, the Petitioner issued a notice dated 13.12.2018 to HPPC, wherein the Petitioner yet again apprised the Respondents about the 'Change in Law' event that has occurred.

eee) Vide the above notice, the Petitioner informed the Respondents that it was in the process of filing a petition before this Commission in accordance with the provisions of the PPAs. Additionally, the Petitioner stated that it would seek compensation, inter alia, for the following cost heads:

i. Additional capital costs including refurbishment and recommissioning & other related expenditure incurred up to January 2019.
ii. Loss of availability due to shutdown of units for FGD related activities
iii. Revision of Net Contracted Capacity
iv. Increase of Quoted Non-Escalable Capacity Charge
v. Increase of Net Quoted Heat Rate
vi. O&M Norms & Annual O&M Expense compensation for FGD operations

fff) The Respondents, vide letters dated 31.01.2019 and 05.02.2019 have not denied or refuted any of the claims made by the Petitioner, including that the Revised Emission Norms amount to a 'Change in Law' under the PPAs and have expressly taken the view that this Commission ought to decide the costs/ compensation payable to the Petitioner.

ggg) Thus, in view of the above, the following Change in Law relief should be allowed to the Petitioner:

Elements of Reliefs/ Compensation Claims	Methodology of Computing Compensation	Frequency of Relief/ Compensation
Revenue Expenditure		
Increase in Auxiliary Consumption	Revision of QNHR	Monthly
Revision of Contracted Capacity	Revision of QNECC	Monthly
Increase in Consumption of Raw Material		
1. Limestone	As per Limestone Consumption Norms	Monthly
2. Water	As per Water Consumption Norms	Monthly
O&M Expenses	3% of aggregated capex with WPI/CPI Indexation	Monthly
Working Capital	As per relevant operational expenses associated with operation and maintenance of FGD	Monthly
Initial Capital Expenditure	Rs. 299.02 Crores	Not being Claimed
Capital Expenses as per Step-1	Compensation of Capitalized Expenses	As and when Invoiced
Capital Expenses as per Step-2	Compensation of Capitalized Expenses	As and when Invoiced

Hearing Dated 5.5.2020

3. The matter was listed for hearing on admission on 5.5.2020. The Commission admitted the Petition and observed as under:

"*9. After examination of CEA`s letter dated 29.3.2019, the Commission observed that the Petitioner has not responded to specific observations of the CEA on feasibility report on installation of Emission Control Systems at the Petitioner's Plant and CEA*

further informed the Petitioner to refer to its Guidelines on the subject matter. However, CEA's Guidelines pertain to installation of new FGD system, whereas the Petitioner's case is peculiar as the Petitioner is already having FGD system and only requires augmentation/ modification in existing FGD system to meet the revised emission norms. Therefore, CEA's Guidelines may not be strictly applicable to the Petitioner's case. Accordingly, the Petitioner was directed to approach CEA for concurrence of its proposals with regard to 'Modifications to improve availability & reliability' and 'Retrofitting aimed at improving SO2 removal efficiency' of existing FGD installed at its plant and associated estimated/ indicative costs for such proposals."

10. The Commission directed CEA to examine the aforesaid proposal of the Petitioner and furnish its comments as soon as possible."

Submissions of Haryana Utilities (Respondent No. 1 and Respondent No. 2)

4. In their replies, the Haryana Utilities have submitted as under:

a) The Petition is premature since process of retrofitting the Existing FGD is not yet complete. The Petitioner should approach this Commission after completion of the work, along with all the necessary approvals, details of competitive bidding, expenditures, invoices, work orders, technical details etc. There is no provision in the PPA for in principle approval before the expenditure has been incurred. The obligation of the Petitioner to comply with the Revised Emission Norms do not depend upon any in principle approval of the Commission.

b) The Petitioner has claimed the amendment in Environment (Protection) Rules notified on 07.12.2015 as Change in Law. The Petitioner has entered into the PPA in pursuance to a tariff based competitive bid process in terms of Section 63 of the Electricity Act, 2003 and Guidelines issued thereunder by the Central Government dated 19.1.2005. For Discom PPA, the Bid Deadline was 10.03.2008 and accordingly, the Cut-Off Date for consideration of a Change in Law event as per the PPA is 3.3.2008. For consideration of the change in law claim, the Commission has to take into consideration the requirement for various consents and clearances obtained and the conditions imposed therein and implications thereof need to be excluded from consideration of change in law.

c) If the Environment Clearance or Consents provide for a condition on the operations of the Petitioner's project prior to the MOEFCC Notification of

07.12.2015, it is not a change in law since the Petitioner was already subject to the said conditions by operation of law. The MOEFCC Notification of 7.12.2015 can be considered a Change in Law only to the extent that it imposes new conditions or makes the existing conditions more stringent in order to restore the affected party at the same economic position as if such Change in Law has not occurred.

d) The Ministry of Power vide its letter dated 30.05.2018 issued directions to this Commission under Section 107 of the Electricity Act, 2003 with regard to the implementation of the Revised Emission Norms as per the MOEFCC Notification of 7.12.2015. *As per the said letter*, if the equipment were envisaged in the Consents and Clearances prior to 7.12.2015, the same would not be a change in law. In the present case, FGD system was mandated by the Environment Clearance dated 24.4.2008, which is well before the MOEFCC Notification of 07.12.2015.

e) The Environment Clearance dated 24.4.2008 (modified as per communication dated 11.8.2010 at the instance and representation of Petitioner) provides for installation of a FGD system and, thus, the MOEFCC Notification of 07.12.2015 is not a change in law since Petitioner was already subject to the said condition. Further, the technical description of the FGD system proposed to be installed as per the letter dated 16.3.2010, on the basis of which the Environment clearance dated 24.4.2008 was modified, itself states that the outlet gas SO_2 concentration after installation of FGD system is 173.76 mg/Nm^3 which is within the Revised Emission Norm of 200 mg/Nm^3 as per the MOEFCC Notification of 07.12.2015. Also, after installation of FGD system, SO_2 emissions was to be in the range of 163 mg/Nm^3 as per the overseas contract with the supplier dated 26.3.2009 as amended on 9.2.2010. Thus, there cannot be any issue of change in law with regard to revised SO_2 emission norms of 200 mg/Nm^3 or less. The Petitioner is obliged to establish as to how the Existing FGD which is capable of outlet gas SO_2 concentration of 173.76 mg/Nm^3 is inadequate to meet the revised emission norms as per the notification dated 07.12.2015.

