

Work Description - EPC of Ash Handling System at 1X800 MW NTPC Darlipali Stage-II, Odisha

A) Some of the Bidders had asked queries in the published tender specification. The clarifications issued by BHEL are furnished below

Sl.No.	Reference clause of Tender Document	Existing provision			Bidder's Queries	BHEL Reply
1.	Sl. no. 5 of Annexure-3 – Electrical, Control and Instrumentation Scope Matrix	Scope Details Main AHP control system (DCS) , software development and other equipment related to DCS (DCS panels, Network panels, LVS, PCs, Printers, furniture desk, Chairs, PC Consoles, Servers, EMS, OWS/OEWS/EWS)	Scope Remark Bidder's scope includes the following: 1. Detailed IO list including BHEL free issue items , KKS tagging, P&ID Diagram, set-points, Control Philosophy & write up, block logic diagram & HMI screens (for software development), Functional grouping. 2.Detailed IO list shall be submitted within 6 months of LOI in the format prescribed by BHEL which shall be shared to successful bidder . Any addition of IO's at later stage is not acceptable. 3. Bidder shall visit BHEL/Customer during software development, application testing , FAT and ensure the completeness of software for E&C. 4. Any logic modification during commissioning stage shall be executed by EPC bidder. 5. 24V DC and UPS system (UPS load and 24V DC load applicable to BHEL free supplied equipments shall be shared to successful bidder during detailed engineering by BHEL-EDN. Bidder to size the rating of UPS and DC system considering the above load plus any load required for bidder supplied equipments.) 6.Complete PLC system, for HCSD System, DBA and any other PLC operated equipment's, including its HMI, UPS, PC, printers, battery, battery charger etc. 8. Bidder to coordinate with BHEL-EDN before finalisation of field bus based instruments/actuator regarding communication protocol.		We understand that PLC system only for HCSD System is in bidder's scope. Kindly confirm?	Please refer Sl. no. B.1 of this corrigendum
2	Sl. No. 306 of ANNEX-7 CLARIFICATIONS_NTPC Technical Clarification No.1A & 1B	SPECIFICATION REQUIREMENT EMPLOYER'S REQUIREMENT In addition to above, following items required for Employer's use are also included in bidder's scope. These equipment's shall conform to technical specification requirements as stipulated in Part B for respective equipment's. 1. 415V switchgear feeders as indicated below for feeding owner's loads shall be provided (at suitable location to be decided during detailed engineering). (a) 4 Nos. MCCB–125A (b) 4 Nos. MCCB–250A (c) 4 Nos. MCCB-400 A (d) Total 6 Nos. ACB outgoing – 1000 A feeders in unit emergency switchgear and station service switchgear.	COMMENTS / CLARIFICATIONS It is understood that the employer feeder requirement is not applicable for CHP GHP AHP BMHP . Customer may please confirm If feeders are required in CHP AHP area , customer shall furnish employer load requirement in each switchgear room of CHP/AHP/GHP to avoid any change in transformer sizing and MCC design during Detailed Engg.	NTPC's Clarification on Query Employer requirement for feeders shall be provided as per cl no 1.19.00 Sub-section IIB, part A. However employer's feeder shall be considered for transformer sizing	kindly confirm the only mentioned feeder rating to be considered in Transformer's sizing calculation	For sizing of the LT transformer, an additional load of 100 kVA at each MCC location shall be considered to meet the Employer's load requirements mentioned above.

Sl.No.	Reference clause of Tender Document	Existing provision			Bidder's Queries	BHEL Reply
3	Sl. No. 306 of ANNEX-7 CLARIFICATIONS_NTPC Technical Clarification No.1A & 1B	SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	NTPC's Clarification on Query	kindly confirm the rating of Solar System to be considered in Ash Handling System	Please refer Sl. no. B.2 of this corrigendum
		Tentative Roof top Solar Plant Capacity will be 500kWp.	Kindly provide following inputs - 1. Please indicate the maximum capacity of cumulative solar systems be allowed for installation. The limit is required for proper estimation. 2. Please confirm that amount allotted for setting up solar installation would be fixed irrespective of installed capacity. This implies that if the installable capacity is less than maximum allowed installation capacity, then there would be no price adjustment in any manner. 3. Please confirm that indicated capacity is DC capacity.	1. Tentative capacity of roof top solar system is 500kWp. Actual capacity shall be as decided during detailed engineering 2. Bidders understanding is not correct 3. Confirmed		
4	Appendix 2 for PVC	Refer Appendix 2 PVC_1 & Corrigendum 11 Dtd 30/09/2026			Refer Sr. No.: 3 of the said Corrigendum-11 dated: 30.09.26, the items filled up in Section: E at "a", Section: H at "4" & "5" and Section: D at "a" needs to be changed as these are not available in the list for the Base Year: 2022-2023	In consequence to Revision of WPI Series from Base Year 2011-12 to 2022-23, revised Appendix -2 for PVC applicability is attached with this Corrigendum.

