SUPERINTENDING ENGINEER
CONTRACTS & MONITORING

Chennai Metropolitan
Water supply
and
Sewerage Board

No.1, Pumping Station Road, Chennai - 600 002
FAX : 044-2845 4336 E-Mail:secandm@cmwssb.in

Lr. No. CMWSSB/CNT/WSS/NCB/AMRUT–GoTN/400MLD/CP4/012/2024-25 dt 01.07.2025

To

Sir,

Sub: CMWSSB - C&M Wing – Implementation of continuous Water Supply of Pallipattu WDS & Thiruvanmiyur WDS under Area XIII of Chennai City under Hybrid Annuity Model (HAM) – e-Tender invited – Replies to Queries I and Addendum - II has been prepared – forwarded - Reg

Ref : Tender No. CNT/WSS/NCB/AMRUT–GoTN/400MLD/CP4/012/2024-25

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With reference to the above work, Replies to Queries I and Addendum - II have been prepared and enclosed herewith. You are requested to take these Replies to Queries I and Addendum - II into due consideration while submitting your bid. All the other terms and conditions already stipulated remain unaltered.

The bid documents will be available for submission up to 3.00 P.M. on 17.07.2025. The Tender can be uploaded up to 3.00 P.M. on 17.07.2025. The Tender will be opened on 18.07.2025 from 3.30 P.M. onwards.

You are requested to acknowledge the receipt of this letter.

SUPERINTENDING ENGINEER
(CONTRACTS & MONITORING)

Encl :
1. Confirmation Letter – Pg. 2
2. Replies to Queries I – Pg.3 to 87
3. Addendum - II – Pg.88 to 103
4. Annexure – I – Pg.104 to 116
5. Annexure – II – Pg.117 to 130

## Replies to Queries I and Addendum - II

Name of Work: Implementation of continuous Water Supply of Pallipattu WDS & Thiruvanmiyur WDS under Area XIII of Chennai City under Hybrid Annuity Model (HAM)

Tender No: CNT/WSS/NCB/AMRUT–GoTN/400MLD/CP4/012/2024-25

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We have taken into due consideration of the Replies to Queries I and Addendum - II while submitting our bid.

Signature of the bidder

Name and Address of the bidder

## Replies to Queries I

Name of Work: Implementation of continuous Water Supply of Pallipattu WDS & Thiruvanmiyur WDS under Area XIII of Chennai City under Hybrid Annuity Model (HAM)

Tender No: CNT/WSS/NCB/AMRUT–GoTN/400MLD/CP4/012/2024-25

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| 1 | RFP VOLUME – II SCHEDULES | Page 17 3.3.2. Distribution Network Improvement d) House service connection | The house connections are to be provided with saddles and compression fittings. An AMR flow meter with AMI Infrastructure shall be installed with an isolation valve at consumer point. The AMR meters to communicate data to gateways through LORA band/free wireless RF and from gateways to server through GSM services. | All the AMR & AMI Smart Water meters communicate wirelessly over free RF band Hence request to change & add free wireless RF band | Bid Conditions confirmed. |
| 2 | RFP VOLUME – II SCHEDULES | Page 17 3.3.3. Data Collection, Monitoring, Command and Control | Wireless Communication Through LORA band / free wireless RF band | All the AMR & AMI Smart Water meters communicate wirelessly over RF band. Hence request to change & free wireless RF band. | Bid Conditions confirmed. |
| 3 | RFP VOLUME – II SCHEDULES | Page 18 3.3.3. Data Collection, Monitoring, Command and Controlage 18 | Network Meter Reading Device | Please clarify what is Network Meter Reading Device? | Refer Addendum - II, Sl. No. 2 |
| 4 | RFP VOLUME – | | Consumer Meters: Once in | The replacement period of Consumer | Refer Addendum - II, Sl. |

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| | II SCHEDULES | Page 25 3. Asset Replacement | [4] years or as and when required Consumer Meters: Once in [15] years or as and when required | meters under 3. Asset Replacement &4. Preventive Maintenance does not match. Under clause 4. Preventive Maintenance it is specified as 15 years. Hence change to 15 years under Asset Replacement. | No.3 |
| 5 | RFP VOLUME-II SCHEDULES | Page66 1.2.3 House Service Connection | g. The Consumer meters shall be of AMI enabled AMR Smart Water meters conforming to relevant IS standards and shall have been certified by EEC/OIML & IP-68. The meters shall be installed in lockable meter chambers made of strong rigid plastic materials | EEC has been replaced by MID (B+D, H). This is already specified under the Technical Specification. Hence please make the changes. | Refer Addendum - II, Sl. No.4 |
| 6 | RFP VOLUME – II SCHEDULES | Page 116-118 | 1] Technical Specifications for Consumer Water Meters | In this project one of the major components is Electromagnetic / Ultrasonic AMI Water meters and detailed specification will help to get the quality and proven products. | Bid Conditions confirmed. |
| 7 | | RFP | Warranty period of AMI enabled AMR Smart Water meters not mentioned | Warranty period of AMI enabled AMR Smart Water meters not mentioned. Good Quality Smart Water meters are available with more than 10 years of Warranty. Please specify the same. | AMI Smart meters warranty shall be covered for the entire concession period. |
| 8 | | RFP | Electromagnetic/Ultrasonic AMI Water meter Size wise quantity is not mentioned. | Request you to kindly share Electromagnetic/Ultrasonic AMI Water meter Size wise quantity | Smart AMI water meter:<br>Size (mm) / Numbers<br>15 / 37124<br>20 / 772 |

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| | | | | | 25 \| 772<br>Total \| 38668 |
| 9 | | Volume 1 - 1.1.2 a.<br>Page no 10 of 81 | Extend the existing water distribution to achieve full coverage of customers within the project area. In Project Area (Page no 9 of 81) - The existing water network infrastructure within the project area comprises of 6.97 km of Zonal feeder main and 44.24 km of DMA 10 feeder main and a total length of water distribution network of 326.47 km | We presume total Network is 326.47 KM - Kindly may confirm. Kindly share individual length with sizes of Ductile Iron (DI), Cast Iron (CI) & Mild Steel(MS). Kindly confirm ageing of Pipes. Please confirm if any condition assessment report, GIS drawing for the existing Pipe lines are existing | Refer Corrigendum - I, Clause No.3.2.4 |
| 10 | | Volume 1 - 1.1.2 b.<br>Page no 10 of 81 | Optimize the performance of the existing water distribution system to ensure delivery of at least an average 150 lpcd water supply per person at a minimum pressure of 17m conforming to the National Service Level Benchmarks fixed by MoHUA. | What is the present LPCD water supply per person with minimum pressure at tail end of network pipe for every zone. Also, please confirm if any hydraulic modelling has been done and report for such studies are available or not? | Refer Corrigendum - I |
| 11 | | Volume 1 - 1.1.2 c.<br>Page no 10 of 81 | Transform the prevailing intermittent water supply system to a continuous pressurized water supply system | Presently how much hours and quantity (MGD/MLD) intermittent water supply in the system. What is the pressure which is maintained at farthest end. | Refer Corrigendum-I |
| 12 | | Volume 1 - 1.1.2 d.<br>Page no 10 of 81 | Provide well engineered and tested customer service connections duly installed with 100% metering in the project area | Kindly confirm no of present House service connection and ultimate no of connection to be done with water meter. | Refer Corrigendum - I |

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| 13 | | Volume 1 - 1.1.2 e.<br>Page no 10 of 81 | Reduce non-revenue water to less than 20% and sustain and further reduce during the contract period | What is the Present NRW in the designated area? | Refer Corrigendum - I, Clause No.10.1<br><br>The Bidder to conduct its own study and assessment |
| 14 | | Volume 1 - 1.1.2 f.<br>Page no 10 of 81 | Establish and improve the quality and timely response of customer services and complaint redressal to 90% efficiency | Kindly mention the parameters to improve water quality as treatment of Water is not in bidder scope. | Refer Corrigendum - I, Clause No.9.3 |
| 15 | | Volume 1 - 1.1.2 h.<br>Page no 10 of 81 | Improve the revenue billing and collection efficiency in compliance to the requirements of key performance indicators. | Please share the present total revenue billing in every month, what is the billing software being used currently, is there a need to have a new billing software. | Current Collection efficiency of the Project WDS is around 88% for the FY 2024-25.<br>At present CMWSSB uses custom developed billing software. The features may be assessed by the bidder on its own.<br>Bid Conditions confirmed. |
| 16 | | Volume 1 - 1.1.2 g.<br>Page no 11 of 81 | Fulfilment of the KPIs | Please mention the KPIs and same should be applicable only after completion of Construction work. | Bid Conditions confirmed. |
| 17 | | Volume 1 - 2.1.6 . | The Bidder shall deposit a Bid Security for an amount as | Whether proof of Bank Guarantee option is available in the tender portal | Proof of Bank Guarantee option is available in the |

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| | | Page no 16 of 81 | mentioned in Data Sheet above, in accordance with the provisions of this RFP. The Bidders will have an option to provide Bid Security in the form of online transfer through e-procurement portal or Bank Guarantee acceptable to the Authority, as per the format at Appendix-II. The Bidders shall also make online payment, if applicable, to the Authority towards the Tender Processing Fee mentioned in the Data Sheet above. | for submission of the tender. | e procurement portal.<br><br>Bid Conditions confirmed. |
| 18 | | Volume 1 - 3.19.1.<br>Page no 36 of 81 | The Bidder shall furnish as part of its Bid, a Bid Security referred to in Clauses 2.1.6 and 2.1.7 hereinabove through online transfer or on e-procurement portal or Bank Guarantee, in favour of the Authority in the format at Appendix-II (the "Bank Guarantee") and having a validity period of not less than 180 (one hundred eighty) days from the Bid Due Date and a claim period of 60 (sixty) days, and may be extended as may be mutually agreed between the Authority and the Bidder from time to | Whether proof of Bank Guarantee option is available in the tender portal for submission of the tender. | Proof of Bank Guarantee option is available in the e procurement portal.<br><br>Bid Conditions confirmed. |

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| | | | time | | |
| 19 | | Volume 1 - 2.2.4 A.<br>Page no 26 of 81 | "Technical Capacity"), the following shall be considered:<br>A1. Technical Capacity – Implementation the Bidder shall, over the past 7 (seven) financial years preceding the Bid Due Date, have:<br>paid for development of Eligible Project(s) in Category 1 and/or Category 2 specified in Clause 3.4.1; and/ or collected and appropriated revenues from Eligible Project(s) in Category 1 and/or Category 2 specified in Clause 3.4.1, iii. paid for, or received payments for, construction of Eligible Project(s) in Category 3 and/or Category 4 specified in Clause 3.4.1. such that the sum total of the above (cumulative for the project period), as further adjusted in accordance with clause 3.4.7, is more than Rs. 500 crore (Rupees Five Hundred Crore only) (the "Threshold Technical Capacity - Implementation"). Provided that at least one fourth of the Threshold Technical Capacity | Refer Clause no to be 4.4.1 & 4.4.3 instead 3.4.1 for category of experience.<br>There is no 3.4.7 & 3.4.4 clause in the document. Hence kindly mention correct clause.<br>Kindly consider Threshold Technical Capacity - Implementation" CAPEX and OPEX both as this project pertaining to both CAPEX and OPEX work.<br>For this purpose, a similar project shall be considered to be completed, if more than 80% of the value of work has been completed and such completed value of work is equal to or morethan Rs. 60 crore (Rupees Sixty Crore only). | Refer Addendum - I<br><br>Bid Conditions confirmed. |

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| | | | shall be from the Eligible Projects in Category 1 and/ or Category 3 specified in Clause 3.4.1. Provided that at least one similar work with an aggregate project cost of at least (i) Rs. 60 crore (Rupees Sixty Crore only) from the Eligible Projects shall… | | |
| 20 | | Volume 1 - 4.4.1 a.<br>Page no 38 of 81 | For the purpose of this RFP: Water sector would be deemed to include water treatment plants, water supply transmission networks, water supply distribution networks, sewerage, waste water /sewage / effluent treatment plants, waste water /sewage / effluent collection and transmission networks, desalination plants; | For the purpose of this RFP: Water sector would be deemed to include water treatment plants/Re-habitation of water treatment plant/UGR/ water supply transmission networks/, water supply distribution networks/ House service connection/SCADA,sewerage, wastewater /sewage / effluent treatment plants, waste water /sewage / effluent collection and transmission networks, desalination | Bid Conditions confirmed. |
| 21 | | Volume 1 - 2.4.4 B.<br>Page no 27 of 81 | Financial Capacity: The Bidder shall have a minimum Net Worth (the "Financial Capacity") of Rs. 125 crore (Rupees One Hundred and Twenty Five Crore only) at the close of the preceding financial year2 | In the case of a Consortium, the combined technical capacity and net worth should be positive in the Tender as Consortium. Net worth shall mean the sum of subscribed and paid-up equity share capital and reserves from which shall be deducted the sum of revaluation reserves, miscellaneous expenditure not written off and reserves not available for distribution to equity share holders. = (Subscribed and Paid-up Equity + Reserves) less | Bid Conditions confirmed. |

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| | | | | (Revaluation reserves + miscellaneous expenditure not written off + reserves not available for distribution to equity shareholders). | |
| 22 | | Volume 1 - 2.1.15 c.<br>Page no 17 of 81 | The Consortium Members whose Technical Capacity and Financial Capacity have been submitted for qualifying in this Bid shall subscribe and hold until the 3rd (third) anniversary of the date of commercial operation of the Project, equity share capital in a manner that:<br>the Member whose Technical Capacity had been evaluated shall hold not less than 51% (fifty one percent) of the subscribed and paid-up equity of the Concessionaire and the Member whose Financial Capacity had been evaluated shall hold not less than 26% (twenty six percent) of the subscribed and paid-up equity of the Concessionaire and together all the members of the Consortium shall hold 100% (hundred percent) of the subscribed and paid-up equity of the Concessionaire. After the third anniversary of the date of the commercial operation of the Project, the | The Consortium Members whose Technical Capacity and Financial Capacity have been submitted for qualifying in this Bid shall subscribe and hold until the 3rd (third) anniversary of the date of commercial operation of the Project, equity share capital in a manner that:<br>the Member whose Technical Capacity-O & M had been evaluated shall hold not less than 51% (fifty one percent) of the subscribed and paid-up equity of the Concessionaire and the Member whose Financial Capacity had been evaluated shall hold not less than 26% (twenty six percent) of the subscribed and paid-up equity of the Concessionaire and together all the members of the Consortium shall hold 100% (hundred percent) of the subscribed and paid-up equity of the Concessionaire. After the third anniversary of the date of the commercial operation of the Project, the Consortium Members whose Financial Capacity had been evaluated shall be permitted to exit the Concessionaire. The Member whose Technical Capacity in relation to O&M experience had been evaluated shall continue to hold not less | Bid Conditions confirmed. |

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| | | | Consortium Members whose Financial Capacity had been evaluated shall be permitted to exit the Concessionaire. The Member whose Technical Capacity in relation to O&M experience had been evaluated shall continue to hold not less than 26% (twenty-six percent) of the subscribed and paid-up equity of the Concessionaire. Provided further that the Consortium Members shall together continue to hold 51% (fifty-one percent) of the subscribed and paid-up equity of the Concessionaire of which the Member whose Technical Capacity in relation to O&M experience had…. | than 26% (twenty-six percent) of the subscribed and paid-up equity of the Concessionaire. | |
| 23 | | Nil | Requirement for a specific brand/model of SCADA. | Is there a requirement for a specific brand/model of SCADA, or can bidders propose customized solutions? Allowed flexibility in. | Refer Volume-II, Schedule-M, Sl.No.37.<br><br>Bid Conditions Confirmed. |
| 24 | | Volume 1 Clause no: SCADA selection. 1.1.2 c | Financing of the Project up to 40% of the Bid Project Cost (Construction). | 60% fund must be available into the escrow account during the construction period. | Refer Volume-II, Clause.No.23.4.<br><br>Bid Conditions |