f) As per the Environment clearance dated 24.4.2008 (un-amended), the installation of FGD system was already envisaged as on the cut-off date. In this regard, Punjab State Electricity Regulatory Commission has noted in the case of Talwandi Sabo Power Limited (Petition No. 44 of 2017 dated 21.12.2018) after considering the implications of Environment clearance which provided for space for retrofitting FGD and earmarking of funds for the environmental protection measures held as under:

> *"…The Commission notes that conditions (vi) & (xxv) of the Environmental Clearance dated 11.07.2008 mandated that TSPL shall provide space to retrofit FGD if required at a later date and shall allocate funds for implementation of all the environmental protection measures. It also provided that TSPL shall not divert the said funds for any other purpose. The earmarking of funds for all environmental protection measures had to be done at the beginning. The details of environmental protection measures was not spelt out but obviously flowed from the conditions mentioned in the Environmental Clearance. TSPL was also enjoined not to divert the funds since only expenditure was to be reported to the Ministry. The Ministry wanted to know only about the expenditure made on various environmental protection measures and not about the earmarking of funds. Earmarking of funds and not diverting the funds for other purposes was the responsibility of TSPL. Though TSPL complied with condition (vi) for providing space for retrofitting of FGD, it did not allocate funds for retrofitting FGD system. Thus, TSPL did not fully comply with the requirement of FGD as contemplated in the Environmental Clearance…."*

g) Further, the Appellate Tribunal in M/s JSW Energy Limited v. Maharashtra State Electricity Distribution Co. Ltd and Another dated 21.01.2013 in Appeal No. 105 of 2011 has considered this aspect and held that in view of the above conditions (identical conditions as of Talwandi Sabo Power Limited), the FGD system was already envisaged. An appeal has been filed by filed JSW Energy Limited against the above Judgment being Civil Appeal being No.2967 of 2013 which is pending before the Hon'ble Supreme Court.

h) In the present case, not only was the FGD system mandated in the Environment Clearance dated 24.4.2008 (amended on 11.8.2010 at the instance of the Petitioner) but the said FGD was also installed at the Plant with the design parameter which meets the revised emission norms dated 07.12.2015.

i) It is wrong to argue that there were no norms for SO_2 prior to the revised emission norms notified on 07.12.2015. There was a specific

requirement under the Environment Clearance dated 24.04.2008 (un-amended) for the use of coal of Sulphur content of maximum of 0.35%. There was another clause in the Environment Clearance dated 24.04.2008 (un-amended) which read '*Space provision shall be kept for retrofitting of FGD, if required at a later date'*. This was amended on 11.08.2010 at the instance of Petitioner to read as '*FGD having sulphur removal efficiency of not less than 85% shall be installed with each unit within three years of commissioning of the power plant'.* The Environment Clearance dated 24.4.2008 (un-amended) also specifically provided that separate funds shall be allocated for implementation of environmental protection measure along with item wise break up and theses cost shall be included as a part of Project Cost.

j) The costs claimed by the Petitioner cannot be considered at this stage, particularly when CEA's comments are not available as recorded in Record of Proceedings dated 5.5.2020. Therefore, comments of CEA on the proposals by Petitioner with regard to 'Modifications to improve availability & reliability' and 'Retrofitting aimed at improving SO2 removal efficiency' of existing FGD system installed, should be shared with the Haryana Utilities.

k) After the office order dated 11.8.2010 issued by MOEFCC, FGD system was installed and commissioned in the plant in October 2013 without having any impact on the quoted parameters/ tariff as per the bid submitted. The Petitioner had never disputed installation of FGD system nor claimed any tariff revision on account of FGD system installed at Unit 1 and 2 of the Plant and the same has now attained finality. Thus, the FGD system is an integral part of the Plant and the capacity charges and all factors related to operation and maintenance are deemed to have been accounted for in the tariff being paid by the Haryana Utilities. The Petitioner's claim for revision of contracted capacity, increase in Quoted Non-Escapable Capacity Charges, increase in Quoted Net Heat Rate, costs for increased raw material consumption (i.e., limestone, water etc.), additional O&M expenses pertaining to spares & consumables, services, staff cost and overheads and increased working capital on a monthly basis is not permissible.

l) Without prejudice to the above submissions, point-wise submissions pertaining to the factors for operation of FGD are as under:

i. *Increase in Auxiliary consumption:* The power consumption of the Exiting FGD had been envisaged at 6.6 MW i.e. (0.5%). In case retrofitting is required, the difference of actual power or normative consumption of FGD system, whichever is lower, after retrofitting and power consumption of Existing FGD should be considered.

ii. *Consequent Revision of Contracted Capacity and Increase in Quoted Non-Escapable Capacity Charges:* The Existing FGD is capable to meet the revised emission norms. Thus, no revision of contracted capacity & capacity charges is required. In case requirement of retrofitting is ascertained, revision may be considered but limited only to the change in auxiliary consumption.

iii. Increased raw material consumption (i.e., limestone, water etc.) and waste disposal costs:

Sr. No.	Particular	Unit	Design Parameter of existing plant	Compensation sought through present petition	Remarks as per proposal submitted by Petitioner on 16.03.2010 (Page No 640)
1	Limestone	TPH	8.4	8.8	
2	Water Consumption	m^3/hr	295	280	The Petitioner informed that no additional water requirement is envisaged for FGD system and it was proposed to reuse the cooling tower blow down for FGD system operations. For two units 225 m^3/hr discharge and 70 m^3/hr of industrial water will be used.