B) The following clauses have been added to Chapter XI (Exclusions) of TCC

Sl. No.	Reference Document/ Page/ Clause/Sl. No	Existing Provision	Amended As
1	Remarks at Sl. no. 5 (Main AHP control system (DCS) , software development and other equipment related to DCS (DCS panels, Network panels, LVS, PCs, Printers, furniture desk, Chairs, PC Consoles, Servers, EMS, OWS/OEWS/EWS)) of Annexure-3 – Electrical, Control and Instrumentation Scope Matrix	Bidder's scope includes the following: - Detailed IO list including BHEL free issue items, KKS tagging, P&ID Diagram, set-points, Control Philosophy & write up, block logic diagram & HMI screens (for software development), Functional grouping. - Detailed IO list shall be submitted within 6 months of LOI in the format prescribed by BHEL which shall be shared to successful bidder. Any addition of IO's at later stage is not acceptable. - Bidder shall visit BHEL/Customer during software development, application testing, FAT and ensure the completeness of software for E&C. - Any logic modification during commissioning stage shall be executed by EPC bidder. 24V DC and UPS system (UPS load and 24V DC load applicable to BHEL free supplied equipments shall be shared to successful bidder during detailed engineering by BHEL-EDN. Bidder to size the rating of UPS and DC system considering the above load plus any load required for bidder supplied equipments.) Complete PLC system, for HCSD System, DBA and any other PLC operated equipment's, including its HMI, UPS, PC, printers, battery, battery charger etc. - Bidder to coordinate with BHEL-EDN before finalisation of field bus based instruments/actuator regarding communication protocol.	Bidder's scope includes the following: - Detailed IO list including BHEL free issue items, KKS tagging, P&ID Diagram, set-points, Control Philosophy & write up, block logic diagram & HMI screens (for software development), Functional grouping. - Detailed IO list shall be submitted within 6 months of LOI in the format prescribed by BHEL which shall be shared to successful bidder . Any addition of IO's at later stage is not acceptable. - Bidder shall visit BHEL/Customer during software development, application testing, FAT and ensure the completeness of software for E&C. - Any logic modification during commissioning stage shall be executed by EPC bidder. 24V DC and UPS system (UPS load and 24V DC load applicable to BHEL free supplied equipments shall be shared to successful bidder during detailed engineering by BHEL-EDN. Bidder to size the rating of UPS and DC system considering the above load plus any load required for bidder supplied equipments.) PLC system as per customer NIT Specification including its HMI, UPS, PC, printers, battery, battery charger etc. Supply and E&C of all the Electrical and C&I items applicable for the AWRS , including Wireless Link between AWRS system DCS located in AWRS control room and AHP system / DCS in main plant is in bidder scope. Bidder to refer customer NIT specification for Scope Clarity. - Bidder to coordinate with BHEL-EDN before finalisation of field bus based instruments/actuator regarding communication protocol.
2	Remarks at Sl. no. 7 (Roof Top Solar System) of Annexure-3 – Electrical, Control and Instrumentation Scope Matrix	For estimation , the Bidder may take 10% of the total capacity of the Solar Plant Defined for this Project as a whole . Further before placement of the order, Bidder to ensure that the items thus procured shall be of the same make as installed in the main Plant area supplied by BHEL.	The Bidder may take 50 KWp capacity of the Solar Plant in their scope . Further before placement of the order, Bidder to ensure that the items thus procured shall be of the same make as installed in the main Plant area supplied by BHEL.

Note:

- All other terms and conditions against this NIT shall remain unchanged.
- This corrigendum is to be submitted duly signed and stamped along with the Techno-commercial bid (Part- I)

for BHARAT HEAVY ELECTRICALS LTD
Sr MANAGER / SCT- CPC

APPENDIX -2

PRICE VARIATION

- (i) The Contract price shall be subject to price adjustment during performance of the Contract to reflect changes in the cost of labour and material components etc. in accordance with the provisions described below:
- (ii) The price adjustment provisions shall be applicable separately for price components relating to Supply of Equipment, Installation, Civil and Structural Works, as per price break-up furnished by the Contractor. The Price Adjustment shall be without any Ceiling.
- (iii) Only following components of the Contract Price will be subject to Price adjustment:
 - (a) Ex-Works (India) Price of Plant and Equipment manufactured within the India.
 - (b) Installation Price Component of Contract Price consisting of Erection portion.
 - (c) Civil Works price component of Contract Price excluding Demolition of existing structures (if applicable) price.
 - (d) Site Fabricated Structural Works price component of Contract Price.
- (iv) Price adjustment amounts towards aforesaid components of Contract Price shall be paid in the respective currencies of Contract.
- (v) The indices for price adjustment shall necessarily be of the country of origin of goods/labour and shall be well established and nationally recognized in that country. Preferably Government indices shall be used.
- (vi) The price adjustment formula for the components of the Contract Price, as mentioned at Sl.No. (iii) above shall be as stipulated hereinafter.
- (vii) **Ex-Works/ FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges”**