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| | | Page no: 10 | | | confirmed. |
| 25 | | Nil | Recovery of 40% Investment | | Refer Corrigendum - I for Financial Model |
| 26 | | Nil | Escalation Factor. | Please include "the escalation factor to be added in the contract for CAPEX & OPEX as per WPI & CPI and financial year shall be the period commencing from Bid submission date". | Refer Volume - II, Clause No.23.2.<br>Bid Conditions confirmed. |
| 27 | RFP VOLUME – II SCHEDULES | Page no. 117 - Item No. 5.1.3 – Technical Specification for Bulk Water Meters | The meter shall confirm ISO 4064 standard with EEC certification. | Please be noted that EEC certification is no more valid. In view of this MID approved meters should be acceptable. | Refer Addendum - II, Sl.No.4 |
| 28 | | NA | Tender Technical specification does not mention the minimum technical / functional requirements forof Data Collection & MDM Solution. | Request you to please specify minimum technical / functional requirements for Data Collection & MDM Solution. | Refer Volume - II, Draft Concession Agreement, SCHEDULE B, Clause.No.3.3.3<br><br>Bid Conditions confirmed. |
| 29 | | NIT Dated: 13.03.2025 | -- | DPR with all annexures in editable format | Refer Corrigendum - I |
| 30 | | NIT Dated: 13.03.2025 | -- | GIS Network drawing, hydraulic modeling, and other drawing in appropriate (shp or gbd and dwg or dxf) format. | Refer Corrigendum - I |
| 31 | | NIT Dated: 13.03.2025 | | CMWSSB's financial model. | Refer Corrigendum - I |
| 32 | | NIT Dated: 13.03.2025 | | please allow site visit to be conducted a week after studying the DPR and prepare the queries thereof | Site visits can be facilitated based on the official request of the |

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| | | | | | bidders with dates. |
| 33 | Volume II - Part 2 DCA(Schedules) | Pg No: 115 | Technical Specifications for Consumer Water Meters<br><br>Class of Meter<br><br>Class 2 Water meters in accordance with ISO4064:2014. **Operating range ratio (Q3/Q1) = R500** | As CPHEEO Manual for 24x7 Drinking Water, issued in March 2024, the Ministry of Housing & Urban Affairs has prescribed operating range ratio Q3/Q1 as R400. Copy of the Extract of the relevant portion of the Manual attached.<br><br>By prescribing R500, will increase the cost of the meter and also give advantage to a few foreign suppliers of the meters without any additional advantage to CMWSSB. This will also compromise on competitive bid. | Bid Conditions Confirmed |
| 34 | Corrigendum_I_01 2<br>Clause/Document: 6.10.2 | Page No: 134 | **Advantages of Electromagnetic and Ultrasonic meters**<br><br>The meters provide wide **operating flow range Ratio (Q3/Q1) 500:1.** Hence suitable for measurements of consumption at very low flow to high flow. This helps in NRW reduction.<br><br>Dynamic Ratio (Q3/Q1): **Minimum of 500:1** | **Amendment sought:**<br><br>The meters provide wide **operating flow range Ratio (Q3/Q1) 400:1.** Hence suitable for measurements of consumption at very low flow to high flow. This helps in NRW reduction.<br>Dynamic Ratio (Q3/Q1): **Minimum of 400:1** | Bid Conditions Confirmed. |
| 35 | Corrigendum_I_01 2<br>6.10.2 | Page No.: 134 | MID certified meters & **meter manufacturing plant** | There is no agency in India to give MID certificate for meters or meter manufacturing plant. It is possible to send sample meters to Europe and get the MID certification for meters. However, same is not possible to get | Corrigendum - I is only for reference.<br><br>Bid Conditions confirmed. |

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| | | | | MID certificate for meter manufacturing plant if plant is located in India. This is restrictive condition against Make in India if insisted upon, local manufacturing will never happen.<br><br>**Amendment sought:**<br>**The words "meter manufacturing plant" should be deleted.** | |
| 36 | Volume II - Part 2 DCA(Schedules) | Page No.: 166 | **Concessionaire's obligation**<br><br>Open House Quarterly Meeting<br><br>v. The Concessionaire shall install Customer metering on all points of Customer supply and randomly check the calibration of meters installed for accurate reading to establish accurate water balance and monitor water losses; | Under Concessionaire's Obligations, the Concessionaire is required to randomly check the calibration of meters installed for accurate reading to establish accurate water balance and monitor water losses. Unfortunately, the established suppliers are mostly traders / Indian agent of foreign OEMs or even foreign OEMs are having only marketing offices. In order to meet this condition, the Concessionaire is required to establish their own Calibration & Testing machine for Electromagnetic / Ultrasonic water meters.<br>**Amendment sought:**<br>**The Concessionaire should set up, either its own or the OEM, an automatic Calibration & Testing machine in India, confirming to ISO 17025:2017** | Bid Conditions confirmed. |
| 37 | Vol 1, Instructions to Bidders | 18 / 2.1.15 | Where the Bidder is a single entity, it shall be required to form an appropriate Special Purpose Vehicle, incorporated under the Indian | In terms of complexity in corporate governance, an incorporated company is much more complex than an unincorporated SPV ("Association of Persons or AOP") structure. We request | Bid Conditions confirmed. |

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| | | | Companies Act 2013 (the "SPV"), to execute the Concession Agreement and implement the Project. In case the Bidder is a Consortium, it shall, in addition to forming an SPV, comply with the following additional requirements:… | Authority to give flexibility to the bidders to choose the suitable structure – Incorporated company or AOP. Please confirm. | |
| 38 | Vol 2, Draft Concession Agreement | 115 / 25 | Escrow Account | We understand that the User Charges so deposited by the Concessionaire in the Escrow Account will be used to make payments due to the Concessionaire.<br><br>However, in case the deposited User Charges are less than the invoice(s) value to be released to the Concessionaire, we understand that the shortfall will be compensated using CMWSSB's (Authority) other revenue streams, which is being collected and deposited by the Authority in its separate bank account.<br><br>Hence, it is our understanding that in all such cases, the Authority shall transfer the shortfall amount from its other accounts (where user charges from the consumers is being collected and deposited by the Authority) to the Escrow Account.<br><br>Please confirm. | Schedule T of Draft Concession Agreement, Vol. II abundantly clarifies. |

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| | | | | | |
| 39 | Vol 2, Draft Concession Agreement | 117 / 25.5 | Payment Security Mechanism | For better financial/payment security against the payments to be made to the Concessionaire under the Concession Agreement and to avoid any ambiguity, we request you to please modify this clause, as follows:<br><br>"Tamil Nadu Infrastructure Development Fund (TNIDF), operated by Tamil Nadu Infrastructure Development Board (TNIDB), shall act as the backstop guarantor ee for this project. In case the Authority fails to ensure Minimum Escrow Balance in terms of Clause 25.2.2 of this Agreement, then the Escrow account shall be replenished in the following manner: by drawing funds from the TNIDF upon request of the Concessionaire or Authority, subject to the approval of TNIDB's sub-committee.<br><br>The proposed backstop guarantees will be offered through a Standby Letter of Credit (SBLC) structure to be issued by a commercial bank (SBLC Bank, as a beneficiary of the backstop guarantee to be issued by TNIDF, subject to the approval of TNIDB's sub-committee. The SBLC will be drawn by the Escrow Agent if Authority fails to transfer the Minimum Escrow Balance or replenish the shortfall in the Minimum Escrow Balance in the Escrow Account. Once | Bid Conditions confirmed. |

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| | | | | the SBLC is drawn, the amount drawn converts into a short-term loan to Authority under a Reimbursement and Credit Agreement (RCA) to be executed between Authority and the SBLC Bank. If Authority fails to repay the SBLC Bank this short-term loan within the agreed repayment duration under the RCA, the SBLC Bank shall have the right to call on the backstop payment guarantee issued by TNIDF." | |
| 40 | | | New Clause<br>(Limitation of Liability) | It is requested that the Concessionaire's aggregate liability under the Concession Agreement should be capped. Hence, we request you to please insert a new language in the draft Concession Agreement, as follows:<br><br>"Neither Party shall be liable to the other Party for loss of use of any works, loss of profit, loss of any contract or for any indirect or consequential loss or damage which may be suffered by the other Party in connection with this Agreement.<br><br>The total liability of one Party to the other Party under and in accordance with the provisions of this Agreement shall not exceed the 20% (twenty percent) of the Bid Project Cost during the Construction Period and 50% (fifty percent) of the O&M Quote for the applicable Concession Year during the Initial Operation Period and Operation | Bid Conditions confirmed. |

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| | | | | Period. For the avoidance of doubt, this Article shall not limit the liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party." | |
| 41 | | | New Clause<br>(Advance Payment) | The Concession Agreement does not seem to have provision for advance payment. It may please be noted that advance payment is a very important payment milestone to enable concessionaire to deploy resources and machinery at project site. Hence, we request you to please insert following language in the concession draft:<br><br>"If the Concessionaire opts for Mobilization Advance, the Concessionaire shall provide to the Authority no later than 15 (fifteen) days from the date of such request, an irrevocable and unconditional guarantee from a Scheduled Bank for a sum equivalent to the Mobilization Advance (the "Mobilization Advance Security"). The Authority shall, on request of the Concessionaire, made at any time after submission of the Mobilization Advance Security, make an advance payment in a sum not exceeding 10% (ten percent) of the Bid Project Cost (the "Mobilization Advance"). The Mobilization Advance shall be paid by the Authority in 2 (two) equal quarterly instalments the first of | There is no scope for Mobilization Advance. |

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| | | | | which will be within 15 (fifteen) days from the submission of the irrevocable and unconditional guarantee as specified above from the Concessionaire. The Mobilization Advance shall be proportionately deducted by the Authority from the payments made to the Concessionaire during the Construction Period. | |
| 42 | Vol 2, Draft Concession Agreement | 142 & 155 / 33.1 read with 39.1 | Liability for Defects after Termination read with Defects Liability | The concessionaire already has the obligation to observe defects liability period under the concession agreement. This obligation of rectifying the defects for 4 (120 days) months after termination of the agreement post achieving COD until concession end date, is an additional financial burden on the pockets of the concessionaire. We request that if the concession agreement is terminated post achieving COD, the concessionaire should not be made to rectify the defects for such additional period of 4 months. Hence, kindly delete this Article 33.1 in its entirety. | Bid Conditions confirmed. |
| 43 | Vol 2, Draft Concession Agreement | 142 / 33.2 | Retention in Escrow Account | It may please be noted that, in addition to the performance security to be submitted by the Concessioner, if a retention amount is withheld (15% of pending invoices) or, alternatively, the Concessionaire is made to submit a retention guarantee with validity beyond the Transfer Date, it will be an added financial exposure for the | Bid Conditions confirmed. |

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| | | | | Concessionaire. Hence, we request that the concessionaire should be paid last invoice without any retention in the escrow account. Kindly delete this clause 33.2 in its entirety. | |
| 44 | Vol 2, Draft Concession Agreement | 12.3.4, 12.4.2, 14.4.1, 15.2, 17.19.3, 17.20.1, 17.21.4, 39.4 and Schedule C | Liquidated Damages/Damages for delay and breach of obligations | There are several provisions which enable Authority to impose liquidated damages/damages, such as, for delay in achieving project milestones, default in discharging maintenance obligations during construction period, delay in achieving punch list items, delay in achieving COD, delay in reopening closed parts after repair or maintenance work, delay in curing breach of maintenance obligations, damages for taking remedial measures by Authority, damages for failure to rectify the defects by the Concessionaire and failure to achieve house service connection targets during Construction Period. We request you to please cumulatively cap the liquidated damages/damages amount to 10% of the Bid Project Cost during Construction Period. Hence, please insert a new language in the draft concession agreement, as follows:<br><br>"The Liquidated damages/damages to be receivable by the Authority and as mentioned in Articles 12.3.4, 12.4.2, 14.4.1, 15.2, 17.19.3, 17.20.1, 17.21.4, 39.4 and Schedule C (penalty for not meeting connection targets during | Bid Conditions confirmed.<br><br>Refer Addendum - II – Annexure - I - Revised Schedule C |

<table>
<tr><th>S. No.</th><th>Tender Vol. / Section</th><th>Page No / Clause No</th><th>Title</th><th>Bidder's Query</th><th>Response</th></tr>
<tr><td></td><td></td><td></td><td></td><td>Construction Period), shall be cumulatively capped at 10% of the Bid Project Cost for the Construction Period.<br><br>Liquidated damages for delay or non-performance or not achieving standards are the sole remedy available to the Authority."</td><td></td></tr>
<tr><td>45</td><td>Vol 2, Draft Concession Agreement</td><td>233-247 / Schedule T</td><td>Escrow Agreement</td><td>It is very common that, while negotiating the escrow agreement terms with the banks, they do not easily agree on the escrow conditions enclosed with the RFPs. They generally propose/prefer their own escrow conditions. Hence, for timely signing of the escrow agreement, we request you to please allow the Concessionaire to use the escrow agreement template annexed as Annexure I to these pre-bid queries.<br><br>Please confirm.</td><td>Bid Conditions confirmed.</td></tr>
<tr><td>46</td><td>Vol 2, Draft Concession Agreement</td><td>50 / Schedule C (1. Construction Period) – Table</td><td>Liquidated Damages</td><td>The liquidated damages amount is very high. Considering the rate of liquidated damages applicable in other similar projects, we request you to please modify the liquidated damages table, as follows:<br><br><table><tr><td>S. No.</td><td>Time Period from Project Milestones as set out in the CIP</td><td>Liquidated Damages (INR) /Day</td></tr></table></td><td>Bid Conditions confirmed.<br><br>Refer Addendum - II – Annexure - I - Revised Schedule C</td></tr>
</table>

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| | | | | 1 \| Up to 60 (sixty) days \| 25,000<br>2 \| Beyond 60 (sixty) days upto 120 (one hundred and twenty) days \| 50,000<br>3 \| Beyond 120 (one hundred and twenty) days upto 270 (two hundred and seventy) days \| 1,00,000<br>4 \| Beyond 270 (two hundred and seventy) days \| Termination under Article 31 | |
| 47 | Vol 2, Draft Concession Agreement | 45 / 5.9.6 (C) | Obligations during Study Period | In Article 5.9.6(c), it has been mentioned that if, pursuant to the draft CIP, additional works are required to be performed by the Concessionaire, which shall be taken up as per Article 5.9.6(j). It may please be noted that there is no Article 5.9.6(j) mentioned in the draft concession agreement. We understand that if pursuant to draft CIP, if additional works are required to be performed, the same shall be taken-up as per Article 16 (Change of Scope).<br><br>Please confirm. | Refer Addendum - II, Sl. No. 6 |

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| 48 | | | New Clause | Currently, the Concession Agreement is silent on who will bear costs of repair/maintenance in case the pipelines/network/asset is damaged by third parties while working close to such pipelines/network/asset. We submit that the concessionaire only works in the capacity of the operator and the Authority is the owner of such pipelines/network/assets, hence, Authority should reimburse such costs of repair/maintenance of damaged pipeline/asset/network by the Concessionaire. We request you to please incorporate following language in the Concession Agreement draft:<br><br>"In case a third party causes damage to network/asset/pipelines/Project Facilities and the Concessionaire suffers delay and/or incurs additional costs on account of such damage by third party, the Authority shall:<br><br>A) Extend the Concession Period, equivalent to the period of delay caused by such damage; and/or<br><br>B) Reimburse/pay to the Concessionaire any additional costs plus reasonable profits and supervision charges incurred by the Concessionaire in repairing such damages caused by third parties. | Refer Volume II, Draft Concession Agreement, Article 11.3<br><br>Bid Conditions confirmed. |

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| | | | | The above additional costs shall be calculated as per the item rates quoted by the Concessionaire in the CIP." | |
| 49 | General | | New | We request that incorporation of special purpose company should only be required by the successful bidder when the successful bidder decides to finance the capex works through a loan advanced by a lender. In case the successful bidder opts to fund the capex works from its own financial resources, this requirement of incorporating a special purpose company should not arise and successful bidder should be considered "Concessionaire" under the Concession Agreement for the purpose of execution of the project.<br><br>Please confirm. | Refer Addendum - I, clause no. 2.1.15<br><br>The formation of SPV is mandatory in the case of any successful bidder.<br><br>Bid Conditions confirmed. |
| 50 | Vol 2, Draft Concession Agreement | 107 / 22.1.1 | Financial Close | We understand that in the event the Concessionaire opts for working capital financing by its own resources and not willing to go for project financing through lenders, then all the related and connected provisions related to Financial Close shall not be applicable to the Concessionaire. Please confirm.<br><br>Hence, we request you to please add a proviso to the Article 22.1.1 of the Draft Concession Agreement, as follows:<br><br>"…Provided where the Concessionaire has opted to fund the Project through its | Bid Conditions confirmed. |