3	Waste water disposal	m^3/hr	30	17	The waste water generated will be treated and suitably reused at site. The Plant has been designed as a zero effluent discharge plant.

iv. *O&M expenses towards spares & consumables, services, staff cost and overheads:* Retrofitting to an existing FGD system does not call for any increase in O&M expenses.

v. *Cost on account of developing/ modification of Gypsum storage Area, Waste storage duke, slurry storage tank, lime grinding slurry and preparation, draining system etc. incurred in step 1:* These are essential part of an FGD system required for its efficient operation and the cost on these accounts are not admissible as these have already been factored in the tariff.

vi. The Existing FGD was designed for 100% BMCR flow and, as such, up-gradation is not required.

vii. The covered limestone and gypsum handling, permanent platform and approaches for FGD system are integral part of the Existing FGD and, hence, proposed modification and expenditure thereof may not be required. However, in case any retrofitting is required on account of the MOEFCC Notification of 07.12.2015, the proposal along with the cost estimation needs to be approved by CEA.

m) The Petitioner has also claimed compensation on account of change in law since 01.04.2018 which is the trial period. The Existing FGD is/are in operation since 2013. The claim on account of trial period, if to be considered, should be limited to the auxiliary power consumed during the commissioning of additional equipment. The Petitioner is not entitled for relief on account of expenditure for Raw material cost (limestone, water) O&M cost, working capital since April 2018 as it has been under usual operation since much before.

The Petitioner has mentioned that at the 36th meeting of the Technical Coordination Committee of NRPC on 14.09.2017, TCC shifted the Plant from the list of power plants already having FGD system to the list of plants that ought to be covered under the FGD Phasing Plan. However, such shift by TCC was done on the basis of the statement made by the representative of the Petitioner "*that the existing FGDs were designed for imported coal envisaged earlier for operation of MGTPP*. *The new Sox emission limit of 200mg/NM3 cannot be achieved by these FGDs and augmentation and auxiliary systems would be needed".* The PPA dated 07.08.2008 was entered into by Haryana Utilities with the Petitioner in pursuance to a competitive bid process in terms of Section 63 of the Electricity Act, 2003 by arranging the domestic coal linkage as the primary coal for generation of electricity. A Letter of Assurance for domestic coal linkage was issued on 14.10.2008. The Petitioner was corresponding with CCL on the draft Fuel Supply Agreement from 29.01.2010 onwards. The Petitioner executed the FSA will CCL on 7.6.2012. Thus, it is erroneous on the part of Petitioner's representatives to make incorrect statements before the TCC.

Reply of Tata Power Trading Company Limited (Respondent No. 3)

5. TPTCL has submitted that it is merely an intermediary/ electricity trader and has back to back agreements with TPDDL through the Trading PSA and back-to-back arrangement as per the JPL-TPTCL PPA clearly establishes that the role of the Respondent is of an intermediary between the Petitioner and TPDDL and that it has no substantial role in the present dispute.

Reply of Tata Power Delhi Distribution Limited (Respondent No. 4)

6. TPDDL has submitted the following (submissions which are repetitions of submissions of the Haryana Utilities have been omitted for the sake of brevity):

a) The Petitioner must place on record the relevant documents such as the actual emission profile of the Plant as recorded on the cut-off date as well as at present. In absence of such details/ documents, no relief can be granted.

b) CEA vide its letter dated 29.03.2019 informed the Petitioner that the clarifications it had sought vide its previous letter dated 12.03.2019 on the aspect of Feasibility Report for installation of emission control system, were unanswered. Thus, the Petitioner may be directed to demonstrate the requirement and feasibility of new/ modified FGD system and show a cost-benefit analysis in comparison with the recommendations and guiding norms of CEA. This cost-benefit analysis is necessary in light of the peculiar facts and circumstances of Petitioner's case where it claims to have already installed the FGD system. It must be ensured that most economical and optimum technology is being used to ensure minimum burden on the consumers.

c) In pursuance of the directions issued by this Commission vide RoP dated 05.05.2020, the Petitioner approached CEA vide its letter dated 12.06.2020. In the said letter, the Petitioner sought CEA's recommendation on various aspects pertaining to capital cost estimates. CEA vide its letter dated 17.06.2020 sought for various details/ information with respect to the Petitioner's proposal. The Petitioner responded to CEA's queries vide its letter dated 10.07.2020 and has provided the details/ information sought by CEA. CEA is yet to provide its comments on the proposal of the Petitioner. Therefore, till the time recommendations are made by CEA in this regard, the claims of the Petitioner are premature.

d) The Petitioner has sought for decrease in the contracted capacity on account of increase in Auxiliary Consumption as a consequence of continuous operation of the Existing FGD and its auxiliaries. The Petitioner has claimed that this increase in Auxiliary Consumption is in line with the design specifications manual of M/s. Spic Yuanda, the original equipment manufacturer and supplier of the Existing FGD, and the norms notified by CEA. The Petitioner may be directed to provide all requisite data/ information to demonstrate the actual Auxiliary Consumption at the Plant. In this regard, vide order dated 06.05.2020 in Petition No. 209/MP/2019, the Commission has considered the impact of

installation of a FGD system on the auxiliary consumption and has allowed an increase of 1% based on CEA's recommendation in similar plants only. Therefore, the Commission may undertake thorough prudence check in the present case in light of the peculiar facts and circumstances so as to ensure that consumers are not unnecessarily burdened.

e) On the basis of the purported increase in Auxiliary Consumption, the Petitioner has sought for reduction in contracted capacity and consequent increase in Quoted Non Escalable Capacity Charges ("QNECC") and Quoted Net Heat Rate ("QNHR"). The Petitioner has stated that it needs to be compensated for lower dispatch of power with the same coal consumption. The Petitioner has not provided any evidence to support the said claims and has relied on mere illustrations.