It is understood that the price component of the equipments for any shipment/despatch comprises of a fixed portion (designated as 'F' and the value of which is specified hereunder) and a variable portion linked with the indices for various materials and labour (description and co-efficients as enumerated below).

The amount of price adjustment towards variable portion payable/recoverable on each shipment/despatch shall be computed as under:

$$EC = EC_1 - EC_0$$

EC₁ will be computed as follows:

$$EC_1 = EC_0 \{ F + a \times (A_1/A_0) \times f_1 + b \times (B_1/B_0) \times f_2 + c \times (C_1/C_0) \times f_3 + \dots + L_b \times (L_1/L_0) \times f_{Lb} \}$$

Where

EC = Adjustment to Ex-Works/FOB Price Component expressed in the currency of the Contract payable to the contractor for each shipment/despatch.

EC₁ = Adjusted Amount of Ex-Works/FOB Price Component expressed in the currency of the Contract payable to the Contractor for each shipment/despatch.

EC₀ = Ex-Works/FOB Price for the plant and equipments in the currency of the Contract, shipment/dispatch wise.

- The fixed portion of the Ex-Works/FOB Component of the Contract Price (F) shall be 0.15.
- a,b,c etc. shall be co-efficients of major materials/items involved in the Ex-Works/FOB Component of the Contract Price. The sum of these co-efficients shall be between 0.50 to 0.60.
- A,B,C etc. shall be published price indices of corresponding major materials/items. Such indices shall necessarily be of the country of origin of goods.
- 'L_b' shall be co-efficient for labour component in the Ex-Works/FOB Component of the Contract Price which shall be between 0.25 to 0.35.

'L' shall be labour index.

- Sum of all the material co-efficients and the labour co-efficient shall be 0.85.

f₁, f₂, f₃, f_{Lb} etc. – shall be considered as “1” ~~f₁, f₂, f₃ etc. are Exchange Rate Correction Factors for the respective materials and f_{Lb} is the Exchange Rate Correction Factor for labour with reference to the currency of the country of origin of index and the respective Contract currency, such that~~

$$f = \frac{Z_0}{Z_1}$$

~~where Z is the no. of units of the currency of the country of the origin of index, which is equivalent to one unit of the respective Contract currency. The exchange rates to be used for calculation of factor 'f' shall be as per Bills Selling Exchange Rates established by the STATE BANK OF INDIA.~~

For the indices, subscript 'o' refers to indices as on **Last Date of Bid Submission**. For 'Z₀' subscript 'o' refers to value as on the date of submission of tender.

Subscript '1' refers to indices/exchange rates as of :

- (a) three months (for Labour Indices) /ninety (90) days (for Exchange Rates) prior to the date of shipment/despatch for labour and Exchange Rates respectively, and
- (b) at the expiry of two third (2/3) period from the date of Notification of Award to the date of shipment/despatch, for material.

For the purpose of this clause the date of shipment/despatch shall mean the schedule date of shipment/despatch or actual date of shipment/despatch, whichever is earlier. The schedule date of shipment/despatch shall be as identified in line with provisions of Time Schedule, **Chapter-4 to the TCC**.

In case of shipments/dispatches which are delayed beyond the schedule date of shipment/despatch for reasons attributable to the Contractor the price adjustment provision shall not be applicable for the period of time between the schedule date of shipment/despatch and the actual date of shipment/despatch. For this purpose, the schedule date of shipment/despatch shall be as identified in line with provisions of Time Schedule, **Chapter-4 to the TCC**.

~~The above formula for price adjustment will be applicable if the currency in which the Contract Price is expressed is different from the currency of the country of origin of labour and material indices. In other cases, formula shall be applied without the Exchange Rate Correction Factor 'f'.~~

(viii) For Installation Price Component (excluding Civil Works and Site Fabricated Structural Works component) of the Contract:

- i) It is understood that the price component for erection portion of Installation Services comprises a fixed portion and variable portion linked with the index of labour (description and co-efficients as enumerated).