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| | | | | own financial sources or working capital, and not through project financing, then all related and connected Financial Close requirements wherever appearing in the Concession Agreement shall not be applicable on the Concessionaire/Successful Bidder." | |
| 51 | Vol 2, Draft Concession Agreement | 148 / 36.1.1 | General Indemnity | The concessionaire liability is too extensive in terms of General Liability and not in compliance with the normal practice and with the international standards. Hence, we request you to please modify this article, as follows:<br><br>"The Concessionaire shall indemnify, defend, save and hold harmless the Authority and its officers, servants, agents, Government Instrumentalities and Government owned and/or controlled entities/enterprises, (the "Authority Indemnified Persons") against any and all<br>suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense, whether arising out of any breach by the Concessionaire of any of its obligations under this Agreement or any related agreement or on account of any defect or deficiency in the provision of services by the Concessionaire to the Authority or to any User, or from any negligence of the Concessionaire under contract or | Article 35, Draft Concession Agreement of Vol II abundantly clarifies.<br><br>Bid Conditions confirmed. |

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| | | | | tort, save and except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of this Agreement on the part of the<br>Authority Indemnified Persons." | |
| 52 | Vol 2, Draft Concession Agreement | 148 / 36.1.2 | General Indemnity | To make the Authority general indemnity provision fairer and more balanced, we request you to please modify this article, as follows:<br><br>"…which materially and adversely affect the performance by the Concessionaire of its obligations under this Agreement, save and except that where any such claim, suit, proceeding, action, and/or demand has arisen due to a negligent act or omission, or breach of any of its obligations under any provision of this Agreement or any related agreement, and/or breach of its statutory duty on the part of the Concessionaire, its subsidiaries, affiliates, contractors, servants or agents, the same shall be the liability of the Concessionaire." | Bid Conditions confirmed. |
| 53 | Vol 1, Instruction to Bidders | 18 & 78 / 2.1.15 read with Clause 3 of Joint Bidding Agreement in Appendix V | Where the Bidder is a single entity, and implement the Project.<br><br>The Parties hereby undertake…in terms of the Concession Agreement for the Project. | Also, we request you that SPV formation should not be made mandatory condition for the single entity bidders. The successful bidder should be given an option to execute the Project on its own or through an SPV.<br><br>Additionally, in Clause 3 of the Joint | The formation of SPV is mandatory in the case of any successful bidder.<br><br>Appendix V is applicable only in the case of a consortium.<br>Bid Conditions |

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| | | | | Bidding Agreement in Appendix V, it has been mentioned that SPV shall be incorporated "in the event of Consortium". Hence, the requirement of incorporation of SPV is only in case the bidder is participating in the RFP as a consortium. Also, the Joint Bidding Agreement format becomes void if the bidder competes as a single entity.<br><br>Please confirm. | Confirmed. |
| 54 | Vol 2, Draft Concession Agreement | 107 / 22.1.1 | Financial Close | If the Concessionaire opts to avail project financing for the project, it is requested that 150 days to achieve Financial Close are not sufficient, we request you to please increase this deadline from 150 days to 365 days from the Effective Date, in this article and wherever appearing in the draft concession agreement. Please confirm.<br><br>Hence, we request you to please amend the timeline from 150 days to 365 days to achieve financial close, as follows in Article 22.1.1:<br><br>"The Concessionaire may avail project financing for the Project. In the event the Concessionaire decides to avail financing for the Project it hereby agrees and undertakes that it shall achieve Financial Close within 365 (three hundred and sixty-five) 150 (one hundred and fifty) days from the | Bid Conditions confirmed. |

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| | | | | Effective Date. In the event of delay in achieving the Financial Close, the Concessionaire shall be entitled to a further period not exceeding 120 (one hundred twenty) days, subject to payment of Damages to the Authority in a sum calculated at the rate of 0.05% (zero point zero five per cent) of the Construction Period Performance Security for each day of delay, provided that the Damages specified herein shall be payable every week in advance and the period beyond the said 365 (three hundred and sixty-five) 150 (one hundred and fifty) days shall be granted only to the extent of Damages so paid. In the event of delay in achieving the Financial Close beyond 485 (four hundred and eighty-five) 270 (two hundred and seventy) days from the Effective Date, the Concessionaire shall be entitled to a further period not exceeding 95 (ninety five) days, subject to payment of Damages to the Authority in a sum calculated at the rate of 0.1% (zero point one per cent) of the Construction Period Performance Security for each day of delay, provided that the Damages specified herein shall be payable every week in advance and the period beyond the said 485 (four hundred and eighty-five) 270 (two hundred and seventy) days shall be granted only to the extent of Damages | |

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| | | | | so paid; provided further that no Damages shall be payable if such delay in Financial Close has occurred due to Force Majeure. The aforesaid damages payable shall be cumulatively capped at 20% of the Construction Period Performance Security. For the avoidance of doubt, the Damages payable hereunder by the Concessionaire shall be in addition to the Damages, if any due and payable under the provisions of Clause 4.3.<br><br>Provided where the Concessionaire has opted to fund the Project through its own financial sources or working capital, and not through project financing, then all related and connected Financial Close requirements wherever appearing in the Concession Agreement shall not be applicable on the Concessionaire/Successful Bidder." | |
| 55 | Vol 2, Draft Concession Agreement | 107-108 / 22.2.2 | Termination due to failure to achieve Financial Close | We request that in the event the Financial Close does not occur within the period set in Article 22.1.1, then instead of appropriating Bid Security or the Construction Period Performance Security as damages by the Authority, the Concessionaire should be allowed to pay some pre-estimated amount as liquidated damages. Hence, please modify the Article 22.2.2, as follows: | Bid Conditions confirmed. |

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| | | | | "Upon Termination under Article 22.2.1, the Authority shall be entitled to claim liquidated damages of Rs. 30,00,000/- (Rupees Thirty Lacs only) encash the Bid Security and appropriate the proceeds thereof as Damages; provided, however, that if Financial Close has not occurred due to Force Majeure, the aforesaid liquidated damages shall not be applicable and it shall, upon Termination, release the Bid Security or the Construction Period Performance Security, as the case may be. For the avoidance of doubt, it is expressly agreed that if the Bid Security shall have been substituted by the Construction Period Performance Security, the Authority shall be entitled to encash there from an amount equal to the Bid Security." | |
| 56 | Vol 2, Draft Concession Agreement | General | | Payments under the concession agreement to be made quarterly basis. We request your kind office to allow for monthly payments to maintain better cash flow to sustain the project. Please change the appropriate clauses accordingly. | Bid Conditions confirmed. |
| 57 | Vol 2, Draft Concession Agreement | 83 / 17.2.6 | The Concessionaire shall…such illegal connections. | We understand that the Authority shall have the responsibility of disconnecting such illegal connections on the recommendation of the Concessionaire. Hence, please modify the Article 17.2.6, as follows: | Bid Conditions confirmed. |

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| | | | | "The Concessionaire shall with written instructions from the Authority replace illegal service connections with legal connections where the User applies to the Authority for the provision for a new connection and the Authority authorizes the same. If the User does not apply for a new connection or if the Authority does not approve such application, the Concessionaire shall recommend the Authority to disconnect such illegal connections after providing the user notice of 15 (fifteen) days. The Authority shall be responsible for disconnection of illegal connections (who do not accept the option of regularization) as well as the defaulting Users (Users who fail to pay the dues even after appropriate notices)." | |
| 58 | Vol 2, Draft Concession Agreement | 237 / Clause 4.1.1 (c) & (d) of Schedule T | Withdrawals during Concession Period | Clause 4.1.1 (c) and (d) refer to the payments made in relation to construction and O&M expenses.<br><br>In this project, Concessionaire will receive bid project costs during construction period, O&M payments during construction period, annuity payments, O&M payments and payment regarding energy charges. Please modify the Clause 4.1.1(c), as follows and delete Clause 4.1.1(d):<br><br>"Bid Project Cost during Construction Period, O&M payments during | Bid Conditions confirmed. |

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| | | | | Construction Period, Annuity Payments during Operation Period, O&M Payments during Operation Period and Energy Charges due and payable to the Concessionaire in accordance with Article 23." | |
| 59 | Vol 2, Draft Concession Agreement | 146-147 / 35 | Change in Law | It is requested to make the Change in Law provision applicable for the entire period of the Concession Agreement starting from the Effective Date until the Transfer Date. It is requested to remove the cap or reduce the cap on increase/decrease of cost as a result of change in law to 25 lakhs. Also, the Concessionaire should be allowed to seek extension of time in case its obligations are affected due to any such change in law provisions. Hence, kindly modify Article 35, as follows:<br><br>"35.1 Increase in costs<br><br>If as a result of Change in Law during the period starting from the Effective Date until the Transfer Date, the Concessionaire suffers an increase in costs or reduction in net after-tax return or other financial burden, the aggregate financial effect of which exceeds the higher of Rs. 1 crore (Rupees one crore) or 2% (two per cent) of the sum of the Annuity Payments and O&M Payments total annual Payments in any Accounting Year during such | Bid Conditions confirmed. |

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| | | | | aforementioned period, the Concessionaire may so notify the Authority and propose amendments to this Agreement so as to place the Concessionaire in the same financial position as it would have enjoyed had there been no such Change in Law resulting in increased costs, reduction in return or other financial burden as aforesaid. Upon notice by the Concessionaire, the Parties shall meet, as soon as reasonably practicable as but no later than 30 (thirty) days from the date of notice and either agree on amendments to this Agreement or on any other mutually agreed arrangement.<br><br>Provided that if no agreement is reached within 90 (ninety) days of the aforesaid notice, the Concessionaire may by notice require the Authority to pay an amount that would place the Concessionaire in the same financial position that it would have enjoyed had there been no such Change in Law, and within 15 (fifteen) days of receipt of such notice, along with particulars thereof, the Authority shall pay the amount specified therein; provided that if the Authority shall dispute such claim of the Concessionaire, the same shall be settled in accordance with the Dispute Resolution Procedure. For the avoidance of doubt, it is agreed that this | |

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| | | | | Article 35.1 shall be restricted only to events of changes in law directly affecting the Concessionaire's costs of performing its obligations during the aforementioned period under this Agreement starting from the Effective Date until the Transfer Date.<br><br>35.2 Reduction in costs<br><br>If as a result of Change in Law during the period starting from the Effective Date until the Transfer Date, the Concessionaire benefits from a reduction in costs or increase in net after-tax return or other financial gains, the aggregate financial effect of which exceeds the higher of Rs. 1 crore (Rupees one crore) and 2% (two per cent) of the sum of the Annuity Payments and O&M Payments total annual Payments in any Accounting Year during such aforementioned period, the Authority may so notify the Concessionaire and propose amendments to this Agreement so as to place the Concessionaire in the same financial position as it would have enjoyed had there been no such Change in Law resulting in decreased costs, increase in return or other financial gains as aforesaid. Upon notice by the Authority, the Parties shall meet, as soon as reasonably practicable as | |

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| | | | | but no later than 30 (thirty) days from the date of notice and either agree on such amendments to this Agreement or on any other mutually agreed arrangement:<br><br>Provided that if no agreement is reached within 90 (ninety) days of the aforesaid notice, the Authority may by notice require the Concessionaire to pay an amount that would place the Concessionaire in the same financial position that it would have enjoyed had there been no such Change in Law, and within 15 (fifteen) days of receipt of such notice, along with particulars thereof, the Concessionaire shall pay the amount specified therein to the Authority; provided that if the Concessionaire shall dispute such claim of the Authority, the same shall be settled in accordance with the Dispute Resolution Procedure. For the avoidance of doubt, it is agreed that this Article 35.2 shall be restricted only to changes in law directly affecting the Concessionaire's costs of performing its obligations during the aforementioned period under this Agreement starting from the Effective Date until the Transfer Date.<br><br>35.3 Protection of NPV<br><br>Pursuant to the provisions of Articles | |

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| | | | | 35.1 and 35.2 and for the purposes of placing the Concessionaire in the same financial position as it would have enjoyed had there been no Change in Law affecting the costs, returns or other financial burden or gains, the Authority at its discretion shall use the Financial Plan or the Financial Model to establish a net present value (the "NPV") of the net cash flow and make necessary adjustments in costs, revenues, compensation or other relevant parameters, as the case may be, to procure that the NPV of the net cash flow is the same as it would have been if no Change in Law had occurred. For the avoidance of doubt, the Parties expressly agree that for determination of NPV, the discount rate to be used shall be the applicable Bank Rate.<br><br>35.4 Restriction on cash compensation<br><br>The Parties acknowledge and agree that the demand for cash compensation under this Article 35 shall be restricted to the effect of Change in Law during the respective Accounting Year and shall be made at any time after commencement of such year, but no later than one year from the close of such Accounting Year. Any demand for cash compensation payable for and in respect of any subsequent Accounting | |

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| | | | | Year shall be made after the commencement of the Accounting Year to which the demand pertains, but no later than 2 (two) years from the close of such Accounting Year.<br><br>35.5 Additional Time<br><br>If as a result of a Change in Law, the execution of any of the obligations of the Concessionaire under this Agreement is affected the Concessionaire may notify the Authority and propose amendments to this Agreement. Upon notice by the Concessionaire, the Parties shall meet, as soon as reasonably practicable as but no later than 30 (thirty) days from the date of notice and either agree on amendments to this Agreement or on any other mutually agreed arrangement. The Concessionaire shall be entitled to extension of time for a period no more than the days for which the obligations of the Concessionaire were affected." | |
| 60 | RFP VOLUME – II SCHEDULES | Page no. 117 - Item No. 5.1.3 – Technical Specification for Bulk Water Meters | The meter shall confirm ISO 4064 standard with EEC certification. | Please be noted that EEC certification is no more valid.<br><br>In view of this MID approved meters should be acceptable. | Refer Addendum - II, Sl.No.5 |
| 61 | NA | NA | Tender Technical | Request you to please specify minimum technical / functional requirements for | Refer response to query sl. no. 28. |

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| | | | specification does not mention the minimum technical / functional requirements for of Data Collection & MDM Solution | Data Collection & MDM Solution. | |
| 62 | RFP Volume II | Page no. 192, Schedule M – List of Makes of Equipment- Sr. No. 41 – Amr Water Meters | Schedule M – List of Makes of Equipment- Sr. No. 41 – Amr Water Meters | Itron is widely recognized as a global leader in water metering technology. Itron Inc. has the leading position globally for total water meter and communication module shipments, according to global water meter market analysis reports. our technology is used by nearly 8,000 utilities in over 100 countries including India.<br><br>Itron India Pvt. Ltd. deployed more than 50 Lakh basic / AMR Compatible water devices: around 7 Lakh smart AMR / AMI water devices across India including CMWSSB.<br>We request you to kindly include "ITRON" as approved make. | Refer Addendum - II, Sl.No.7 |
| 63 | Volume II, Part 2 DCA, Without Schedules | Page 167 | Any Leakages observed in the distribution line, rising main and feeder main shall be attended immediately and water supply restored within 12 hours of the receipt of complaint for leakage. | Within 12 hours shall be too difficult. If the leak identified in the night time. Hence it may be increased to 24 hours. | Refer Addendum - II, Sl, no.8 |
| 64 | Schedule C KPI | Point no 2 (Initial Operations period, under | Penalty / Damages Rs. 25000 per day for every 1% reduction in supply | We don't have data of leakage level currently. Without this data, we won't be able to commit on this, Because if already the leakage level is more, | Refer Addendum - II - Annexure - I - Revised Schedule C |