f) The Petitioner has claimed additional expenditure for procuring raw materials such as limestone and water for operating the Existing FGD. However, the Petitioner has not provided the water consumption data and has not demonstrated the steps undertaken to procure limestone. Unless the Petitioner demonstrates the additional expenditure towards limestone and water, the said claims of the Petitioner cannot be sustained. The Petitioner has stated that it will source the limestone from Indian markets through e-tendering process, based on the design specification of M/s. Spic Yuanda, the original supplier of the existing FGD system. The Petitioner has also provided a computation methodology in this regard. In light of the fact that this Commission has directed for a Staff Paper to be floated on developing a compensation mechanism, the claims of the Petitioner are premature. In any case, it must be ensured that the technology being used by the Petitioner is the most effective and economical available technology, and also as per CEA's recommendations.

g) The Petitioner's claim for O&M expenditure cannot be allowed since the time of inception considering the fact that the Petitioner voluntarily sought to install FGD system at the time of constructing the Plant. The costs incurred from the date of commissioning to the issue of MOEFCC Notification dated 07.12.2015 ought to be solely borne by the Petitioner. Relief on operational

norms can be allowed after the coming into effect of the MOEFCC Notification, subject to the prudence check by this Commission.

h) The Commission has provisionally allowed additional O&M expenses @2% per annum of the capital cost of the FGD system in its Orders dated 6.5.2020 in Petition No. 209/MP/2019 and 28.3.2018 in Petition No. 104/MP/2017.

Rejoinder of the Petitioner to the Reply filed by Haryana Utilities

7. The Petitioner in its Rejoinder to the reply filed by Respondent 1 & Respondent 2 has mainly submitted as under:

a) There is no requirement to wait for actual expenditure to be incurred before in-principle approval can be granted. In Sasan Power Limited v. MP Power Management Co. Ltd. and ors. (order dated 23.04.2020 in Petition No.446/MP/2019), this Commission has accorded approval to the Petitioner therein for capital costs on provisional basis and also provisionally allowed O&M expenditure at the rate of 2% of the capital cost of FGD system. Further, the Commission allowed increased auxiliary consumption of 1% as recommended by Central Electricity Authority (CEA) subject to revision based on the norms specified by the Commission.

b) The PPA does not provide that costs have to be incurred before a Change in Law claim can be made to the Commission. In fact, the PPA provides that the compensation for any increase/ decrease in revenues or costs to the seller in excess of 1% of the letter of credit in aggregate for a contract year shall be determined and effective from such date.

c) Revised EC does not take away the fact that the Existing FGD has certain limitations and, therefore, cannot comply with the Revised Emission Norms (notified on 07.12.2015) on an ongoing basis. The Existing FGD was envisaged to be used occasionally on ‘as and when required’ basis. However, the Revised Emission Norms are more stringent on account of requiring compliance on a continuous basis for rest of the operating life of the Plant. In

order to comply with the Revised Emission Norms, the Petitioner would be required to modify, augment and retrofit the Existing FGD. Consequently, the Petitioner will have to incur expenditure to modify, augment and retrofit the Existing FGD to comply with the Revised Emission Norms on a continuous long term basis.

d) The Existing FGD has been designed to burn coal with Sulphur content not more than 0.35%. However, Sulphur content prescribed by CEA is 0.5%. Also, CEA in its standard technical specification requires that the FGD system is designed with outlet SO_2 of 150 mg/Nm3, which is beyond the design specifications of the Existing FGD. As long as the Sulphur content in the coal supplied does not exceed 0.35%, the expenditure required in Step 2 may not be required and the Petitioner will likely not need to claim such amounts as Change in Law.

e) The changes in Capacity Charge (as defined in the PPA) claimed by the Petitioner are not on account of the initial installation cost of FGD system (which the Petitioner has chosen not to claim) but to compensate for the costs and expenses being incurred by the Petitioner for continuous operation of FGD as per the Revised Emission Norms.

f) The trial operations were carried out commencing from 01.04.2018 to 31.01.2019 to establish which modifications, retrofits and augmentations were required to ensure continuous long-term operation of the Existing FGD from the date assigned to the Petitioner by MOEFCC i.e. 01.02.2019. These trial operations were therefore necessitated by the Revised Emission Norms which mandated operation of the FGD on continuous basis. Therefore, the costs of these trial operations are to be compensated by the Respondents 1 and 2. It is only due to the trial operations that the Petitioner has been able to ensure continuous operation of the Existing FGD for the last 1.5 years. However, these were temporary fixes and unless some of the other modifications specified as Step 1 are now carried out, the Existing FGD runs the risk of losing availability.

Rejoinder of the Petitioner to the Reply filed by TPDDL

The Petitioner in its rejoinder to the reply filed by TPDDL, Respondent No.4 has submitted as under:

a) In the present case, the Existing FGD has certain limitations in meeting the Revised Emission Norms predominantly on account of lack of redundancy to ensure long term continuous operation and constraints in processing sulphur content higher than 0.35%. Hence, in order to operate the existing FGD on a continuous long-term basis in compliance with the Revised Emission Norms, the Petitioner has already undertaken substantial maintenance work, refurbishment work and also conducted extensive trial runs of the existing FGD, so as to increase its availability, reliability and efficiency, incurring significant incremental capital expenditure. Further, as a consequence of operating the existing FGD to comply with the Revised Emission Norms, the Petitioner is already incurring, and for operating the Existing FGD on a continuous basis in compliance with the Revised Emission Norms, will continue to incur cost.

b) CEA has already given a recommendation that due to installation of FGD system, there is an increase in auxiliary consumption by 1% which is applicable industry wide, including to the Petitioner's Plant. Hence, this Commission should approve the additional auxiliary consumption of 1% claimed by the Petitioner in line with other instances where the Commission has approved additional auxiliary consumption on account of FGD system installation and operation.