The monthly price adjustment amount for the erection portion of Installation Services component will be computed as per the formula given below :

a) Indian Rupee Portion of the Installation Services

$$ER = ER_1 - ER_0$$

ER₁ will be computed as follows :

$$ER_1 = ER_0 \{0.15 + 0.5 \times 0.85 \times (L_1 / L_0) + 0.5 \times 0.85 \times (W_1 / W_0)\}$$

Where :

ER = Adjustment to Erection portion of Installation Services component of contract price expressed in Indian Rupees payable to the contractor for each billing.

ER₁ = Adjusted amount of Erection portion of Installation Services component of contract price expressed in Indian Rupees payable to the Contractor.

ER₀ = Value of the Erection work done in the billing period, which shall be calculated as under:

For the purpose of computing ER₀, each Erection bill (which is excluding Advance and amount payable on successful completion of **Trial**/Initial Operation and on successful completion of Guarantee tests) during the Erection period upto the 'Completion of the Facilities' shall be divided by a factor as indicated below:

(Erection Portion of Installation Services component of contract price) – (Advance Amount + Erection Portion of Installation services component of Contract Price payable on successful completion of Trail/Initial Operation + Erection Portion of Installation Services component of the Contract Price payable on successful completion of Guarantee Tests)

Erection Portion of Installation Services component of the Contract Price

The payment of price adjustment amount so computed shall be made against a separate invoice, linking the corresponding invoice for Erection Portion of Installation Services payment after retaining the pro-rata amount due on successful completion of **Trial**/Initial Operation and on Completion of the Guarantee Tests. The amounts so retained shall be paid on successful completion of **Trial**/Initial Operation and on successful completion of Guarantee Tests respectively.

L = **Indian field labour** Namely, All India Consumer Price Index for Industrial Workers (All India Monthly Average) as published by Labour Bureau, Simla, Government of India.

F = **Fixed Price component =0.15**

W = The other Index for Indian field labour Namely, Arithmetical average of Minimum Wages for Unskilled, Skilled, Semi-skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher

Subscript 'o' refers to indices / minimum wages as on **Last Date of Bid Submission**

Subscript '1' refers to the indices / minimum wages as applicable for the month of execution of the Installation work.

In case there is a revision in the applicable minimum wages during a month, calculation of 'W1' would take into consideration the weighted average of the applicable wages (wage before revision and wage after revision) and the number of days of applicability of such wages in the month.

For the purpose of this clause, month of execution of installation work shall mean the schedule month of execution of the installation work or actual month of execution of the installation work, whichever is earlier. The schedule date for completion of a particular installation activity shall be as identified in line with provisions of Time schedule, **Chapter-4 to the TCC**.

In case of installation activities which are delayed beyond the schedule date for reasons attributable to the contractor, the price adjustment provision shall not be applicable for the period of time between the schedule date of completion and actual date of completion of the respective installation activity. For this purpose, the schedule date for completion of a particular installation activity shall be as identified in line with provisions of Time Schedule, **Chapter-4 to the TCC**.

(b) Foreign Currency Portion of the Installation Services

$$EE = EE_1 - EE_0$$

~~EE₁ will be computed as follows :-~~

$$EE_1 = EE_0 \left(\frac{EF_1}{EF_0} \right)^{0.15 + 0.85 \times f}$$

Where

~~EE = Adjustment to Installation Services Component of Contract Price expressed in foreign currency payable to the contractor for each billing.~~

~~EE₁ = Adjusted Amount of Installation Services Component of Contract Price expressed in foreign currency payable to the contractor~~

for each billing.

$EE_0 = \frac{\text{Value of foreign currency portion of Erection Work done in the billing period which shall be calculated as under :}}{\text{Installation Component of the Contract Price}}$

For the purpose of computing EE_0 , each bill (which is excluding Advance and amount payable on successful completion of ~~Trial~~/Initial Operation and on successful Completion of the Guarantee Tests) during the Erection period upto the 'Completion of the Facilities' shall be divided by a factor as indicated below:

$$\frac{\text{Installation Component of the Contract Price}}{\text{[Advance Amount + Installation Component of the Contract Price payable on successful completion of Trial/Initial Operation + Installation Component of the Contract Price payable on successful completion of Guarantee Tests]}}$$

Installation Component of the Contract Price

The payment of price adjustment amount so computed (refer S.No. H,Appendix-1) shall be made against a separate invoice, linking the corresponding invoice for Erection Portion of Installation payment after retaining the pro-rata amount due on successful completion of ~~Trial~~/Initial Operation and on Completion of the Guarantee Tests. The amount so retained shall be paid on successful completion of ~~Trial~~/Initial Operation and on successful completion of the Guarantee Tests respectively.

$EF =$ Index for Expatriate Field Labour Component of the Erection Price of Installation Work. Such index shall necessarily be of the country of nationality of the labour.