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| | | per capita water supply, it is specified as following) | | Contractor wouldn't be able to take care of. | |
| 65 | Schedule C, KPI, | Point No 3 (Operations period, Non Revenue water) | Extent of Non revenue water 15% 20% at the end of construction period, 1% reduction each year to reach 15% in 5 years from COD | We don't have data of non revenue level currently. Without this data, we won't be able to commit on this. Because if already the non revenue level is more, Contractor wouldn't be able to take care of this. | Refer Addendum - II - Annexure - I - Revised Schedule C |
| 66 | | | Continuity of supply | Continuity of supply:<br><br>100 * (Total Number of Readings of Pressure equal to or more than 17m + Total number of customer complaints on = no water resolved in 24 hours) / (Total number of readings of pressure + Total number of customer complaints on + no water)<br><br>Pressure at Connection: Pressure compliance = 100* (Total number of readings of pressure equal to or more than 17m + Total number of customer complaints on low pressure resolved in 72 hours.<br><br>With the pressure more than 17m is expected in WDS, we need to know the pressure maintained at the pipe line currently to commit on this, by analysis whether the pipeline can take this pressure continuously. | At present it is an intermittent water supply System. The pressure at the Pump level of both WDS is 32m and the distribution system is designed for flat pumping.<br><br>The bidder may undertake the necessary field investigations to ascertain the information. |
| 67 | | | | We request you to provide us the BOQ, | Refer to Annexure - II of |

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| | | | | so that it would be better to quote and all contractors shall be on the same page, and additional quantity in the future can be dealt with easily. | Corrigendum - II (DPR BoQ) and Annexure - II of Addendum - II.<br><br>Annexure - II of Addendum - II is a standardized format available on the portal, designed for bidders to specify the quantities and unit rates of individual items that collectively determine the Bid Project Cost (Construction Cost). Bidders shall introduce additional items, quantities, and rates based on their own estimations for arriving at the Bid Project Cost (Construction Cost).<br><br>It is important to note that Annexure - II of Addendum - II serves as a reference document only.<br><br>Additional quantity in the future shall be dealt as per bid conditions. |
| 68 | Volume 1 - | 1.1.2 a. Page no 10 of 81 | Extend the existing water distribution to achieve full coverage of customers within | We presume total Network is 326.47 KM - Kindly may confirm. Kindly also share individual length with | Please refer Corrigendum - I (DPR) and Annexure - III of Corrigendum - II for |

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| | | | the project area In Project Area ( Page no 9 of 81 ) - The existing water network infrastructure within the project area comprises of 6.97 km of Zonal feeder main and 44.24 km of DMA 10 feeder main and a total length of water distribution network of 326.47 km | sizes of Ductile Iron (DI), Cast Iron (CI) & Mild Steel(MS). Kindly also confirm ageing of Pipes. Please confirm if any condition assessment report, GIS drawing for the existing Pipe lines are existing | available GIS maps and drawings.<br><br>*The information provided are for reference only.* |
| 69 | Volume 1 - | 1.1.2 b. Page no 10 of 81 | Optimize the performance of the existing water distribution system to ensure delivery of at least an average 150 lpcd water supply per person at a minimum pressure of 17m conforming to the National Service Level Benchmarks fixed by MoHUA. | What is the Present lpcd water supply per person with minimum pressure at tail end of network pipe for every zone. Also please confirm if any hydraulic modelling has been done and report for such studies are available or not? | Refer Corrigendum - I and Annexure - IV of Corrigendum - II for Design sheets and Hydraulic Model.<br><br>*The information provided are for reference only.* |
| 70 | Volume 1 - | 1.1.2 c. Page no 10 of 81 | Transform the prevailing intermittent water supply system to a continuous pressurized water supply system | Presently how much hours and quantity (MGD/MLD) intermittent water supply in the system What is the pressure which is maintained at farthest end. | Please refer Corrigendum - I (DPR).<br><br>The pressure at the Pump level of both WDS is 32m and the distribution system is designed for flat pumping |
| 71 | Volume 1 - | 1.1.2 d. Page no 10 of 81 | Provide well engineered and tested customer service connections duly installed with 100% metering in the project area | Kindly confirm numbers of present House service connection and ultimate no of connection to be done with water meter. | Kindly refer the Schedule B of Volume II, Part II of the bid document and Corrigendum - I (DPR). |
| 72 | Volume 1 - | 1.1.2 e. Page no 10 of | Reduce non-revenue water to less than 20% and sustain | What is the Present NRW in the designated area? | At present it is an intermittent water supply |

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| | | 81 | and further reduce during the contract period | | system.<br><br>The bidder may undertake the necessary field investigations to ascertain the information. |
| 73 | Volume 1 - | 1.1.2 f. Page no 10 of 81 | Establish and improve the quality and timely response of customer services and complaint redressal to 90% efficiency | Kindly mention the parameters to improve water quality as treatment of Water is not is bidder scope | 'Quality' in clause 1.1.2(f) of Volume I refers to the quality and timeliness with respect to customer service and complaint redressal |
| 74 | Volume 1 - | 1.1.2 h. Page no 10 of 81 | Improve the revenue billing and collection efficiency in compliance to the requirements of key performance indicators. | Please share the present total revenue billing in every month , what is the billing software being used currently, is there a need to have a new billing software. | Refer to response for query sl. no. 15. |
| 75 | Volume 1 - | 1.1.2 g. Page no 11 of 81 | Fulfilment of the KPIs | Please mention the KPIs and same should be applicable only after completion of Construction work. | Refer Addendum - II – Annexure - I - Revised Schedule C |
| 76 | Volume 1 - | 2.1.6 . Page no 16 of 81 | The Bidder shall deposit a Bid Security for an amount as mentioned in Data Sheet above, in accordance with the provisions of this RFP. The Bidders will have an option to provide Bid Security in the form of online transfer through e-procurement portal or Bank Guarantee acceptable to the Authority, as per the format at Appendix-II. The Bidders shall also make online | Whether proof of Bank Guarantee option is available in the tender portal for submission of the tender. | Refer response to query sl. no. 17. |

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| | | | payment, if applicable, to the Authority towards the Tender Processing Fee mentioned in the Data Sheet above. | | |
| 77 | Volume 1 - | 3.19.1 . Page no 36 of 81 | The Bidder shall furnish as part of its Bid, a Bid Security referred to in Clauses 2.1.6 and 2.1.7 hereinabove through online transfer or on e-procurement portal or Bank Guarantee, in favour of the Authority in the format at Appendix-II (the "Bank Guarantee") and having a validity period of not less than 180 (one hundred eighty) days from the Bid Due Date and a claim period of 60 (sixty) days, and may be extended as may be mutually agreed between the Authority and the Bidder from time to time. | Whether proof of Bank Guarantee option is available in the tender portal for submission of the tender. | Refer to response for query sl. no. 18. |
| 78 | Volume 1 - | 2.2.4 A.A1 Page no 26 of 81 | "Technical Capacity"), the following shall be considered: A1. Technical Capacity – Implementation The Bidder shall, over the past 7 (seven) financial years preceding the Bid Due Date, have: i. paid for development of Eligible Project(s) in Category 1 and/or Category 2 specified in Clause 3.4.1; and/ or | Technical Capacity"), the following shall be considered: A1. Technical Capacity – Implementation The Bidder shall, over the past 7 (seven) financial years preceding the Bid Due Date, have: i. paid for development of Eligible Project(s) in Category 1 and/or Category 2 specified in Clause 3.4.1; and/ or ii. collected and appropriated revenues | Refer Addendum - II, Sl. No.9 |

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| | | | ii. collected and appropriated revenues from Eligible Project(s) in Category 1 and/or Category 2 specified in Clause 3.4.1,<br>iii. paid for, or received payments for, construction of Eligible Project(s) in Category 3 and/or Category 4 specified in Clause 3.4.1.<br>such that the sum total of the above (cumulative for the project period), as further adjusted in accordance with clause 3.4.7, is more than Rs. 500 crore (Rupees Five Hundred Crore only) (the "Threshold Technical Capacity - Implementation").<br>Provided that at least one fourth of the Threshold Technical Capacity shall be from the Eligible Projects in Category 1 and/ or Category 3 specified in Clause 3.4.1.<br>Provided that at least one similar work with an aggregate project cost of at least (i) Rs. 60 crore (Rupees Sixty Crore only) from the Eligible Projects shall have been completed by the single entity Bidder or the Lead Member. For this purpose, a | from Eligible Project(s) in Category 1 and/or Category 2 specified in Clause 3.4.1,<br>iii. paid for, or received payments for, construction of Eligible Project(s) in Category 3 and/or Category 4 specified in Clause 3.4.1.<br>such that the sum total of the above (cumulative for the project period), as further adjusted in accordance with clause 3.4.7, is more than Rs. 450 crore (Rupees Four Hundred Fifty Crore only) (the "Threshold Technical Capacity - Implementation").<br>Provided that at least one fourth of the Threshold Technical Capacity shall be from the Eligible Projects in Category 1 and/ or Category 3 specified in Clause 3.4.1.<br>Provided that at least one similar work with an aggregate project cost of at least (i) Rs. 60 crore (Rupees Sixty Crore only) from the Eligible Projects shall have been completed by the single entity Bidder or the Lead Member. For this purpose, a project shall be considered to be completed, if more than 80% of the value of work has been completed or completed value of work is equal to or more than Rs. 60 crore (Rupees Sixty Crore only). | |

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| | | | project shall be considered to becompleted, if more than 90% of the value of work has been completed and such completed value of work is equal to or more than Rs. 60 crore (Rupees Sixty Crore only). | | |
| 79 | Volume 1 - | A. A2. Technical Capacity – O&M Page 26 of 81 | The Bidder with respect operation and maintenance of projects, shall over the past 7 (seven) financial years preceding the Bid Due Date, have:<br>experience in operation and maintenance of continuous pressurized urban water supply distribution system and/or transforming intermittent water supply system to a continuous water supply;<br>For the experience criteria mentioned above, the bidder should have executed:<br>a) a single project (hydraulic zone) with at least 30,000 water connections; or<br>b) two separate projects (hydraulic zone) each having at least 20,000 water connections;<br>for a continuous period of 2 (two) years in the last 7 | The Bidder with respect operation and maintenance of projects, shall over the past 7 (seven) financial years preceding the Bid Due Date, have:<br>experience in operation and maintenance of continuous pressurized urban water supply distribution system and/or transforming intermittent water supply system to a continuous water supply;<br>For the experience criteria mentioned above, the bidder should have executed:<br>a) a single project (hydraulic zone) with at least 30,000 Water Meter Connections Including revenue generation<br>or<br>b) two separate projects (hydraulic zone) each having at least 20,000 water connections;<br>for a continuous period of 2 (two) years in the last 7 (seven) years prior to the Bid Due date, such that the Applicant meet the criteria under (A2) (a) or (b) above (the "Threshold Technical | Refer Addendum - II, Sl.No.10 |

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| | | | (seven) years prior to the Bid Due date, such that the Applicant meet the criteria under (A2) (a) and (b) above (the "Threshold Technical Capacity – O&M"). | Capacity – O&M"). | |
| 80 | Volume 1 - | 4.4.1 a. Page no 38 of 81 | For the purpose of this RFP:<br><br>Water sector would be deemed to include water treatment plants, water supply transmission networks, water supply distribution networks, sewerage, waste water /sewage / effluent treatment plants, waste water /sewage / effluent collection and transmission networks, desalination plants; | For the purpose of this RFP: Water sector would be deemed to include water treatment plants/Re-habitation of water treatment plant/UGR/ water supply transmission networks/, water supply distribution networks/ House service connection/SCADA, sewerage, waste water /sewage / effluent treatment plants, waste water /sewage / effluent collection and transmission networks, desalination plants; | Bid Conditions confirmed. |
| 81 | Volume 1 - | 2.4.4 B . Page no 27 of 81 | Financial Capacity: The Bidder shall have a minimum net worth (Financial capacity ) of Rs. 125 crore (Rupees One Hundred and Twenty Five Crore only) at the close of the preceding financial year2.<br>In the case of a Consortium, the combined technical capacity and net worth of those Members, who have and shall continue to have an equity share of at | The Bidder shall have a minimum net worth (Financial capacity) of Rs. 12.50 crore (Rupees Twelve Crore Fifty Lakh only) at the close of the preceding financial year.<br>In the case of a Consortium, the combined technical capacity and net worth of those Members, who have and shall continue to have an equity share of at least 26% (twenty six per cent) each in the SPV, should satisfy the above conditions of eligibility; provided that each such Member shall, for a period of 36 (thirty six) months from the date | We presume that the reference is to Clause 2.2.4 B – Financial Capacity (and not 2.4.4 B)<br><br>Bid conditions confirmed. |

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| | | | least 26% (twenty six per cent) each in the SPV, should satisfy the above conditions of eligibility; provided that each such Member shall, for a period of 36 (thirty six) months from the date Commercial Operation of the project, hold equity share capital not less than26% (twenty six per cent) of the subscribed and paid up equity of the SPV. Provided further that members of the Consortium undertake that they shall collectively hold at least 51% (fifty-one per cent) of the subscribed and paid-up equity of the SPV for the entire duration of the Project | Commercial Operation of the project, hold equity share capital not less than26% (twenty-six per cent) of the subscribed and paid up equity of the SPV. Provided further that members of the Consortium undertake that they shall collectively hold at least 51% (fifty-one per cent) of the subscribed and paid-up equity of the SPV for the entire duration of the Project | |
| 82 | Volume 1 - | 2.1.15 c . Page no 17 of 81 | The Consortium Members whose Technical Capacity and Financial Capacity have been submitted for qualifying in this Bid shall subscribe and hold until the 3rd (third) anniversary of the date of commercial operation of the Project, equity share capital in a manner that: (i) the Member whose Technical | The Consortium Members whose Technical Capacity and Financial Capacity have been submitted for qualifying in this Bid shall subscribe and hold until the 3rd (third) anniversary of the date of commercial operation of the Project, equity share capital in a manner that: (i) the Member whose Technical Capacity- (Implementation & O & M) had been evaluated shall hold not less than 51% (fifty one percent) of | Bid Conditions confirmed. |

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| | | | Capacity had been evaluated shall hold not less than 51% (fifty one percent) of the subscribed and paid-up equity of the Concessionaire and the Member whose Financial Capacity had been evaluated shall hold not less than 26% (twenty six percent) of the subscribed and paid-up equity of the Concessionaire and (ii) together all the members of the Consortium shall hold 100% (hundred percent) of the subscribed and paid-up equity of the Concessionaire. After the third anniversary of the date of the commercial operation of the Project, the Consortium Members whose Financial Capacity had been evaluated shall be permitted to exit the Concessionaire. The Member whose Technical Capacity in relation to O&M experience had been evaluated shall continue to hold not less than 26% (twenty-six percent) of the subscribed and paid-up equity of the Concessionaire. Provided further that the Consortium Members shall | the subscribed and paid-up equity of the Concessionaire and the Member whose Financial Capacity had been evaluated shall hold not less than 26% (twenty six percent) of the subscribed and paid-up equity of the Concessionaire and (ii) together all the members of the Consortium shall hold 100% (hundred percent) of the subscribed and paid-up equity of the Concessionaire. After the third anniversary of the date of the commercial operation of the Project, the Consortium Members whose Financial Capacity had been evaluated shall be permitted to exit the Concessionaire. The Member whose Technical Capacity in relation to O&M experience had been evaluated shall continue to hold not less than 26% (twenty-six percent) of the subscribed and paid-up equity of the Concessionaire. Provided further that the Consortium Members shall together continue to hold 51% (fifty-one percent) of the subscribed and paid-up equity of the Concessionaire of which the Member whose Technical Capacity in relation to O&M experience had been evaluated, shall hold not less than 26% (twenty-six percent) of the subscribed and paid-up equity of the Concessionaire | |