c) Before filing this Petition, the Petitioner had already been interacting with CEA for necessary guidance/ direction on the modification, augmentation and retrofitting of the Existing FGD system and correspondence was exchanged with them.

d) The emission profile as on cut-off date (i.e. 20.01.2009, the date on which the TPTCL PPA was signed) is irrelevant since the commercial operation date of both units of the Plant occurred in 2012, nearly 3 years after

signing of the TPTCL PPA and the FGD units were commissioned in 2013. The comparative analysis of emission profile of the Plant with other plants is also irrelevant as the technical design parameters differ on case to case basis. What needs to be assessed is the modifications, augmentation and retrofitting required to the Existing FGD such that it can meet the requirements under the Revised Emission Norms on a long-term continuous basis and as per CEA guidelines and the impact the same would have on the Petitioner's costs and revenues.

e) The Petitioner cannot submit a cost benefit analysis of the Existing FGD vis-a-vis other technologies because the fundamental difference is that present case of the Petitioner is peculiar as there is an already installed FGD.

f) The costs of trial operations have to be compensated by the Respondent No.4 along with the other Respondents.

Analysis and Decision

8. We have heard the learned counsels for the Petitioner and the Respondents and have carefully perused the records. The following issues arise for our consideration:

Issue No. 1: Whether the Notification dated 07.12.2015 issued by MOEFCC is a change in law event in terms of PPAs dated 07.08.2008 and 20.01.2009 entered into by Petitioner with the Haryana Discoms and Tata Power Trading Company Limited, respectively?

Issue No. 2: Whether the Petitioner is entitled to be compensated for capital expenditure incurred and to be incurred towards retrofitting the Existing FGD?

Issue No. 3: Whether the Petitioner is entitled to compensation towards contracted capacity, quoted non-escalable capacity charges (QNESS), quoted net heat rate (QNHR), increased auxiliary power consumption and O&M expenses towards limestone, water etc. on account of Revised Emission Standards issued by MOEFCC vide Notification dated 07.12.2015?

9. The above issues are dealt in the succeeding paragraphs.

Issue No.1: Whether the Notification dated 07.12.2015 issued by MOEFCC is a change in law event in terms of PPAs dated 07.08.2008 and 20.01.2009 entered into by Petitioner the Haryana Discoms and Tata Power Trading Company Limited, respectively?

10. The definition of "Change in Law" under the Discom PPA is as follows:

"Article 13.1.1 "Change in Law" means the occurrence of any of the following after the date, which is seven (7) days prior to the Bid Deadline:
(i) the enactment, bringing into effect, adoption, promulgation, amendment, modification or repeal, of any Law; or

(ii) a change in interpretation of any Law by a Competent Court of Law, tribunal or Indian Governmental Instrumentality provided such Court of Law, tribunal or Indian Governmental Instrumentality is final authority under Law for such interpretation; or

(iii) change in any consents, approvals or licenses available or obtained for the Project, otherwise than for default of the Seller, which results in a change in any cost of or revenue from the business of selling electricity by the Seller to the Procurers under the terms of this Agreement; or

(iv) any change in the (a) Declared Price of Land for the Project; or (b) the cost of implementation of the resettlement and rehabilitation package of the land for the Project mentioned in the RFP; or (c) the cost of implementing Environmental Management Plan for the Power Station mentioned in the RFP;

but does not include (i) any change in any withholding tax on income or dividends distributed to the shareholders of the Seller, or (ii) change in respect of UI Charges or frequency intervals by an Appropriate Commission.

Provided that if Government of India does not extend the income tax holiday for power generation projects under Section 80 IA of the Income Tax Act, upto the Scheduled Commercial Operation Date of the Power Station, such non-extension shall be deemed to be a Change in Law."

11. "Law" in terms of both PPAs means, in relation to this Agreement, all Laws including Electricity Laws in force in India and any statute, ordinance, regulation, notification or code, rule or any interpretation of any of them by an Indian Governmental Instrumentality and having force of Law and shall further include all applicable rules, regulations, orders, notifications by an Indian Governmental Instrumentality pursuant to or under any of them and shall include all rules, regulations, decisions and orders of the Appropriate Commission.

12. The definition of “Change in Law” in the TPTCL PPA is the same as the definition in the Haryana Discom PPA, except to the extent that the Change in Law under the TPTCL PPA shall be an occurrence of any of the aforesaid events after the effective date i.e. the date of signing of the TPTCL PPA which was 20.01.2009.

13. Further, ‘Indian Government Instrumentality’ has been defined to mean any ministry, department, board controlled by the Government of India or State Government as the case may be, in both PPAs. MOEFCC is a Ministry under the Government of India and, therefore, is an Indian Government Instrumentality as defined under the PPAs. Further, the Environment (Protection) Rules, 1986 and the MOEFCC Notification dated 07.12.2015 are pursuant to statutory powers granted to MOEFCC under the Environment (Protection) Act, 1986. Therefore, the MOEFCC Notification dated 07.12.2015 qualifies to be considered as an event of Change in Law under the terms of the PPAs.

Issue No. 2: Whether the Petitioner is entitled to be compensated for capital expenditure incurred and to be incurred towards retrofitting the Existing FGD?

14. The EC (Environmental Clearance) was obtained by the Petitioner on 24.04.2008 and the amended EC obtained on 16.08.2008 and 25.11.2009 only provided for keeping space for FGD system, if required at a later date.

15. The relevant extracts of Environmental Clearance dated 24.04.2008 issued by MOEFCC is as under:

> *“(ii) Sulphur and ash content in the coal to be used in the project shall not exceed 0.35% and 34% respectively.*
>
> *(iii) A bi-flue stack of 275m height shall be provided with continuous online monitoring equipment for SO_2, NOx and Particulate. Exit velocity if flue gases shall not be less than 24.7m/sec.*
>
> *(iv) High efficiency Electrostatic Precipitator (ESPs) (ESPs) shall be installed to ensure that particulate emission does not exceed 50mg/NM^3.*

(v) Space provision shall be kept for retrofitting FGD, if required at a later date.