$f =$ Exchange Rate Correction Factor for Expatriate Labour with reference to currency of country of origin of index for expatriate labour and the respective Contract currency, such that

$$f = Z_0 / Z_1$$

where Z is the no. of units of the currency of the country of origin of index, which is equivalent to one unit of the respective Contract currency. The exchange rates to be used for calculation of factor 'f' shall be as per Bills Selling Exchange Rates established by the STATE BANK OF INDIA.

For the indices, Subscript '0' refers to indices as on Last Date of Bid Submission.

For ' Z_0 ', subscript '0' refers to value as on the date of submission of Envelope-I (Techno-commercial bids).

For the indices, subscript '1' refers to the indices as applicable for the month of execution of the erection work. In case there is a revision in the applicable minimum wages during a month, calculation of ' W_1 ' would take into consideration the weighted average of the applicable wages (wage before revision and wage after

revision) and the number of days of applicability of such wages in the month. ~~For the exchange rates, subscript '1' refers to the exchange rates as applicable on the last day of the month of execution of the erection work.~~ For the purpose of this clause, month of execution of erection work shall mean the schedule month of execution of the erection work or actual month of execution of the erection work, whichever is earlier. The schedule date for completion of a particular erection activity shall be as identified in line with provisions of Time schedule, Chapter 4 to the Contract Agreement.

~~The above formula for foreign exchange portion of Installation Component of Contract Price shall be applicable if the currency in which the contract price has been expressed is different from the currency of country of origin of indices for foreign labour. In other cases, the formula shall be applied without exchange rate correction factor 'f'.~~

~~In case of erection activities which are delayed beyond the schedule date for reasons attributable to the contractor, the price adjustment provision shall not be applicable for the period of time between the schedule date of completion and actual date of completion of the respective erection activity. For this purpose, the schedule date for completion of a particular erection activity shall be as identified in line with provisions of Time Schedule, Chapter 4 to the Contract Agreement.~~

(ix) Site Fabricated Structural Works Price Component

It is understood that the Structural Works Price Component comprises a fixed portion (designated as 'F' and the value of which is specified hereunder) and variable portion linked with the indices for various materials and labour (description and coefficients as enumerated below).

The amount of price adjustment towards variable portion payable/recoverable shall be computed as follows :

$$ESW = ESW_1 - ESW_0$$

ESW_1 will be computed as follows:

$$ESW_1 = ESW_0 \{ F + a \times (A_1/A_0) + b \times (B_1/B_0) + 0.5 \times L_b \times (L_1/L_0) + 0.5 \times L_b \times (W_1/W_0) \}$$

ESW = Adjustment to Structural Works Price Component expressed in the currency of the Contract.

ESW_1 = Adjusted amount of Structural Works Price Component expressed in the currency of the Contract.

For the purpose of computing ESW_0 , each structural bill (which is excluding advance and amount payable on successful completion of Trial/Initial Operation and on successful Completion of the

Guarantee Tests) during the structural work period upto the completion of the facilities' shall be divided by a factor as indicated below :

Structural Component of the contract price – (Advance amount + structural component of the contract price payable on successful completion of Trial/Initial Operation and on successful Completion of the Guarantee Tests)

Structural Component of the Contract Price

The payment of price adjustment amount so computed (refer S.No. H,Appendix-1) shall be made against a separate invoice, linking the corresponding invoice for Structural Work Portion of Installation payment after retaining the pro-rata amount due on successful completion of **Trial/Initial Operation** and on Completion of the Guarantee Tests. The amount so retained shall be paid on successful completion of Initial Operation and on Completion of the Guarantee Tests respectively.

- F = The fixed portion of the Structural Works Price Component shall be 0.20.
- a, b shall be co-efficient of major materials/items involved in the Structural Works Price Component of the Contract Price.
 - A, B shall be published price indices of corresponding major material/items.
 - "Lb" shall be co-efficient for labour component for Structural Works Price Component of Contract Price which shall be 0.15.
 - **L shall be one of the labour indices, namely, Consumer Price Index for Industrial Workers (Gen.) applicable to "All India" as published by Labour Bureau. Shimla of the Govt. of India.**
 - **W shall be the other labour index, which is the Arithmetical average of Minimum Wages for Unskilled, Skilled, Semi-skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher**
 - - Sum of all the material co-efficient and the labour coefficient shall be 0.80.

Subscript '0' refers to indices as on **Last Date of Bid Submission**.

subscript '1' refers to the indices/ minimum wages as applicable for one month prior to the month of execution of the structural work.

In case there is a revision in the applicable minimum wages during a month, calculation of 'W₁' would take into consideration the weighted average of the applicable wages (wage before revision and wage after revision) and the number of days of applicability of such wages in the month.