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| | | | together continue to hold 51% (fifty-one percent) of the subscribed and paid-up equity of the Concessionaire of which the Member whose Technical Capacity in relation to O&M experience had been evaluated, shall hold not less than 26% (twenty-six percent) of the subscribed and paid-up equity of the Concessionaire | | |
| 83 | | Nil | Requirement for a specific brand/model of SCADA. | Is there a requirement for a specific brand/model of SCADA, or can bidders propose customized solutions? Allowed flexibility in SCADA selection. | Refer to Schedule M, in RFP Volume - II, Schedules |
| 84 | Volume 1 | Clause no: 1.1.2 c Page no: 10 | Financing of the Project upto 40% of the Bid Project Cost (Construction). | 60% fund must be available into the escrow account during the construction period. | Refer response for query sl. no. 24. |
| 85 | Vol 2 | Clause 23.6.4 Page no 111 OF 165 40% PAC For OPEX | b) Thereafter, each Annuity shall be paid at the end of each quarter, along with interest calculated on the Completion cost remaining to be paid from the end of the previous quarter until the end of next Quarter. | (b) Thereafter, each Annuity shall be paid at the end of each month, along with interest of 12%, calculated on the Completion cost remaining to be paid from the end of the previous month until the end of next month. | Bid Conditions confirmed. |
| 86 | | | Pipe condition assessment | We request the actual sample size of pipe condition assessment carried out in the DPR, to be provided to the bidders. | Refer Corrigendum - I (DPR). |
| 87 | Vol 2 DCA – Schedule B | 4.1.2(d)<br><br>Article 4 – | Existing system database | We request you to provide all the data listed in this clause to all bidders at tender stage | The Data will be provided to the Concessionaire during the Study Period |

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| | | Conditions Precedent Page No. 31 of Vol 2 DCA | | | |
| 88 | Vol 2 DCA | 3.3 | No of DMAs | The scope of works as per DPR in Schedule B mentions total 125 DMAs to be constructed. For 39000 connections, 125 DMAs would translate to average 312 connections in each DMA. To construct and isolate a DMA, Concessionaire will have to install 1 or 2 bulk flow meters, at least 5-6 valves and 2-3 Critical Pressure measurement points. Further to establish the DMA, drop test/ pressure zero test has to be conducted. This is very time taking, costly work with increased cost on monitoring and maintaining the equipment as these assets will be in the open and not in protected areas.<br><br>We presume that the Concessionaire will have the choice to choose the methodology and decide the number of DMA, following IWA standard of 1500-2500 connection/ DMA. Please confirm. | Refer Addendum - II<br><br>The Concessionaire may revisit the hydraulics and number of DMAs during the study period and may reduce the number of DMAs. However, the number of DMAs shall not be reduced by more than 20% of the DMAs mentioned in the Bid Documents.<br><br>At present 750 lane level flow measurement points with necessary instrumentation are provisioned in the DPR (approximately 5 Numbers per DMA). The Concessionaire may revisit the requirement of number of lane level units ensuring the real time monitoring of flow and pressure as envisaged in the bid document. However, the number of lane level monitoring |

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| | | | | | units shall not be reduced by more than 50% of the numbers provisioned in the DPR.<br><br>Such changes shall be adopted after according approval of Independent Engineer / Authority. |
| 89 | General | | Pipe replacement scope, NRW reduction and achieving 24X7 | From the DPR and Schedule B we understand that only 33 kms out of 297 kms of existing pipeline is proposed. The existing pipeline, predominantly CI (81%), which is minimum over 30-40 years of age is proposed to be retained. The replacement scope seems to be very low with respect to the project KPIs proposing to achieve 24X7 with 17mt residual pressure and NRW below 20% to be maintained on the network for next 17 years.<br><br>The DPR makes a mention of the condition assessment, however the sample size is not known, making it difficult for bidder to make any judgement of the health of the network.<br><br>The DPR is silent on whether any test was done on the quality of joints in CI pipe and whether any test was conducted on the pipeline to check leakage level when subjected to any continuous and sustained high pressure | Refer Corrigendum - II for Hydraulic model.<br><br>Condition assessment of existing pipe network as carried out has been uploaded to the portal as part of the DPR.<br><br>Refer to Addendum - II, Revised Schedule C at Annexure - I of Addendum - II.<br><br>Any additional replacement of pipes as required may be taken up by the Concessionaire in accordance with the terms of the Bid Documents.<br><br>In light of the response provided to point no. 88 above, any reduction in |

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| | | | | (+1.5 bar at least for 7 days)<br><br>From our experience, we believe the CI pipelines, being very old, their lead joints and other weak points (cracks around ferrule points developed when chiselled for making bores) will give up when subjected to continuous supply with high pressure. These are very difficult to detect and repair as most leak flow underground (invisible leaks) and will be able to be identified over a prolonged O&M period.<br><br>It is quiet possible that the actual requirement of pipe replacement on account of issue identified above is much more than estimated. This replacement may be required to contain the physical losses for a sustainable 24x7 high pressure network operations over next 30 years. However these requirement will not be possible to identify immediately in a short study period. As Concessionaire will undertake operations of network and slowly subject the network to high pressure, the minimum night flows in various DMAs may identify difficulties in containing leakage. In such DMAs, after active leakage control measures and further investigation with step testing etc are carried out, pinpointing areas of concern would be possible. Therefore, | project cost on account of the reduction in the number of DMAs/controllers, may be used by the Concessionaire to take up any additional replacement of pipes, as may be required, after according approval of the Independent Engineer / Authority<br><br>However, it may be noted that the total cost of the project shall not exceed the bid project cost. |

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| | | | | Concessionaire at best may be able to give a preliminary outline of necessary replacement after 2-3 years of operations post DMA finalisation and converting the system into continuous supply system.<br><br>We believe, when we have to address multiple issues in existing old network, first focus should be on extending coverage, improving service with low pressure 24x7 (average 1.0 bar) supply and carrying out metering to have robust measure of NRW in the system while simultaneously carrying out NRW (physical loss) reduction measures. The scope of works as per DPR would help achieve most of these objectives. However, the two years Construction Period is short for this and should be increased to minimum three years. This should be followed up in the O&M period by, increasing pressure profile (17 mtrs), intense NRW reduction measures including active leakage control of visible/ invisible leaks, introducing pressure management and replacement/ rehabilitation of network based on scientific data gathered from operations.<br><br>The contract as is today, expects the Concessionaire to make a judgement on the quality of network during the bid | |

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| | | | | stage and detail it in the CIP period without taking any measures on studying the network through operations as explained above. The price quoted by Concessionaire is fixed as per clause 5.9.6(a)<br><br>It is not clear how Article 16 for Change in Scope will be applied during the Construction period and O&M period, for any works which are identified only as additional quantities of work but such work items are already part of the CIP ( ex Pipelines, fittings, HSCs, meters, pumps, DMA meters, etc),<br><br>We propose and request you to consider following changes in the concession agreement.<br><br>1. Request to provide the bidders with the water gems model prepared in the DPR and the work quantities in form of blank BOQ for bidders to quote at the bid stage under the 'Construction Cost item in financial proposal (Sr no 1.1)<br>2. During CIP, the selected bidder shall only verify the scope of works as in the DPR and prepare an execution plan with timelines for completion of works. Bidder to follow the DPR to execute the works. Any major changes required apart from the DPR works, verified and approved by the | |

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| | | | | Independent Engineer/ Authority to be paid under Change in Scope in Article 16.<br>3. Increase the total Construction period to 3 years with milestone to deliver conversion of min 40% of the connections by end of 2nd year. 100% connections end of 3rd year. Definition of connection as per Clause 1 in Schedule C.<br>4. We request a separate line item (lumpsum) in the price proposal for bidder to quote for NRW reduction works which shall include all active leak detection measures, DMA testing, measures on reducing other components of NRW. The successful bidder shall be required to provide a complete NRW activity plan for Authority's approval.<br>5. KPI related to 24x7 (pressure) and NRW be revised. All KPIs and penalties applicable at the end of 3 year construction period or on COD be revised as in the in Annexure 1 enclosed.<br>6. For NRW, we request to consider the KPI be amended as follows<br>- On COD, min 30% reduction to be achieved in NRW from the initial level measured in each DMA(immediately after the DMA is established). The penalties for not | |

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| | | | | achieving NRW, to be calculated on per DMA basis. The current penalties for NRW be revised as in table 1 in Annexure 1. Further, Concessionaire shall provide a trend line for reduction of NRW in each DMA during the first 5 years from COD and next 10 years which shall be reviewed and approved by the Authority.<br>7. We request that end of each year of construction, based on evidence available from operations, the Concessionaire be allowed to provide a detailed assessment within established DMAs, for the pipeline/joints quality to sustain high pressures and also any blockages internal due to encrustation/ corrosion which required complete replacement of section of the pipeline. The scope of any such replacement may be undertaken by the Concessionaire as change in scope as per rates quoted in the construction cost under Clause 16.1.2, or by Authority through a public tendering process as per Clause 16.5.1.<br>8. We estimate based on experience in similar operations for network with predominant CI pipes, in Bangalore, Delhi and Kolkata that the actual replacement could be 30-40% of the total network and provisions should be made in Authority's budget for the same. | |

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| | | | | We request the HAM structure be not disturbed. The Construction Cost and Annuity be structured on the quote provided by the bidder at tender stage. All additional works identified as above be paid in full, directly under Change of Scope (16.3 and 16.7) | |
| 90 | DPR<br>Page No. 138 | **6.11.3.** | **Operational Zone to DMA entry arrangement** | The DPR suggest that at each District Meter installation, a Double Chamber DI Control valve, Hydraulic Operated 24 V DC, Solenoid control, IP 68, Integrated with PLC panel has to be provided. This requirement is very difficult to fulfil if insisted by Authority. The average pipe depth and location alignment of pipe in the road generally does not allow such an instrument to be deployed. The valve body/ spindle would rise above the ground level if the pipe depth is not enough. Further to provide a continuous power supply is difficult. We request this installation be not made compulsory. | Bid Conditions confirmed. |
| 91 | Vol 2, DCA | Page No. 112 /<br>Cl No. 23.8.1 | Energy Cost | Clause says – "Energy Charges for the distribution of water during the Initial operation period shall be paid by the Authority." We request this clause to be changed to following<br><br>"Energy Charges for the distribution of water during the Initial operation period **and operation period** shall be paid by the Authority." | Energy Charges during the Operation Period is dealt with in Article 23.8.2. |

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| | | | | This will avoid any confusion on payment responsibility. | |
| 92 | Vol 2, DCA | Page No. 112 / Cl. No. 23.8.2 | Energy Cost | Please clarify the clause is applicable during Operation Period.<br><br>Further, the clause fixes the energy consumption (energy efficiency) at 0.26KHh/KL and anything over and above this shall be borne by the Concessionaire.<br><br>Here we have to appreciate that energy consumption is direct/indirect result of how water is consumed in the network. Until water consumption falls into a repetitive diurnal pattern, the overall consumption/capita falls into a desirable average and leakage is brought to a respectable level, it will very difficult to draw a standard pressure profile which in turn has an impact on the pumping and therefore the energy cost.<br><br>Since the leakage/NRW line to come down will take time as explained in queries above, it is best to draw an energy efficiency curve only at the end of construction period. We request that providing a energy consumption figure be made mandatory at the end of construction period. | Refer clause No. 23.8.2<br><br>Bid conditions confirmed, |
| 93 | Vol. 2 DCA | Page No. 112 / Cl. No. 23.8.2 (i) and | Energy Cost | Does the concessionaire have to provide a DG set and system for backup up power during interruption | The Concessionaire is required to provide a DG set and system for |

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| | | (ii) | | from grid?<br>Does a DG system already exist?<br><br>Kindly clarify who has to incur the cost of procurement, installation, regular servicing of the DG system? We do not see any mention of the same in the DPR. This is huge cost, and we request you to kindly provide correct specification to include the cost of the same. | Backup power.<br><br>Refer Annexure - II of Corrigendum - II for DPR BoQ.<br><br>*The information provided are for reference only.* |
| 94 | Vol. 2 DCA | Page No. 9 / Cl. No. 1.1<br><br>& Page No. 41 / Cl. No. 5.9.5 | Definitions – Additional Project Facilities | The definition talks about transmission, treatment and storage among other infrastructure. Are any of these elements under the scope of current contract to be constructed by the Concessionaire? Further Clause 5.9.5 says 'This shall include but not be limited to assessing the condition and performance of the assets forming part of the Existing Project Facilities such as water intakes, water treatment works, treated water pumping and transmission mains, service reservoirs, and water distribution system."<br><br>Kindly clarify if any works upstream of the existing underground storage tank (before the pumping Station) and outside project boundary, is or will be included in the scope of the Concessionaire in order to ensure sufficient supply for 24X7 water supply. | Vol. II, Draft Concession Agreement, Clause No. 1.1 and Clause No. 5.9.5 abundantly clarify.<br><br>Bid Conditions confirmed. |
| 95 | DPR Page No. | Point No.s 6.3 | Transmission Mains | Chapter 6.3 (Design of Transmission | Transmission system |

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| | 109 | and 9.2 | | Mains) Table 6.1, Sr No 11 on page 109 of DPR says additional pipe line is required for Pallipatu WDS. Whereas Chapter 9.2 in the executive summary acknowledges the requirement of additional pipeline, however, it is not covered under the current scope due to lack of funds. We request to clarify as to when this additional pipeline necessary for ensuring sufficient to the two WDS will be constructed and who will be responsible for the construction. Further, in the absence of this important link between source and the storage at WDS, how the concessionaire shall perform the various test for ensuring sustained pressure in the network until the pipeline is constructed. | from Source to WDS is not within the scope of Concessionaire. |
| 96 | Vol 2 DCA | Page No. 10/12/14 and Cl No. 1.1 | Definitions – Appointed Date/ Effective Date/Concession Period | Whereas the date of agreement execution is the effective Date which should be date when concession comes into effect. However, in the DCA, as per definitions the Concession period is commencing from the Appointed Date. We request the definition of Appointed Date be amended as '**Appointed Date**" means the date on which Financial Close is achieved and every Condition Precedent is satisfied, in accordance with the provisions of this Agreement~~, and such date shall be the date of commencement of the Concession Period~~;' Further the definition of Concession Period be amended as | Bid Conditions confirmed. |

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| | | | | "means the period starting on ~~and from Appointed Date~~**Effective Date** and ending on the Transfer Date. For avoidance of doubt it is clarified that the Concession Period shall include **the Study Period for 6 months**, Construction Period **for 3 years** plus a fixed period of 15 (fifteen) years of Operation & Maintenance Period from the COD" | |
| 97 | Vol. 2 DCA | Page No. – Cl. No.-<br><br>2.3 and 1.1 - Definitions | Study Period and CIP preparation | As per DCA - "**Study Period**" means the period from the Effective Date until the Appointed Date; However, this means that Concessionaire as to carry out study works without the concession being into effect. We request this to be modified as in query no 11. Further, we request that the price bid includes a row for the bidders to quote their lumpsum fee for all works to be carried out in the study period. | Bid Conditions confirmed. |
| 98 | Vol. 2 DCA | Page No. – Cl. No.-<br><br>1.1 | Price Index - Definitions | We request the **"Price Index**" shall comprise:<br>(a) **50%** (seventy per cent) of WPI; and<br>(b**) 50%** (thirty per cent) of CPI (IW),<br><br>The Price index is common definition which is applied to all periods described in the concession agreement. Whereas there is major O&M work in the scope and O&M include 70% manpower cost. Therefore the proportion/contribution of CPI needs to be higher in the indexation to at least 50%. | Bid Conditions confirmed. |

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| 99 | Vol. 2 DCA / DPR | DPR Page No. 19<br>10.3.6 –<br><br>DCA Page No. 16<br>Cl. No. 3.3.2(d), Schedule B, DCA | HSC replacement | We understand the House service connections need to be replacement only on pipes identified for replacement during the construction period and later in O&M period if any. Further connections need to be provided all new pipes laid for improving coverage. House service connection here means the scope of excavating on the pipe, removing old connection, fixing ferrule and provide new MDPE pipe connection from ferrule to upto Customer tap with meter.<br><br>We request that Concessionaire be made responsible for replacement as above, and only those leaking house service connections identified during the course of NRW activities and complaints. Excavating every street for replacing only connections in the entire project area, searching the exact location of ferrule point etc shall not be mandatory, as it time taking and will disturb the entire roads. However for every connection, meter installation shall be in the scope of the concessionaire. Please confirm. | Bid Conditions confirmed. |
| 100 | Vol. 2 DCA | Page No. 66<br>Cl. No. 1.2.5, Schedule D | Road restoration. | We understand that as per clause, any kind of road restoration is outside the scope of Concessionaire and that the Authority through its own agency shall carry out the road restoration. Further, the concessionaire shall be responsible | Bid Conditions confirmed. |