(vi) Low Nox burner shall be provided.

....."

16. The Petitioner vide its letter dated 16.03.2010 sought approval from MOEFCC for the following:

a) Installation of wet limestone gypsum-based Flue Gas Desulphurisation (FGD) plant having sulphur removing efficiency of 85% for each unit within three years of commissioning of the Plant with permissible changes in the emission characteristics of gas velocity to 21.6 m/sec at slack temperature of 52.4^0; and

b) Flexibility to operate FGD system as and when required to ensure compliance under EC issued vide letter dated 24.4.2008 are met.

17. MOEFCC vide office order dated 11.08.2010 granted approval to the Petitioner for the installation of FGD system and substituted the EC dated 24.04.2008 as under:

"(*iii) A bi flue stack of 275 m shall be provided with contagious online monitoring equipment for SO_2 , NO2 and particulate. Exit velocity of flue gases shall not be less that 22m/sec.*

…….

(v) ***FGD not having sulphur removal efficiency of not less than 85% shall be installed with each unit within three years of commissioning of the power plant****.*

(vi) …….

(xxviii) The project proponent shall upload the status of compliance of the conditions stipulated in the environmental clearance issued vide this Ministry letter of even no. dated 03.10.2008, in its website and upload periodically and also simultaneously and the same by email to the Regional Office of the Ministry of Environment and Forests.

18. Based on MOEFCC approval, the Petitioner decided to install FGD system in the Plant and chose SO_2 emission limit of 200 mg/Nm^3 for the Existing FGD at design Sulphur content of 0.35% in coal though there were no applicable standards for Sulphur Dioxide (SO_2) at the time of environment clearance accorded to the Petitioner. The Petitioner installed the FGD system in October 2013.

19. It was only on 07.12.2015 that MOEFCC notified the Revised Emission Norms for Sulphur dioxide. Thus, the Petitioner had installed the FGD system before the MOEFCC Notification dated 7.12.2015.

20. The Petitioner has referred to some orders of the Commission to claim that since the Commission had considered the MOEFCC Notification dated 07.12.2015 as change in law in those petitions, the same should be applied in case of the Petitioner's generating station also. We are of the view that the Petitioner having installed FGD system before the MOEFCC Notification dated 07.12.2015 cannot be considered to be on the same footing as other generating stations where FGD system was not installed as on the date of the MOEFCC Notification dated 07.12.2015.

21. The Respondents (Haryana Discoms) have submitted that after the office order dated 11.8.2010 issued by MOEFCC, FGD system was installed and commissioned in the Plant in October 2013 without having any impact on the quoted parameters/ tariff as per the bid submitted. The Haryana Discoms have submitted that the Existing FGD is an integral part of the Plant and the capacity charges and all factors related to operation and maintenance are deemed to have been accounted for in the tariff being paid by the Haryana Utilities. We note that the Petitioner has itself submitted that it is not claiming capital cost amounting to Rs.299.02 crore towards installation of the Existing FGD. Therefore, no additional expenditure by the Petitioner on installation of FGD system is considered and allowed.

22. The Commission vide RoP dated 05.05.2020 directed the Petitioner to approach CEA for concurrence and estimated/ indicative costs of its proposals with regard to modifications and retrofitting to the FGD system to improve availability,

reliability and SO_2 removal efficiency. CEA vide its letter dated 20.06.2020 made the following observation to the proposal submitted by the Petitioner:

"1. In the feasibility report submitted by JPL, the Aux. Power Consumption considered while showing present tariff calculation is 6.271% (without FGD) which is more than the 5.75% as permitted under normative Aux. Power consumption in CERC tariff Regulations 2019-2024.

2. JPL vide its letter email dated 11.11.2020 has informed that, as per design documents provided by Boiler OEM (M/s Harbin) and FGD OEM (M/s SPIC Yuanda) their Boiler and FGD are designed for fuel properties, with Sulphur content as 0.35% for design coal. It is observed from the Coal Reports (for the months from September 2019 to March 2020) the variation in Sulphur content is from 0.32% to 0.61%, and as per status report submitted on 04.02.2019, for meeting new environment Norms, they are able to comply the SOx emission limits. ***The SOx reported is from 150 -180 mg/NM3 which is within the applicable limit of 200 mg/NM3.***

3. From the submitted PG Test report, the following are noted:

Unit No.	*Inlet Dust SOx load (mg/Nm^3)*	*SOx measured at FGD outlet (mg/Nm^3)*
1.	*1310*	*82.6*
2.	*1360*	*87.3*

4. M/s JPL vide email dated 20.11.20 have stated that FGD is designed to handle inlet SO_2 upto 1300 mg/Nm^3 and as per their calculations at 0.5% Sulphur content the expected SO_2 burden shall be 1454 mg/NM3 and the Performance of FGD will reduce. They have experienced difficulty in meeting norms at such high levels of inlet SO_2.

5. In view of the performance noted in the PG test report (see point 3 above), the FGD performance at SOx burden of 1454 mg/NM3 (@ 0.5% sulphur) would deteriorate but is not expected to cross the limit of 200 mg/Nm3 and therefore no limitation appears in the existing FGD system to meet the applicable SOx limits. Further, it may be seen at para 2 of this letter, wherein JPL has claimed the units to be SOx compliant, during the conditions when the sulphur content was as high as 0.61%. ***It is suggested that the performance deterioration (expected by JPL) of the FGD equipment may be backed by the opinion of the equipment supplier.***

6. As per FGD design parameters enclosed in FGD PG test report, it is mentioned that:

"Under the operating conditions from 40% BMCR of single boiler to 100% BMCR, the flue gas system of the FGD plant could maintain normal operation. Furthermore, under BMCR of two boilers, when the temperature of the inlet gas is below 170^oC, the system could run ***safely and continuously****."*

It is also noted from the PG test report that the FGD system is designed for device/ system availability of 95%.