For the purpose of this clause, month of execution of structural work shall mean the schedule month of execution of the structural work or actual month of execution of Structural Work, whichever is earlier. The schedule date for completion shall be as identified in line with provisions of Time Schedule, **Chapter 4 to the TCC**.

In case of Structural Works activities which are delayed beyond the schedule date for reasons attributable to the contractor, the price adjustment provision shall not be applicable for the period of time between the schedule date of completion and actual date of completion of the respective Structural activity. For this purpose, the schedule date for completion of a particular Structural activity shall be as identified in line with provisions of Time Schedule, **Chapter-4 to the TCC**.

(x) Price adjustment for civil works component of the Contract Price [including construction materials and excluding Demolition of existing structures (if applicable) price]

The prices quoted by the bidder shall be base price, which will be subjected to price adjustment in accordance with the conditions and formula prescribed herein and further subject to satisfying the requirement specified in this clause.

A fixed percentage of the civil works component of the contract price shall be firm and shall not be subject to any price adjustment. The balance portion of the civil works component of the contract price shall be subject to price adjustment on account of changes in materials and labour as detailed below :

$$CV = CV_1 - CV_0$$

CV₁ will be computed as follows :

$$CV_1 = CV_0 \{ F + m \times (M_1/M_0) + d \times (D_1/D_0) + s \times (S_1/S_0) + c \times (C_1/C_0) + 0.5 \times L_b \times (L_1/L_0) + 0.5 \times L_b \times (W_1/W_0) \}$$

Where,

CV = Adjustment to civil works component expressed in the currency of the contract payable to the contractor for each billing period.

CV₁ = Adjusted amount of Civil Works Price Component of contract price i.e. value of work done after application of above price adjustment formula in the billing period.

CV₀ = Base Value of Civil Works Price Component of contract price, i.e. the value of the Civil work done in the billing period as per the monthly billing schedule for which the price adjustment is to be calculated.

CV₀ shall be calculated as under:

Each Civil Works bill (which is excluding advance and amount payable on successful completion of **Trial**/Initial Operation and on successful Completion of the Guarantee Tests) during the Civil Works period upto the 'completion of the facilities' shall be divided by a factor as indicated below :

Civil Works Component of contract price – (Advance amount + Civil Works component the contract price payable on successful completion of Trial/Initial operation + Civil Works Component of the Contract Price payable on successful completion of Guarantee Tests)

Civil Works Component of the Contract Price

The payment of price adjustment amount so computed (refer Terms of payment) shall be made against a separate invoice, linking the corresponding invoice for Civil Works Portion of Installation payment after retaining the pro-rata amount due on successful completion of **Trial**/Initial Operation and on Completion of the Guarantee Tests. The amount so retained shall be paid on successful completion of Initial Operation and on Completion of the Guarantee Tests.

F = Fixed portion of the contract price which will not be subjected to any adjustment under this formula or otherwise which will be 0.20.

m = Coefficient of material (excluding cement & steel) content in the cost of civil portion of the work which will be 0.15.

d = Coefficient of High Speed Diesel Oil (P.O.L) content in the cost

of civil portion of the work which will be 0.05.

- s = Coefficient of steel content in the cost of civil portion of work which will be 0.25.
- c = Coefficient of cement content in the cost of civil portion of work which will be 0.10.
- Lb = Coefficient of labour (for all categories) content in the cost of civil portion of the work which will be 0.25.
- M = Material Index, namely, Index No. of wholesale price under group. "All commodities" as published by office of the Economic Adviser, Government of India.
- D = High Speed Diesel Oil price, namely price of High Speed diesel oil, at Pump Station of India Oil Corporation nearest to the project site. (selling price inclusive of taxes and duties as per litre of H.S.D. Oil).
- S = Index for steel content shall be "Mild Steel-Long Products"/ "Mild Steel-Flat Products" as published by Ministry of Commerce and Industry, GOI.
- C = Index for "Pozzolana Cement " as published by Ministry of Commerce and Industry, GOI.
- L = **Labour Indices, namely, Consumer Price Index for Industrial Workers (Gen.) applicable to "All India" as published by Labour Bureau. Shimla of the Govt. of India.**
- W = **Arithmetical average of Minimum Wages for Unskilled, Skilled, Semi- skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher**

Subscript

- 'o' = Refers, to the values of above-mentioned minimum wages, labour, material, steel and cement indices, and for diesel price as on **Last date of submission of bids.**
- '1' = Refers to values of corresponding minimum wages, labour, material, steel and cement indices, and for diesel price as applicable for one month prior to month in which the Civil work is executed.

In case there is a revision in the applicable minimum wages during a month, calculation of 'W1' would take into consideration the weighted average of

the applicable wages (wage before revision and wage after revision) and the number of days of applicability of such wages in the month.