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| | | | | only for 'refilled of **excavated earth only** by proper refilling practice & well level & compacted with suitable instruments & excess material should be disposed at suitable place'<br><br>Since there is always a considerable difference in the rates for road restoration in the SORs published in the state and actual rates at which contractors can execute the works, we request that concessionaire shall not be forced to take up restoration at a later date at SOR rate. If need be, we request you to allow Concessionaire to quote his market rates for the works. | |
| 101 | Vol. 2 DCA and Price Sheet | Article 23 | Bid Project Cost | We understand the Bid Project Cost means the cost of Construction quoted by the Bidders. However, the price sheet clubs 'construction cost + O&M cost during construction period and O&M cost during O&M period + GST' under the Bid Project Cost in Sr No 1.<br><br>We request the total price quoted by the bidder be defined under a different title to remove confusion. | Bid Project Cost is defined in Article 23.1 of RFP Volume II – Draft Concession Agreement.<br><br>Please also refer Appendix 1B, Annex I, Bid Price sheet of the RFP Volume - I and Addendum II – Annexure - II. |
| 102 | Vol. 2 DCA | Page No. 111 Cl. No. 23.6 | Annuity Payment | We request you to consider payment of balance 40% of the Bid Project Cost (Construction cost) within **7-8 years** instead of 15 years as currently provided in the DCA. At 15 years return period, the project is not very attractive for any private equity to be invested. | Bid Conditions confirmed. |

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| | | | | Further, the long payment period will make the project very costly.<br><br>We request that the "Interest shall be due and payable on the reducing balance of Completion Cost at an interest rate equal to the average of the then prevailing SBI MCLR plus **5%**" to make the Hybrid Annuity attractive for developers to bid for this project. | |
| 103 | Vol.1 RFP | Page No. 26 / Cl. No. A2, 2.2.4 | Eligibility | Since the project work includes NRW reduction as key scope and deliverable, we request you to include a qualification for 'Achieved and maintained NRW below 25% for continuous 2 years in a single project (hydraulic zone) with at least 30,000 water connections in 24x7 continuous water supply'. | Bid Conditions confirmed. |
| 104 | Vol.2 DCA | Page No.s 31 and 32 / Cl. No.s 4.13( c) / 4.1.2(h) | Escrow Account | There is a conflict in the number of days within which Escrow Account is to be signed. We request escrow account be signed within 90 days. | Bid Conditions confirmed. |
| 105 | Vol. 2 DCA | Page No.s 43 and 44<br><br>5.9.5 (j) and (l)(iii) | Comprehensive Assessment – Treatment Plant | We request you to remove the scope of assessing treatment plant.<br><br>Further the water balance required in (l)(iii) can only be possible when we have at least 15 days of inflow into the system measured accurately and there is metering in the system to assess the consumption. Since at the time of Study period, there is no metering of any kind available to study the flows, water Balance will not be based on accurate | Assessment of Existing Treatment Plant is not in the scope of concessionaire. |

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| | | | | measurements but based on assumption. We request, this requirement be deleted. | |
| 106 | Vol. 2 DCA | Page No. 62 / Cl. No. 11.3 | **New utilities and roads** | The clause says 'Where such access or use causes any financial loss to the Concessionaire, it may require the user of the Service Area to pay compensation or damages as per Applicable Laws."<br><br>The clause implies Concessionaire to collect compensation from the user.<br><br>Only Authority shall have the jurisdiction to charge any compensation/damages to/from the users (telephone/internet/ electricity/ storm water/road/sewer/any other utilities) who damages any water supply assets operated/maintained by Concessionaire. Since the Concessionaire is not the owner of the space/service area but is only an operator appointed on behalf of the Authority, the financial losses/damages incurred by the Concessionaire should be duly paid by the Authority to the Concessionaire, to make good any damages to the assets even if Authority does not to collect the same from the user who damages the assets. Please confirm. | Article 11.3, Draft Concession Agreement of Volume II, abundantly clarifies.<br><br>Bid Conditions confirmed. |
| 107 | Vol.2 DCA | Page No. 73 / Cl. No. 14.2 | Provision Certificate | We request the 'Provision Certificate' be issued and made applicable DMA wise where the revised KPIs as | Bid Conditions confirmed. |

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| | | | | requested in queries above are demonstrated by the Concessionaire. The proportionate Annuity shall be made applicable in the DMAs completed and O&M fees paid as under fees quoted for O&M period. There could be DMAs, where works/ KPIs remain incomplete for issues / concerns / reasons beyond the Concessionaire which are documented and agreed by the Authority. Such pending DMAs shall not hinder the Concessionaire from claiming Annuity for works duly completed in other DMAs, however O&M fees as quoted for O&M during construction period shall be paid to concessionaire to continue operating in pending DMAs. Please confirm | |
| 108 | Vol.2 DCA | Page No. 84 / Cla. No. 17.2.11(f) | Water Shortage Period and KPIs | We request that the Concessionaire be relieved from the KPIs during period when water shortage exceeds more than 5% of estimated supply. This shall be applicable for KPIs related to continuous supply/ pressure, NRW and customer complaints related to water shortage. NRW is directly affected in shortage period since the pressure is affected. Further with the denominator in the NRW calculation (supply volume) getting instantly reduced, the NRW level goes up for the period until a new normal is achieved in consumption (numerator). Please confirm. | Bid Conditions confirmed. |
| 109 | Vol.2 DCA | Page No. 84 / | Water Shortage Period | The clause says "During the | Refer Article 16.2.3 (f) |

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| | | Cl. No. 17.2.11(e) | | subsistence of a Water Shortage Period, Operator shall undertake such measures so as to minimize the supply interruptions to the Consumers."<br>Whereas the Concessionaire shall take measures to minimize supply, he shall not be responsible to fetch water tankers and supply in the area. Any such measure requiring hiring of water tanker and supplies shall be reimbursed to the Concessionaire at actuals.<br><br>The above clause shall apply for both O&M during construction period and O&M during O&M period. Please confirm. | and 17.2.11 of Draft Concession Agreement, Volume II which abundantly clarify. |
| 110 | Vol. 2 DCA | Page No.s 87 & 89<br><br>Cl. No.s 17.4.3 and 17.5.3 | Major maintenance | The two clauses are in conflict with respect to Major maintenance. We request that clause 17.5.3 prevails. Please confirm | Volume II Draft Concession Agreement, Article 17.4.3 refers to maintenance of 'Additional Project Facilities' while Article 17.5.3 refers to major maintenance of 'Existing Project Facilities' |
| 111 | Vol.2 DCA | Page No. 45 / Cl. No. 5.9.6(a) | Obligation during Study Period | The clause at the end of para says "The Concessionaire while developing the draft CIP may suggest new technologies / ideas which will improve the performance of the proposed water supply system **within the overall cost earmarked for the EPC component**."<br><br>We request that since the quantum of | Bid Conditions confirmed. |

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| | | | | works of pipe replacement and any other special works that need to be carried out is not known at the bid stage, any new works/ ideas be treated as Change in Scope and cost treated as extra beyond the cost earmarked for the EPC component. Please confirm. | |
| 112 | Vol.2 DCA | Page No. 45 / Cl. No. 5.9.6(c) | Obligation during Study Period | The clause says "Provided that no such approval may be deemed, if, pursuant to the draft CIP additional works is required to be performed by the Concessionaire, which shall be taken up as per Article 5.9.6 (j)."<br><br>However, Clause 5.9.6(j) does not exit. We request you to provide clause 5.9.6(j) to explain the treatment of any additional works presented in draft CIP. | Refer Addendum - II, Sl. No. 6<br><br>Bid conditions confirmed. |
| 113 | Vol.2 DCA | Article 16<br><br>Page No.s 75-77 | Change in Scope | Please confirm that during construction period and O&M period, for any works which are identified as additional quantities of work items which were already part of the CIP (ex Pipelines, fittings, HSCs, meters, pumps, DMA meters, etc), execution of such additional quantities of work shall be treated as change in scope and shall be paid under clause 16.3 and will apply to change in O&M cost as provided in Clause 16.7. | Any change in Scope will be paid for in accordance with Article 16.3. However, if the Change in Scope results in an increase or decrease in the 'Bid Project Cost', then the provisions of Article 16.7 and 23.7 shall apply.<br><br>Bid Conditions confirmed. |
| 114 | - | - | Project Boundary MAP | We request you to kindly share the map of project boundary in a workable | Refer Annexure - III of Corrigendum - II. |

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| | | | | format like a GIS shapefile or at least a AutoCAD format. The current file is a PDF format which we cannot interact and analyze the data. | GIS shapefile for Project Boundary is uploaded to the portal.<br><br>*The information provided are for reference only.* |
| 115 | - | - | Water Gems Model | We request you to provide the Water Gems file for the model prepared in the DPR. | Please refer Annexure - IV of Corrigendum - II for Design sheets and hydraulic model, uploaded to the tender portal.<br><br>*The information provided are for reference only.* |
| 116 | Vol.2 DCA<br><br>DPR | Page. No. 48 / Cl. No. 6.1.2 H of DCA<br><br>Page No. 106/107 Point No.s 5.5& 5.6 of DPR | Water Supply & Demand and Authority's obligation | The initial period when the system is undergoing trials for converting intermittent system to continuous system, the volume of water lost in leakage will be high and as such the total demand will be more than historic average demand. It should be Authority's obligation to provide sufficient quantity as required on ground before a new average demand (towards end of construction period) can be established with efforts in consumer awareness on wastage, repairing their internal plumbing and efforts of NRW reduction in distribution network.<br>In the referred clause 6.1.2H, it refer to "**adequate availability of treated** | Bid Conditions confirmed. |

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| | | | | **water within the provisions of the Agreement."** Whereas adequate quantity should be as measured as required on field. In the DPR the estimates are based on 10% distribution losses. This is too low and should be revised for average 30% losses during construction period and 25% losses during O&M period. Further the calculation in table for demand in base year seems to be undervalued even with 10% distribution losses. This should be revised. Please confirm. | |
| 117 | - | - | Manpower transfer | We understand the Concessionaire will not be obliged or forced to take under his fold for O&M activity any manpower who are currently engaged in O&M of WSS and working with either the Authority as regular employees or as contract employees or through any contractor. Please confirm | The understanding is correct. |
| 118 | - | - | Historic Arrears | We understand the Concessionaire will not be responsible for collecting any historic arrears accumulated before the takeover of billing and collection responsibility. | The understanding is correct |
| 119 | General | - | Tariff Bye Law and Consumer Connection bye laws | We request you to provide the Authority's Bye laws for providing and disconnecting house service connection and bye laws for Tariff. | Please refer to Water / Metering Policy available at CMWSSB web site. 04Jan2023143529_CMWSSBMeteringPolicy21-12-2022r1_0.pdf |
| 120 | General | - | Public taps/ Stand Post | Please confirm all public taps within the | In consultation with the |

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| | | | | project boundary will have to be removed as part of reduction in NRW, KPIs measures. | Independent Engineer / Authority, remove the unnecessary public stand posts. In case found necessary, it should be metered. |
| 121 | General | - | City Development Plan | We request you to share City Development Plan if any prepared in the past. | City Development Plan / Master Plan may be accessed at Master Plan |
| 122 | Vol.2 DCA | Page No.s 109 and 110 Cl. No.s 23.4/23.5 | Payments | For payment of construction period, clause 23.4 provides for the following - 'Upon receiving a report from the Independent Engineer certifying the achievement of the below mentioned Payment Milestones, the Authority shall issue a payment advice to the Escrow Bank, within 15 (fifteen) days of receipt of each such report, for release of an instalment'.<br><br>However, there is no provision for timeline within which the Independent Engineer should certify the invoice and the report. We request that within 7 days of the invoice presented to Authority, 70% payment should be made through the Escrow account to the Concessionaire. The balance 30% to be paid after certification of Independent Engineer but not later than 15 days from the date of invoicing.<br><br>Further, in Clause 23.5 there is no mention of timeline for payment of O&M | Refer Addendum - II, Sl.No.13 |

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| | | | | during construction period. We request the above mechanism be also applied for O&M payments during construction period. Please confirm | |
| 123 | Vol.2 DCA | Article 23 | Payments | We request you to include interest payment (prevailing SBI PLR + 3%) in addition to compensation under Clause 23.4/23.5/23.6/23.7 for delay in payment to Concessionaire beyond 15 days from the date of invoicing. As Concessionaire is required to regularly service large debt and heavy working capital for the nature of this contract, any burden of interest arising from delay in timely payment by Authority cannot be at the cost Concessionaire. This is necessary to balance the risk of this contract. | Bid Conditions confirmed. |
| 124 | Vol.2 DCA | General | Governance | We understand proposed PPP concession contract structure is very different from regular contracts executed by engineers of Authority. As is prudently done in large water boards to execute large scale contract of this nature, we request a specialised cell with roles and responsibilities be formed. This cell shall administer the complex functions of Contract Authority under this contract with assistance of the Independent Engineer. We request the formationof this special cell be made a formal part of this Contract Agreement. | Bid Conditions confirmed. |

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| | | | | We request for governance structure with designated team/committee be made part of this contract to monitor, intervene and who has powers to resolve all technical, commercial, legal, contractual issues during execution of this Contract. We request for a procedure/ rule to set up monthly monitoring meetings by the team/committee and provide method/rules in the Contract for Concessionaire to approach higher level authority for any request and resolution. | |
| 125 | Vol.2 DCA | Page No. 31 / Cl. No. 4.1.2 | Authority's Condition Precedent | We request making provision of initial payment amount (min 2 quarters of O&M payment during construction period and 2 milestone payment for construction) in the Escrow Account a Condition Precedent of the Authority. | Bid Conditions confirmed. |
| 126 | Vol.2 DCA | Page No. 115<br><br>Article 25 | Escrow Account and Sources of funds | The Contract is silent on sources of funds for the construction works/O&M and annuity which the Authority proposes to use to pay the Concessionaire during the course of the contract.<br><br>For us as bidder, to approach any bank and take a in principle agreement for financing the proposed project, it is important to firmly know the sources of fund and underlying guarantees that will be applied to pay us during the Concession period. | Bid Conditions confirmed. |

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| 127 | Vol.2 DCA | Page No. 26 / Cl. No. 1.4.1 | Priority of Agreements, Articles and Schedules | Please confirm that between the RFP and pre-bid replies, pre-bid replies will prevail over the RFP conditions. | Addendums to the RFP and pre bid clarifications shall form part of the RFP |
| 128 | Vol.2 DCA | Page No. 32 / Cl. No. 4.1.3 (e) | Conditions Precedent | Some of the Applicable Permits may not be required to be in full force and effect during the Study Phase. Moreover, it may not be possible to obtain all such permits due to lack of sufficient information and data at the Study Phase.<br>Therefore, we request you to remove the "and such Applicable Permits ……effect" from the existing provision. | Bid Conditions confirmed. |
| 129 | Vol.2 DCA | Cl. No. 6.1 | Obligations of the Authority | Please confirm that the Authority will be responsible for directly paying the power charges, bulk water charges throughout the Concession Period. | Energy Charges during the Operation Period is dealt with in Article 23.8.2 of Draft Concession Agreement, Volume II.<br><br>Your understanding is correct |
| 130 | Vol.2 DCA | Article 10 | Right of Way | Please confirm that all the sites required for construction of Additional Project Facilities or for upgradation / rehabilitation of the Existing Project Facilities shall be procured by the Authority and handed over to the Concessionaire without any cost to the Concessionaire. In case of any delay in handing over then possession and rights of such sites, the Authority shall extend the Construction Period and | Article 10, Draft Concession Agreement, Volume II, abundantly clarifies. |