However, present proposal of JPL for further enhancing the reliability and availability of FGD system may be considered, if the beneficiaries agree for the additional CAPEX required for the upgrade proposed in the FGD*."*

23. A reading of above CEA Report reveals that emission of SO_2 from the Plant is in the range of 150-180 mg/Nm^3 which is within the applicable limit (as per MOEFCC Notification of 07.12.2015) of 200 mg/Nm^3. We note that the Petitioner had raised with the CEA the issue of higher Sulphur content (more than 0.35%) in the coal that is likely to be received at the Plant. However, we observe that even in that case, CEA has opined that "*the FGD performance at SOx burden of 1454 mg/NM3 (@ 0.5% sulphur) would deteriorate but is not expected to cross the limit of 200 mg/Nm3 and therefore no limitation appears in the existing FGD system to meet the applicable SOx limits".* CEA also advised that the proposal of the Petitioner for further enhancing the reliability and availability of FGD system may be considered, if the beneficiaries agree for additional capital expenditure.

24. We find no reason to disagree with views of CEA as regards retrofitting of the existing FGD. We also note that the Respondents (the Haryana Discoms and TPDDL) are against any additional expenditure towards retrofitting the existing FGD. Thus, we are not inclined to allow retrofitting of the existing FGD since the Plant already meets the Revised Emission Norms of SO_2 and the beneficiaries have not consented to the additional expenditure.

25. It has been submitted by the Petitioner that in order to test the adequacy of the operating systems and processes of the existing FGD to operate continuously on a long-term basis, it undertook substantial maintenance work, some refurbishment work and also conducted extensive trial runs of the existing FGD. However, we note that the Petitioner has not placed on record the shortcomings of the existing FGD system. It has also not placed on record whether it consulted any expert agency such as CEA before undertaking these trial runs.

26. In view of the above discussions, we are not inclined to allow the additional capital expenditure incurred or to be incurred by the Petitioner towards retrofitting the existing FGD or towards trial run undertaken w.e.f. 01.04.2018.

Issue No. 3: Whether the Petitioner is entitled to compensation towards contracted capacity, quoted non-escalable capacity charges (QNECC), quoted net heat rate (QNHR), increased auxiliary power consumption and O&M expenses towards limestone, water etc. on account of Revised Emission Standards issued by MOEFCC vide Notification dated 07.12.2015?

27. The Petitioner has prayed for revision in contracted capacity; revision in QNHR from 2,396 kCal/kWh to 2,422 kCal/kWh to compensate for the 1% increase in auxiliary power consumption; compensation for increased auxiliary power consumption; costs for limestone, water consumed; O&M expenses; and working capital cost. The Petitioner has claimed these from start of trial run period i.e. from 01.04.2018 till entire term of the PPAs.

28. We have already disallowed the additional capital expenditure of Rs.299.02 crores towards the existing FGD system as the Petitioner had already installed the same before the MOEFCC Notification dated 07.12.2015 and it has not claimed the same expenditure and had agreed to supply power at the tariff agreed at the time of bidding. Further, we have not allowed any additional capital expenditure on account of retrofitting of the existing FGD on the basis of CEA's opinion that the existing FGD system is capable of meeting the Revised Emission Norms of SO_2.

29. We note that the Petitioner had installed the FGD system on its own volition, though not mandated. However, after the MOEFCC Notification dated 07.12.2015, in order to comply with the Revised Emission Norms for SO_2, the Petitioner is mandated to run the FGD system on continuous basis.

30. The Petitioner has submitted that operating the Existing FGD on a continuous basis has resulted in increased auxiliary power consumption at the Plant at the rate of 1% of the gross installed capacity (660 MW each) of each Unit of the Plant (i.e., an aggregate increase of 13.2 MW for the Plant). It has submitted that such 1% increase in the auxiliary power consumption is in line with the design specifications manual of M/s. Spic Yuanda, the original equipment manufacturer and the supplier of the Existing FGD. It has submitted that same is also in line with CEA norms for auxiliary consumption in FGD system (without gas-gas heater) titled “Norms for Installation of FGD for New Environmental Regulations”.

31. The Petitioner has further submitted that it also incurs costs on account of the Plant being able to dispatch less energy though it consumes the same amount of fuel (i.e., the station heat rate increases). The Petitioner has also submitted that the 1% increase in the auxiliary consumption at the Plant will result in a reduction in the Contracted Capacity. The Petitioner has submitted calculations in this regard.

32. HPPC has submitted that the auxiliary power consumption of the existing FGD had been envisaged at 6.6 MW i.e. (0.5%). In case retrofitting is allowed, the difference of actual power or normative consumption of FGD system (whichever is lower) after retrofitting and power consumption of the existing FGD should be considered. In case requirement of retrofitting is ascertained, revision may be considered but limited only to the change in auxiliary consumption.

34. As discussed in earlier paragraphs, we have not allowed any additional capital expenditure on account of retrofitting of the existing FGD system.

35. The Petitioner has claimed (a) increase in auxiliary power consumption on account of installation of FGD system, and (b) revision of the contracted capacity due to claimed increase in auxiliary power consumption after the installation of the FGD system. Further, the Petitioner has submitted that on account of the MOEFCC Notification dated 7.12.2015, the Petitioner is also affected on the following counts: (c) incurring of additional expenditure for procuring raw materials for operating the Existing FGD and increased waste and contaminated water disposal costs on a continuous basis; (d) incurring of O & M expenses on a continuous basis; and (e) incurring of additional working capital costs on a continuous basis.