For the purpose of this clause, month of execution of civil work shall mean the schedule month of execution of Civil work or actual month of execution of Civil Work, whichever is earlier. The schedule date for completion shall be as identified in line with provisions of Time Schedule, Chapter 4 to the TCC.

In case of Civil Works activities which are delayed beyond the schedule date for reasons attributable to the contractor, the price adjustment provision shall not be applicable for the period of time between the schedule date of completion and actual date of completion of the respective Civil Work activity. For this purpose, the schedule date for completion of a particular Civil Work activity shall be as identified in line with provisions of Time Schedule, **Chapter 4 to the TCC**.

- (xi) The following components of the contract price shall not be subject to price adjustment and shall remain firm during the execution of the contract:
 - ~~(1) Ocean Freight and Marine Insurance for Plant and Equipment, mandatory spares and recommended spares.~~
 - (2) Inland Transportation charges (including Inland Transit Insurance, port clearance, port handling & port charges) for plant & equipment and Spare Parts.
 - ~~(3) Type Test Charges (if any)~~
 - (4) Training Charges (if any)
 - (5) Annual Maintenance Contract (AMC) Charges (if any).
 - (6) Demolition of existing structures component of Contract Price (if applicable)
- (xii) The value of co-efficients and the source of applicable indices and their base values for the purpose of computing price adjustment under the contract shall be as under:

A. Ex-Works/FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Steam Generator Systems excl. Factory Fabricated Structures, Electrical Systems & C&I System as specified in Technical Specification and in coherence to Price Schedule)*

Sl. No	Item / Name of published index	Value of Co-efficient	Name of published index and its origin	Value of Indices (as on Last Date of Bid Submission).
Fixed Component F = 0.15				
	Material			
1	All commodities	a = 0.35	Economic Adviser/RBI Bulletin Base Year 2022-23=100	
2	Manufacture of other fabricated metal products	b = 0.05	Economic Adviser/RBI Bulletin Base Year 2022-23=100	
3	Manufacture of Basic Metals	c = 0.1	Index: Manufacture of Basic Metals Origin: Economic Adviser/RBI Bulletin Base Year: 2022-23=100	
4	Labour All India Consumer Price Index Number for Industrial Workers (All India Monthly Average)	Lb = 0.35	Labour Bureau Shimla / RBI Bulletin	

B. Ex-Works/FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Steam Turbine Generator Systems excl. Factory Fabricated Structures, Electrical Systems and C&I System as specified in Technical Specification and in coherence to Price Schedule)*

Sl. No	Item/ Name of published index	Value of Co-efficient	Name of published index and its origin	Value of Indices (as on Last Date of Bid Submission).
Fixed Component F = 0.15				
	Material			
1	All commodities	a = 0.35	Economic Adviser/RBI Bulletin Base Year 2022-23=100	
2	Manufacture of other fabricated metal products	b = 0.05	Economic Adviser/RBI Bulletin Base Year 2022-23=100	
3	Manufacture of Basic Metals	c = 0.1	Economic Adviser/RBI Bulletin Base Year 2022-23=100	
4	Labour All India Consumer Price Index Number	Lb = 0.35	Labour Bureau Shimla / RBI Bulletin	

	for Industrial Workers (All India Monthly Average)			
--	--	--	--	--

- c. **Ex-Works/FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Balance of Plant Systems excl. Factory Fabricated Structures, Electrical Systems and C&I System as specified in Technical Specification and in coherence to Price Schedule)***

Sl. No	Item / Name of published index	Value of Co-efficient	Name of published index and its origin	Value of Indices (as on Last Date of Bid Submission).
Fixed Component		F = 0.15		
	Material			
1	All commodities	a = 0.35	Economic Adviser/RBI Bulletin Base Year 2022-23=100	
2	Manufacture of other fabricated metal products	b = 0.05	Economic Adviser/RBI Bulletin Base Year 2022-23=100	
3	Manufacture of Basic Metals	c = 0.1	Economic Adviser/RBI Bulletin Base Year 2022-23=100	
4	Labour All India Consumer Price Index Number for Industrial Workers (All India Monthly Average)	Lb = 0.35	Labour Bureau Shimla / RBI Bulletin	

- d. **Ex-Works/FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Electrical Systems and C&I System as specified in Technical Specification and in coherence to Price Schedule)***

Sl. No	Item / Name of published index	Value of Co-efficient	Name of published index and its origin	Value of Indices (as on Last Date of Bid Submission).
Fixed Component		F = 0.15		
	Material			
1	All commodities	a = 0.35	Economic Adviser/RBI Bulletin Base Year 2022-23=100	
2	Manufacture of	b = 0.05	Economic Adviser/RBI	

	other fabricated metal products		Bulletin Base Year 2022-23=100	
3	Manufacture of Basic Metals	c = 0.1	Economic Adviser/RBI Bulletin Base Year 2022-23=100	
4	Labour All India Consumer Price Index Number for Industrial Workers (All India Monthly Average)	Lb = 0.35	Labour Bureau Shimla / RBI Bulletin	