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| | | | | adjust milestones accordingly.<br><br>Further, also list out the office spaces of Authority, if any, along with the area and location, that will be handed over to the Concessionaire for the Contract Period. We presume these will be handed over free of cost. To that extent, the bidder shall not consider the cost of space in the Bid Price. | |
| 131 | Vol.2 DCA | Page No. 105 / Cl. No. 21.3 | Remuneration | Please indicate the maximum value to be considered for the 50% payment share of the Concessionaire as the same needs to be considered in the EPC Quote of the bidder. | Bid Conditions confirmed. |
| 132 | Vol.2 DCA | Page No. 107 / Cl. No. 22.1 | Financial Close | If the Concessionaire finances the project from its own resources and does not need the external financing, such damages or forfeiture of Performance Security should not apply.<br><br>Further this Article becomes redundant in such case. Please confirm. | Bid Conditions confirmed. |
| 133 | Vol.2 DCA | Page No. 50 / Schedule C 1.0 | Milestone and penalties | Currently we believe LD linked with milestones is very high. We request the amount of LDs be reduced by 2/3rd to bring it down to reasonable level. Please confirm | Bid Conditions confirmed.<br><br>Refer Addendum - II – Annexure - I - Revised Schedule C |
| 134 | Vol.2 DCA / Schedules | Page No. 93 Article 17 – Operation & Maintenance | User Service Centers timing | As per the scope, the USCs shall function between 8am to 8pm during business days including Saturdays and between 8am to 1pm during public | Bid Conditions confirmed. |

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| | | 17.11 | | holidays including Sundays.<br><br>As per the standard approach, the USC centre should operate from 9 AM to 5 PM on all working days. During non-operational hours, customers can contact the call centre or use the self-service portal for any queries or concerns. Kindly review and confirm the operating timings of the USC based on this standard approach. | |
| 135 | RFP Volume-2 Schedules | 4<br>Annexure-II | Existing project facilities | Please provide the as-built drawings of existing pumping stations and reservoirs | Refer Annexure - I of Corrigendum - II for available drawings of WDS.<br><br>*The information provided are for reference only.* |
| 136 | RFP Volume-2 Schedules | 4<br>Annexure-II | Existing project facilities | Please provide condition assessment study report of existing pumping stations and reservoirs for evaluating cost of rehabilitation works. | Please refer Corrigendum - I (DPR) and refer Annexure - I of Corrigendum - II.<br><br>However, the Bidders are encouraged to study and do their own assessment before quoting. |
| 137 | RFP Volume-2 Schedules | 11<br>Clause No. 3.2.1(c) | Design Life | As per this tender clause design life of pumping station and storage reservoirs are 15 years. Construction of existing pumping stations Thiruvanmiyur was in 2013 and Pallipatu in 2000. Thiruvanmiyur and Pallipatu pumping stations has achieved their life 12 and | The scope of work of the bid document provisions for rehabilitation of the pumping stations including replacement of pumps. |

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| | | | | 25 year respectively.<br><br>Pallipatu pumping station has already achieved his design life and Thiruvanmiyur is almost near to design life. So, we presume that concessioner has to be consider cost for new construction of both pumping stations please confirm. | However, the Bidders are encouraged to study and do their own assessment before quoting.<br><br>Bid Conditions Confirmed |
| 138 | RFP Volume-2 Schedules | 13<br>Clause No. 3.2.2 (iii) | Optimizing Service Storage | During detail design if concessionaire found that existing storage capacity is not sufficient or structurally unsafe, in that case construction of new reservoir will be additional scope please confirm. | The Bid Conditions Confirmed. |
| 139 | RFP Volume-2 Schedules | 16<br>Clause No. 3.3.2(b) | Operational Zone to DMA monitoring & control | As per tender OFC cable will be laid along the pipeline from DMA control unit to nearest PLC panel/server. So please provide the length of OFC cable for costing. | Please refer Corrigendum - I (DPR) |
| 140 | RFP Volume-2 Schedules | 66<br>Clause No. 1.2.5 | Road Restoration | As per tender "The restoration of the top surface of the road will be the responsibility of the Authority"<br>Road works have number of different types of top surface (Granular Sub-base, WBM/WMM, Bituminous Macadam/Un reinforced pavement quality concrete), we presume that concessioner will backfill with the excavated materials only and all other layers are in Authority's scope please confirm. | Clause no. 1.2.5 of Part II of Volume II abundantly clarifies. |
| 141 | RFP Volume-2 Schedules | 74<br>Clause No. 3.1.4 | Classification of Excavation | As per this tender clause "For pipeline trenches all the materials and strata encountered in the excavation shall | Refer Annexure - II of Corrigendum - II. |

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| | | | | mainly be classified in three categories as specified in BOQ."<br>Concessioner has not received such BOQ in tender document so please provide the same. | *The information provided are for reference only.* |
| 142 | RFP Volume-2 Schedules | 74<br>Clause No. 3.1.5 | Excavation in all kinds of soils | As per tender "The subsequent disposal of the excavated material shall be either stated as a separate item or included with the items of **excavation stating lead**." In tender we are unable to find the lead of disposal for excavated surplus earth, so please provide the same for costing. | Refer Annexure - II of Corrigendum - II.<br><br>*The information provided are for reference only.* |
| 143 | | General | Clarification on KPI Applicability During Public Opposition<br>to Metering, Billing & collection. | We would like to seek your clarification regarding a potential scenario where public opposition arises towards the installation of water meters, subsequent billing & collection.<br><br>In such an event, we understand this situation may fall under Force Majeure, as it is beyond the reasonable control of the Concessionaire. Accordingly, we presume that the applicable Key Performance Indicators (KPIs) would not be enforced until a mutually agreeable solution is implemented.<br>Kindly confirm! | Bid conditions confirmed. |
| 144 | | General | Clarification on Battery Limits of the Project Scope | As per our understanding of the tender documents, the bidder's scope of work commences from the outlet of the Water Distribution Stations (WDS) and extends up to the consumer end, terminating at the water meter | Your understanding is correct. |

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| | | | | connection.<br><br>We also understand that the installation of taps or any internal tap connections beyond the water meter is not included in the bidder's scope under the wards allocated to each WDS.<br>Kindly confirm whether our understanding of the battery limit and scope of work is correct? | |
| 145 | | General | Mobilization Advance | We have reviewed the tender documents and noted that there is no provision for mobilization advance under the current terms.<br>In order to facilitate smooth project mobilization and maintain effective cash flow during the initial phase, we kindly request the authority to consider provision of 10% interest-free mobilization advance.<br>This support will significantly enhance the efficiency of project commencement and execution. | Bid Conditions Confirmed. |
| 146 | | General | Methodology for calculating and monitoring Non-Revenue Water (NRW) and total water production. | As part of our review of the bid documents, we seek clarification on the methodology for calculating and monitoring Non-Revenue Water (NRW) and total water production. Kindly confirm:<br>Query:<br>Is the monitoring and calculation of NRW and total water production to be done:<br>a) At the outlet of each Water | Refer Addendum – II - Annexure - I (Revised Schedule C) |

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| | | | | Distribution Station (WDS), based on total supply?<br>or<br>b) After accounting for all forms of losses such as leakages, theft, illegal tap connections, and other factors directly contributing to NRW?<br>Your clarification will help us align our approach with the project's expectations. | |
| 147 | | General | Current NRW percentage. | Kindly share NRW data in percentage of the last 5 months. | At present it is an intermittent water supply system<br><br>The bidder may undertake the necessary field investigations to ascertain the information. |
| 148 | | General | Scope of alternate water supply arrangements (If required) | As per our understanding of the tender documents, in the event of an emergency or in any circumstances where alternative water supply arrangements such as tankers or other sources are required to meet consumer demand, the responsibility for providing such arrangements will lie within the Employer's scope.<br><br>Kindly confirm the same. | Refer Article no. 17.2.11 of RFP Volume II Draft Concession Agreement.<br><br>In the event of reduction in the quality or quantity of water available for any reason other than Force Majeure including the periods of reduced availability of treated water, the Authority shall provide alternative water supply through its sources. |

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| 149 | | General | Manpower consideration as per adopted technology and operational requirements. | We have reviewed the tender document and understand that the contractor is responsible for operating the plant efficiently, and that the deployment of manpower should be aligned with the adopted technology and operational requirements.<br><br>We would like to confirm that there is no specific mandate from the client side regarding the minimum number of personnel to be deployed, and that the contractor has the flexibility to determine the required manpower based on the chosen technology and performance standards.<br><br>Kindly confirm if our understanding is correct. | It is clarified that, the concessionaire shall be responsible for manning all operational locations at any given point of time through-out the concession period, in accordance with the provisions of the RFP.<br><br>Bid Conditions confirmed. |
| 150 | | General | Request for Existing Consumer and Billing Details. | As part of the groundwork required for accurate planning and financial modelling of the 24x7 Water Supply Project, we kindly request the following consumer and billing data:<br>1. Consumer Details:<br>a) Total number of water connections (metered and unmetered)<br>b) Category-wise breakup (Domestic, Commercial, Industrial, Institutional, BPL, etc.)<br>c) Zone-wise or ward-wise consumer distribution<br>d) GIS mapping status (if available)<br>2. Billing & Revenue Information: | • The GIS based Maps and database of consumers along with the DPR may be referred which is uploaded to the tender portal.<br>• Current Water Tariff can be accessed at the website of CMWSSB.<br>• At present, billing frequency for metered consumers is monthly and through manual mode. For unmetered |

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| | | | | a) Current water tariff structure (including fixed/variable charges and slabs).<br>b) Billing frequency and mode (monthly/bi-monthly; manual/automated).<br>c) Average monthly billed consumption and revenue (last 12–24 months).<br>d) Collection efficiency and billing efficiency.<br>e) Outstanding dues and arrears (category-wise).<br>f) Non-Revenue Water (NRW) estimate and methodology used.<br>3. Metering Details:<br>a) Number and type of meters installed (mechanical, AMR, smart meters).<br>b) Meter health and accuracy reports (if available).<br>4. Billing Software/System Used:<br>a) Name and features of the billing system currently in use.<br>b) Integration capability with proposed technologies (e.g., SCADA, AMI).<br><br>These details are essential for preparing an accurate working plan and financial model for the tender. | consumers it is half yearly and through automated mode.<br>• Current Collection efficiency is 88% for the FY 2024-25.<br>• At present it is an intermittent water supply system. The bidder may undertake the necessary field investigations to ascertain the information regarding NRW.<br>• 2306 meters are installed which is a combination of Mechanical and AMR / AMI meters.<br>• At present CMWSSB uses custom developed billing software. The features may be assessed by the bidder on its own.<br>Bidder has to do its own assessment to understand integration capability. |
| 151 | | | Clause 16.3 Payment for Change in Scope | We understand that the Authority shall make an advance payment to the Concessionaire equal to 20% (twenty percent) of the agreed cost of the Change of Scope. In the event of a dispute, 20% of the cost assessed by | Bid Conditions confirmed. |

| S. No. | Tender Vol. / Section | Page No / Clause No | Title | Bidder's Query | Response |
|---|---|---|---|---|---|
| | | | | the Independent Engineer shall be payable.<br><br>During the study period, the Contractor will be in a position to thoroughly assess the actual condition of the existing system and determine the precise scope of replacements required. Accordingly, we request that the amount payable under the Change of Scope be increased in cases where the required changes exceed the initially estimated 20%, to ensure timely execution and financial viability of the additional works. | |
| 152 | | General | Concern Regarding Head Requirement and Pipeline Modifications. | As per the current design, the existing distribution network and structures have been developed considering a 7-meter consumer head. However, the tender mandates a residual head of 17 meters at the consumer end.<br>Meeting this requirement will necessitate significant modifications, including substantial changes to the existing structures and an increase in pipeline diameters. It is technically unfeasible to integrate larger diameter pipes with the current pipeline system. Consequently, achieving the required residual head would effectively mean replacing approximately 90% - 100% of the existing pipelines.<br>We request you to kindly take this critical aspect into consideration while | At present, at WDS level, the discharge head is 32m and the distribution system is designed for flat pumping.<br><br>Please refer Corrigendum - I for the DPR for present system details and Annexures - III & - IV of Corrigendum - II.<br><br>At present it is an intermittent water supply system. The bidder may undertake the necessary field investigations to ascertain the necessary information. |

| S. No. | Tender Vol. / Section | Page No / Clause No | Title | Bidder's Query | Response |
|---|---|---|---|---|---|
| | | | | reviewing the scope and feasibility of integration. | |
| 153 | Addendum I, RFP Volume I | **Technical Capacity Clause 2.2.4.A2** | The Bidder with respect operation and maintenance of projects, shall over the past 7 (seven) financial years preceding the Bid Due Date, have: experience in operation and maintenance of **continuous pressurized urban water supply distribution system and/or transforming intermittent water supply system to a continuous water supply;** For the experience criteria mentioned above, the bidder should have executed:<br><br>a) a single project (hydraulic zone) with at least 30,000 water connections; or<br>b) two separate projects (hydraulic zone) each having at least 20,000 water connections;<br><br>for a continuous period of 2 (two) years in the last 7 (seven) years prior to the Bid Due date, such that the Applicant meet the criteria under (A2) (a) and (b) above (the "Threshold Technical | The bidder can have experience in operation and maintenance of continuous pressurized urban water supply distribution system **and/or** transforming intermittent water supply system to a continuous water supply | Bid Conditions Confirmed.<br><br>Refer Addendum - II, Sl. No.10 |

| S. No. | Tender Vol. / Section | Page No / Clause No | Title | | Bidder's Query | Response |
|---|---|---|---|---|---|---|
| | | | Capacity – O&M"). | | | |
| 154 | Addendum I, RFP Volume I | Appendix I A – Annex - VI O & M Capacity | Items (1) | Particulars of the Project (3) | As per the above clause of RFP, the bidder must have experience in operation and maintenance of continuous pressurized urban water supply distribution system and/or transforming intermittent water supply system to a continuous water supply.<br><br>However, in the table of APPENDIX IA ANNEX-VI O&M CAPACITY, it is asked whether the Bidder has transformed the intermittent water supply system to a continuous water supply system in a water distribution operation.<br><br>We request that the condition of above clause prevail, and bidder can meet the experience for **continuous pressurized urban water supply distribution system/ transforming intermittent water supply system to a continuous water supply.** | Bid Conditions Confirmed |
| | | | Tasks Covered | O&M □<br>Loss reduction □<br>Leak Detection □<br>Metering □<br>Customer Information Management □<br>Billing and Collection □ | | |
| | | | Did the Bidder Transform intermittent water supply system to a continuous water supply system in a water distribution operation in respect of serving a single project of at least 30,000 water connections or two | | | |

| S. No. | Tender Vol. / Section | Page No / Clause No | Title | | Bidder's Query | | Response |
|---|---|---|---|---|---|---|---|
| | | | separate projects each serving at least 20,000 water connections for a continuous period of 2 years over the past 7 financial years. | | | | |
| | | | Did the Bidder Operated and Maintained water distribution system including commercial operations (metering, billing, collection, and customer services through IT support) in a water | | | | |

| S. No. | Tender Vol. / Section | Page No / Clause No | Title | Bidder's Query | Response |
|---|---|---|---|---|---|
| | | | distribution operation in respect of serving a single project of at least 30,000 water connections or two separate projects each serving at least 20,000 water connections for a continuous period of 2 years over the past 7 financial years | | |

Sd/- 30.06.2025
Engineering Director.i/c

## Addendum - II

Name of Work: Implementation of continuous Water Supply of Pallipattu WDS & Thiruvanmiyur WDS under Area XIII of Chennai City under Hybrid Annuity Model (HAM)