36. The Commission has already issued order dated 13.08.2021 in Petition No. 06/SM/2021 wherein a mechanism has been provided (in consultation with stakeholders) to determine compensation on account of installation of Emission Control System by the generating companies in compliance with the Revised Emission Standards issued by MOEF&CC vide the 2015 Amendment Rules in respect of the Thermal Generating stations whose tariff is determined through competitive bidding under Section 63 of the Electricity Act, 2003. Compensation to the Petitioner for compliance with the MOEFCC Notification dated 07.12.2015 shall be governed in accordance with that order. For the purpose of O&M expenses, the capital cost of FGD system shall be treated as Rs. 299.02 crore. Relevant extracts from order dated 13.08.2021 in Petition No. 06/SM/2021 are as under:

> *"44. Accordingly, the Commission is of the view that operation and maintenance expenses shall be allowed @2.5% (instead of 2% proposed in the draft Suo-Motu order) of the additional capital expenditure (ACEe) for installation of ECS (excluding IDC and FERV) as admitted by the Commission and to be escalated at the rate of 3.5% per annum for the period up to 31.03.2024 and, thereafter, the norms shall be reviewed based on available data. Till 31.03.2024, the additional O&M expenses (O&Me) shall be worked out as follows:*
>
> *First Year: 2.5% of ACEe excluding IDC and FERV (to be allowed proportionately if operation of ECS is for part of the year)*

Second Year onwards: 2.5% of ACEe escalated annually at the rate of 3.5%."

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51. Therefore, Working Capital (WCe) allowed shall include following components:

a) Cost of limestone or reagent for stock of 20 days corresponding to the normative annual plant availability factor;

b) Advance payment for 30 days towards cost of limestone or reagent for generation corresponding to the normative annual plant availability factor;

c) Operation and maintenance expenses in respect of emission control system for one month;

d) Maintenance spares @20% of operation and maintenance expenses in respect of emission control system; and

e) 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.

52. Accordingly, the Additional Interest on Working Capital (IWCe) shall be worked out as under:

IWCe(n) = WCe(n) x WCIR(n)/100.

Where,

WCe(n) is the Working Capital of the year for which compensation is to be determined (refer paragraph 51)

WCIR(n) is Working Capital Interest rate (in %) which is Marginal Cost of Lending Rate of State Bank of India (for one year tenor) plus 350 basis points as on 1st April of the year for which compensation is to be determined."

37. We note that the Ministry of Power, Government of India has notified the Electricity (Timely Recovery of Costs due to Change in Law) Rules, 2021 (hereinafter referred to as "the Change in Law Rules") and the Petitioner, therefore, is required to follow the process specified thereunder. Relevant portion of Change in Law Rules notified by the Ministry of Power, Government of India, are extracted as under:

"2(c) "change in law", in relation to tariff, unless otherwise defined in the agreement, means any enactment or amendment or repeal of any law, made after the determination of tariff under section 62 or section 63 of the Act, leading to corresponding changes in the cost requiring change in tariff, and includes —

(i) -------
(ii) -------
(iii) ---------

3. Adjustment in tariff on change in law— (1) On the occurrence of a change in law, the monthly tariff or charges shall be adjusted and be recovered in

accordance with these rules to compensate the affected party so as to restore such affected party to the same economic position as if such change in law had not occurred.

(2) For the purposes of sub-rule (1), the generating company or transmission licensee, being the affected party, which intends to adjust and recover the costs due to change in law, shall give a three weeks prior notice to the other party about the proposed impact in the tariff or charges, positive or negative, to be recovered from such other party.

(3) The affected party shall furnish to the other party, the computation of impact in tariff or charges to be adjusted and recovered, within thirty days of the occurrence of the change in law or on the expiry of three weeks from the date of the notice referred to in sub-rule (2), whichever is later, and the recovery of the proposed impact in tariff or charges shall start from the next billing cycle of the tariff.

(4) The impact of change in law to be adjusted and recovered may be computed as one time or monthly charges or per unit basis or a combination thereof and shall be recovered in the monthly bill as the part of tariff.

(5) The amount of the impact of change in law to be adjusted and recovered, shall be calculated –

(a) where the agreement lays down any formula, in accordance with such formula;

or

(b) where the agreement does not lay down any formula, in accordance with the formula given in the Schedule to these rules;

(6) The recovery of the impacted amount, in case of the fixed amount shall be—

(a) in case of generation project, within a period of one-hundred eighty months;

or

(b) in case of recurring impact, until the impact persists.

(7) The generating company or transmission licensee shall, within thirty days of the coming into effect of the recovery of impact of change in law, furnish all relevant documents along with the details of calculation to the Appropriate Commission for adjustment of the amount of the impact in the monthly tariff or charges.

(8) The Appropriate Commission shall verify the calculation and adjust the amount of the impact in the monthly tariff or charges within sixty days from the date of receipt of the relevant documents under sub-rule (7).

(9) After the adjustment of the amount of the impact in the monthly tariff or charges under sub-rule (8), the generating company or transmission licensee, as the case may be, shall adjust the monthly tariff or charges annually based

on actual amount recovered, to ensure that the payment to the affected party is not more than the yearly annuity amount."

38. As per the above-quoted provisions, on occurrence of a Change in Law, the affected party, in the present case the Petitioner, and other parties, in the present case the Respondents, are to settle the Change in Law claims amongst themselves and approach the Commission only in terms of Rule 3(8) of the Change in Law Rules.

39. Accordingly, the Petitioner may approach the Respondents for settlement of Change in Law claims among themselves in terms of the Change in Law Rules and approach the Commission only in terms of Rule 3(8) of the Change in Law Rules.

40. We also note that CEA has opined that additional expenditure towards retrofitting FGD system may be undertaken with the consent of beneficiaries. Therefore, the Petitioner is granted liberty to approach the Commission if there is consent of beneficiaries and the same will be dealt with in terms of provisions of the PPAs and in accordance with law.

41. Petition No. 283/MP/2019 is disposed of in term of the above.

Sd/-	Sd/-	Sd/-	Sd/-
(P. K. Singh)	**(Arun Goyal)**	**(I. S. Jha)**	**(P. K. Pujari)**
Member	**Member**	**Member**	**Chairperson**