E. Ex-Works/FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Factory Fabricated Structures as specified in Technical Specification and in coherence to Price Schedule) *

S. NO	Item	Value of Co-efficient	Name of published index and its origin	Value of Indices (as on Last Date of Bid Submission).
Fixed Component F =0.15				
	Material			
a	Hot Rolled Steel Coils/Sheets/Strips	a =0.45	Index for "Hot Rolled Steel Coils/Sheets/Strips" as published by Ministry of Commerce and Industry, GOI (Base Year 2022-23)	
b	Manufacture of fabricated metal products -Structural metal product	b=0.15	Index for "Manufacture of structural metal products" as published by Ministry of Commerce and Industry, GOI (Base Year 2022-23)	
	Labour	Lb = 0.25	Consumer Price Indices for Industrial Workers (All India General) as published by Labour Bureau Shimla / RBI Bulletin	

F. Ex-Works/FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Any other Items not covered in A to E above, in coherence to Price Schedule)* : Not Applicable

G. Installation Price Component*

S.No.	Item	Value of Coefficient Submission	Name of published index and its origin	Value as on Last Date of Bid
-------	------	---------------------------------------	---	---------------------------------

Fixed Portion F = 0.15

(i)	Indian Field Labour	0.5 x 0.85	All India Consumer Price index for industrial workers (All Indian Monthly Average) published by Labour Bureau, Simla, Govt. of India	
(ii)		0.5 x 0.85	Arithmetical average of Minimum Wages for Unskilled, Skilled, Semi-skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher	
	Expatriate Labour (EF)	0.85		

H. Civil Works Price Component*

S. NO	Item	Value of Co-efficient	Name of published index and its origin	Value of Indices (as on Last Date of Bid Submission).
Fixed Component F =0.20				
	Material			
1i)	Labour	$0.5 \times L_b = 0.5 \times 0.25$	Consumer price index for industrial workers (All India General) as published by Labour Bureau, Shimla.	
1 ii)	Labour	$0.5 \times L_b = 0.5 \times 0.25$	Arithmetical average of Minimum for Unskilled, Skilled, Semi skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher	
2	Material (excluding cement & steel)	$m=0.15$	Index no. of wholesale Price under group "All Commodities" as published by Ministry of Commerce)Industry, GOI (Base Year: 2022-23)	
3	High speed diesel	$d=0.05$	Price of high speed diesel oil per litre at the Indian Oil Corpn. outlet nearest to the project (selling price inclusive of taxes & duties, if any)	
4	Steel	$s=.25$	Index for steel content shall be "Bars and Rods of Mild steel" as published by Ministry of Commerce and Industry, GOI. (Base Year: 2022-23)	
5	Cement	$C=0.10$	Index for "Portland Pozzolana Cement(PPC)" as published by Ministry of Commerce and Industry, GOI. (Base Year: 2022-23)	

D Site Fabricated Structural Works Price Component*

Item	Coefficient	Value of Coefficient	Name of Published Index and its origin	Value of Base Indices (Last date of bid submission)
Material: a.) Hot Rolled Coils & Sheets	(a)	0.50	Index for "Hot Rolled (HR) Coils & sheets, including Narrow Strip" under sub-group of "Mild Steel -Flat Products" under Group of "Manufacture of Basic Metals" as published by Ministry of Commerce and Industry, GOI (Base Year: 2022-23)	
b.) Manufacture of Fabricated Metal Product-Structural Metal Products	(b)	0.15	Index for "Manufacture of structural metal products" under Group of "Manufacture of Fabricated metal products, except Machinery and Equipment" as published by Ministry of Commerce and Industry, GOI (Base Year: 2022-23)	
c.) Labour :		$0.5 \times I = 0.5 \times 0.15$ $0.5 \times I = 0.5 \times 0.15$	Consumer price index for industrial workers (All India General) as published by Labour Bureau, Shimla. Arithmetical average of Minimum Wages for Unskilled, Skilled, Semi-	

			skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher	
d.) Fixed Component	F_s	0.20		

* The above information shall be filled in at the time of Contract Agreement signing based on price adjustment data offered by the bidder.

Note: Bidder is required to necessarily quote the indices w.r.t. price adjustment for each component of price schedules for which the price break-up has been asked for/furnished such as SG System, STG System, BOP Systems, Electrical and C&I System and Factory Fabricated Structures