Tender No: CNT/WSS/NCB/AMRUT–GoTN/400MLD/CP4/012/2024-25

| Sl. No. | Document Clause / Sub Clause No. | Clause /Sub Clause (Section and Page No.) | Original Clause | As amended |
|---|---|---|---|---|
| 1. | RFP Volume II – Part II - Schedule B: Development Requirements | 3.3.2 – Distribution Network Improvement (d) | **House service connection**: The house connections are to be provided with saddle and compression fittings. An AMR flow meter with AMI Infrastructure shall be installed with an isolation valve at consumer point. The AMR meters to communicate data to gateways through LORA band and from gateways to server through GSM services. | **House service connection**: The house connections are to be provided with saddle and compression fittings. **An AMI Smart Water meter** with AMI Infrastructure shall be installed with an isolation valve at consumer point. The AMI Smart Water meters to communicate data to gateways through LORA band and from gateways to server through GSM services.<br><br>For all purpose, AMR Smart Water Meters are to be read as **AMI** Smart Water Meters. (**AMI** water electromagnetic / Ultrasonic meters DN15 / 20 to DN40 having no moving parts and confirming to ISO 4064) and MID approved. |
| 2. | RFP Volume II, Part II - Schedule B: Development Requirements, Annexure-1: Scope of Services, | Clause No.3.3.3. Data Collection, Monitoring, Command and Control, Sl.no 21<br><br>Page 18 of 261 | 3.3.3. Data Collection, Monitoring, Command and Control<br>a) Table containing components for SCADA & Automation, Instrumentation for Smart Water Management,<br><br>Sl.no 21, Network Meter Reading Device | Sl. No 21. **Meter reading Device** |
| 3. | RFP Volume II, Part II – | 3. Asset Replacement, Consumer meters | 3. Asset Replacement:<br>Consumer Meters; Once in [4] years or as and when required | 3. Asset Replacement & 4. Preventive Maintenance<br>**Consumer meters** – **Shall have warranty for the** |

| Sl. No. | Document Clause / Sub Clause No. | Clause /Sub Clause (Section and Page No.) | Original Clause | As amended |
|---|---|---|---|---|
| | Annexure-2: Operation & Maintenance Requirement | Page 25 & 26 of 261 | Bull Meters and Pressure Loggers: Once in [5] years or as and when required<br><br>4. Preventive Maintenance<br>Replace Consumer meters – once in 15 years<br>Replace bulk meters – once in 15 years | **entire Concession Period and shall be replaced as and when required.**<br>**Bulk meters and Pressure Loggers – Shall have warranty for the entire concession period and shall be replaced as and when required.** |
| 4. | RFP Volume – II (Part-II)<br><br>Schedule D: Technical Specification and Standards,<br>Section 2: Construction Requirements,<br>General, | 1.2.3. House Service Connection, Clause No.(g)<br>Page 66 of 261 | The Consumer meters shall be of AMI enabled AMR Smart Water meters conforming to relevant IS standards and shall have been certified by EEC/OIML & IP-68. The meters shall be installed in lockable meter chambers made of strong rigid plastic materials. | The Consumer meters shall be AMI Smart Water meters conforming to relevant IS standards and shall have been certified by **MID (B + D, H) & IP-68 / OIML /IP-68**. The meters shall be installed in lockable meter chambers made of strong rigid plastic materials. |
| 5. | RFP Volume – II (Part-II)<br>SCHEDULE D – Technical Specifications and Standards | 5.1.3 – Technical Specification for Bulk Potable Water Meters:-<br>Clause No.1) Type of Meters:-<br>Page 118 of 261 | The meter should be capable of installation in any plane with no change in accuracy of reading. The meter should also be able to function in reverse flow. the meter shall confirm to ISO 4064 standard with EEC certification. | The meter should be capable of installation in any place with no change in accuracy of reading. The meter should also be able to function in reverse flow. The meter shall confirm to ISO 4064 standard with **MID / OIML** certification. |
| 6. | RFP Volume II – (Part I)<br>Article 5.9 Obligations during Study Period | Clause No. 5.9.6(c)<br>Page 45 of 164 | Provided that no such approval may be deemed, if, pursuant to the draft CIP additional works is required to be performed by the Concessionaire, which shall be taken up as per Article 5.9.6 (j)." | Clause to be read as "Provided that no such approval may be deemed, if, pursuant to the draft CIP additional works is required to be performed by the Concessionaire, which shall be taken up as per **Article 5.9.5(j)**." |
| 7. | RFP Volume II – (Part II)<br>Schedule M – List of | Sr. No. 41 – Amr Water Meters<br>Page 197 of 261 | Schedule M – List of Makes of Equipment<br>Sr. No. 41 – Amr Water Meters | Schedule M – List of Makes of Equipment<br>Sr. No. 41 – AMI / AMR Water Meters |

| Sl. No. | Document Clause / Sub Clause No. | Clause /Sub Clause (Section and Page No.) | Original Clause | As amended |
|---|---|---|---|---|
| | Makes of Equipment | | Xylem India<br>IXOM Water care<br>Zenner Water Meters ·<br>Toshniwal Water Meters<br>Baylon<br>DEIHL | Xylem India<br>IXOM Water care<br>Zenner Water Meters ·<br>Toshniwal Water Meters<br>Baylon<br>DEIHL<br>**ITRON** |
| 8. | RFP Volume II, Part II. Schedule K Specific O & M Requirements 4.2.1 General Obligations | (g) The Concessionaire shall undertake the measures as agreed under the Emergency Procedures as per para 5.1 herein in times of operational exigencies.<br>Page 167 of 261 | Any leakages observed in the distribution line, rising main and feeder main shall be attended immediately and water supply<br>restored within 12 Hours of the receipt of complaint for leakage. | Any Leakages observed in the distribution line, rising main and feeder main shall be attended immediately and water supply shall be restored within a maximum time period of **24 hours** of the receipt of complaint for leakage, in consultation with the Independent Engineer. |
| 9. | Addendum – I – RFP Volume I **Eligibility and qualification requirements of Bidder** | 2.2.4 To be eligible for this RFP a Bidder shall fulfil the following conditions of eligibility:<br>A1 – Technical Capacity<br>Page no 26 of 82 | "Technical Capacity"), the following shall be considered:<br>A1. Technical Capacity – Implementation The Bidder shall, over the past 7 (seven) financial years preceding the Bid Due Date, have:<br>i. paid for development of Eligible Project(s) in Category 1 and/or Category 2 specified in Clause 3.4.1; and/ or<br>ii. collected and appropriated revenues from Eligible Project(s) in Category 1 and/or Category 2 specified in Clause 3.4.1,<br>iii. paid for, or received payments for, construction of Eligible Project(s) in Category 3 and/or Category 4 specified in Clause 3.4.1. | "Technical Capacity"), the following shall be considered:<br>A1. Technical Capacity – Implementation The Bidder shall, over the past **10 (Ten)** financial years preceding the Bid Due Date, have:<br>i. paid for development of Eligible Project(s) in Category 1 and/or Category 2 specified in Clause 3.4.1; and/ or<br>ii. collected and appropriated revenues from Eligible Project(s) in Category 1 and/or Category 2 specified in Clause 3.4.1,<br>iii. paid for, or received payments for, construction of Eligible Project(s) in Category 3 and/or Category 4 specified in Clause 3.4.1. |

| Sl. No. | Document Clause / Sub Clause No. | Clause /Sub Clause (Section and Page No.) | Original Clause | As amended |
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| | | | such that the sum total of the above (cumulative for the project period), as further adjusted in accordance with clause 3.4.7, is more than Rs. 500 crore (Rupees Five Hundred Crore only) (the "Threshold Technical Capacity - Implementation").<br>Provided that at least one fourth of the Threshold Technical Capacity shall be from the Eligible Projects in Category 1 and/ or Category 3 specified in Clause 3.4.1.<br>Provided that at least one similar work with an aggregate project cost of at least (i) Rs. 60 crore (Rupees Sixty Crore only) from the Eligible Projects shall have been completed by the single entity Bidder or the Lead Member. For this purpose, a project shall be considered to be completed, if more than 90% of the value of work has been completed and such completed value of work is equal to or more than Rs. 60 crore (Rupees Sixty Crore only). | such that the sum total of the above (cumulative for the project period), as further adjusted in accordance with clause 3.4.7, is more than **Rs. 450 crore (Rupees Four Hundred Fifty Crore only)** (the "Threshold Technical Capacity - Implementation"). Provided that at least one fourth of the Threshold Technical Capacity shall be from the Eligible Projects in Category 1 and/ or Category 3 specified in Clause 3.4.1.<br>Provided that at least one similar work with an aggregate project cost of at least (i) Rs. 60 crore (Rupees Sixty Crore only) from the Eligible Projects shall have been completed by the single entity Bidder or the Lead Member. For this purpose, a project shall be considered to be completed, if more than **80%** of the value of work has been completed or completed value of work is equal to or more than Rs. 60 crore (Rupees Sixty Crore only). |
| 10. | Addendum – I – RFP Volume I<br>**Eligibility and qualification requirements of Bidder** | 2.2.4 To be eligible for this RFP a Bidder shall fulfil the following conditions of eligibility:<br>A2 – Technical Capacity (O & M)<br>Page no 27 of 82 | The Bidder with respect operation and maintenance of projects, shall over the past 7 (seven) financial years preceding the Bid Due Date, have:<br>experience in operation and maintenance of continuous pressurized urban water supply distribution system and/or transforming intermittent water supply system to a continuous water supply;<br>For the experience criteria mentioned above, the bidder should have executed:<br>a) a single project (hydraulic zone) with at least 30,000 water connections; or | The Bidder with respect operation and maintenance of projects, shall over the past **10 (Ten)** financial years preceding the Bid Due Date, have:<br><br>experience in operation and maintenance of continuous pressurized urban water supply distribution system and/or transforming intermittent water supply system to a continuous water supply;<br><br>For the experience criteria mentioned above, the bidder should have executed: |

| Sl. No. | Document Clause / Sub Clause No. | Clause /Sub Clause (Section and Page No.) | Original Clause | As amended |
|---|---|---|---|---|
| | | | b) two separate projects (hydraulic zone) each having at least 20,000 water connections;<br>for a continuous period of 2 (two) years in the last 7 (seven) years prior to the Bid Due date, such that the Applicant meet the criteria under (A2) (a) and (b) above (the "Threshold Technical Capacity – O&M"). | a) a single project (hydraulic zone) with at least 30,000 water connections; or<br><br>b) two separate projects (hydraulic zone) each having at least 20,000 water connections.<br><br>for a continuous period of 2 (two) years in the last **10 (Ten)** years prior to the Bid Due date, such that the Applicant meet the criteria under (A2) (a) **or** (b) above (the "Threshold Technical Capacity – O&M"). |
| 11. | Addendum – I – RFP Volume I<br>**1.1 Background**<br>Clause No. 1.1.2<br>Scope of Work | The Project – Scope of the Project<br>Page 12 of 82 | 1.1.2 **The Project:**<br>CMWSSB has identified water distribution improvement project covering the service areas under the Depot no. 170, 173, 174, 178, 179 & 169 (part-50%) supply from Pallipatu Water Distribution Station (WDS) & Depot No. 180 supplied from Thiruvanmiyur WDS for reduction of Non-Revenue Water (NRW) and improving customer service levels with provision of continuous pressurized water supply subject to availability of sufficient bulk water supply.<br><br>The project area is situated at eastern part of Chennai falls within the command area of Nemmeli Sea water Desalination plant. | **1.1.2 The Project:**<br>CMWSSB has identified water distribution improvement project covering the service areas under the Depot no. 170, 173, 174, 178, 179 & 169 (part-50%) supply from Pallipatu Water Distribution Station (WDS) & Depot No. 180 supplied from Thiruvanmiyur WDS for reduction of Non-Revenue Water (NRW) and improving customer service levels with provision of continuous pressurized water supply subject to availability of sufficient bulk water supply.<br><br>The project area is situated at eastern part of Chennai falls within the command area of Nemmeli Sea water Desalination plant. |

| Sl. No. | Document Clause / Sub Clause No. | Clause /Sub Clause (Section and Page No.) | Original Clause | As amended |
|---|---|---|---|---|
| | | | **Project Area:**<br>a. The project area spread over about 17.9 sq.km. is located in the eastern part of Chennai with significant proportion of water supply supplied from the Nemmeli Sea water Desalination plant. A key map showing the location of Pallipatu WDS & Thiruvanmiyur WDS command areas is provided in Schedule A of the Draft Concession Agreement (DCA).<br>b. The existing water network infrastructure within the project area comprises of 6.97 km of Zonal feeder main and 44.24 km of DMA feeder main and a total length of water distribution network of 326.47 km. Most of the pipes of the project area are in Ductile Iron (DI), Cast Iron (CI) & Mild Steel(MS).<br>c. The project area comprises of 7 different operational zones viz., depots 170, 173, 174, 178, 179 & 169 (part-50%) supplied from Pallipatu WDS & depot No.180 supplied from Thiruvanmiyur WDS for civil, Electrical & Maintenance operations.<br>**The Concession:**<br>CMWSSB intends to appoint a private Concessionaire for "Implementation of Continuous water supply of Pallipatu WDS & Thiruvanmiyur WDS under Area XIII of Chennai City under Hybrid Annuity Model (HAM)" (the "Project") through Public Private Partnership (the "PPP") on Design, Build, Finance, Operate and Transfer ("DBFOT Annuity or Hybrid Annuity") basis. The | **Project Area:**<br>a. The project area spread over about 17.9 sq.km. is located in the eastern part of Chennai with significant proportion of water supply supplied from the Nemmeli Sea water Desalination plant. A key map showing the location of Pallipatu WDS & Thiruvanmiyur WDS command areas is provided in Schedule A of the Draft Concession Agreement (DCA).<br>b. The existing water network infrastructure within the project area comprises of 6.97 km of Zonal feeder main and 44.24 km of DMA feeder main and a total length of water distribution network of 326.47 km. Most of the pipes of the project area are in Ductile Iron (DI), Cast Iron (CI) & Mild Steel(MS).<br>c. The project area comprises of 7 different operational zones viz., depots 170, 173, 174, 178, 179 & 169 (part-50%) supplied from Pallipatu WDS & depot No.180 supplied from Thiruvanmiyur WDS for civil, Electrical & Maintenance operations.<br>**The Concession:**<br>CMWSSB intends to appoint a private Concessionaire for "Implementation of Continuous water supply of Pallipatu WDS & Thiruvanmiyur WDS under Area XIII of Chennai City under Hybrid Annuity Model (HAM)" (the "Project") through Public Private Partnership (the "PPP") on Design, Build, Finance, Operate and Transfer ("DBFOT Annuity or Hybrid Annuity") basis. The development obligations of the Concessionaire |

| Sl. No. | Document Clause / Sub Clause No. | Clause /Sub Clause (Section and Page No.) | Original Clause | As amended |
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| | | | development obligations of the Concessionaire are as follows:<br><br>a) Extend the existing water distribution to achieve full coverage of customers within the project area.<br>b) Optimise the performance of the existing water distribution system to ensure delivery of at least an average 150 lpcd water supply per person at a minimum pressure of 17m conforming to the National Service Level Benchmarks fixed by MoHUA.<br>c) Transform the prevailing intermittent water supply system to a continuous pressurized water supply system.<br>d) Provide well engineered and tested customer service connections duly installed with 100% metering in the project area.<br>e) Reduce non-revenue water to less than 20% and sustain and further reduce during the contract period.<br>f) Establish and improve the quality and timely response of customer services and complaint redressal to 90% efficiency.<br>g) Ensure maintaining residual chlorine at customer taps conforming to water quality standards.<br>h) Improve the revenue billing and collection efficiency in compliance to the requirements of key performance indicators.<br><br>The overall scope of work of the Concessionaire is as follows: | are as follows:<br><br>a) Extend the existing water distribution to achieve full coverage of customers within the project area.<br>b) Optimise the performance of the existing water distribution system to ensure delivery of at least an average 150 lpcd water supply per person at a minimum pressure of 17m conforming to the National Service Level Benchmarks fixed by MoHUA.<br>c) Transform the prevailing intermittent water supply system to a continuous pressurized water supply system.<br>d) Provide well engineered and tested customer service connections duly installed with 100% metering in the project area.<br>e) Reduce non-revenue water to less than 20% and sustain and further reduce during the contract period.<br>f) Establish and improve the quality and timely response of customer services and complaint redressal to 90% efficiency.<br>g) Ensure maintaining residual chlorine at customer taps conforming to water quality standards.<br>h) Improve the revenue billing and collection efficiency in compliance to the requirements of key performance indicators.<br><br>The overall scope of work of the Concessionaire is as follows:<br>a) Planning, designing and engineering of the Project |

| Sl. No. | Document Clause / Sub Clause No. | Clause /Sub Clause (Section and Page No.) | Original Clause | As amended |
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| | | | a) Planning, designing and engineering of the Project<br>b) Financing of the Project upto 40% of the Bid Project Cost (Construction).<br>c) Procurement of equipment and materials required for the Project<br>d) Construction and commissioning of the Project:<br>(i) The Concessionaire shall assess the existing infrastructure/ assets.<br>(ii) Identify gaps in terms of quality/ condition of the existing assets and capacity of the existing assets.<br>(iii) Undertake rehabilitation of existing assets to ensure compliance with Specifications and Standards, and Applicable Laws, and to ensure fulfilment of KPIs in accordance with Schedule C of Volume II.<br>(iv) Propose and develop new infrastructure to meet capacity gaps<br>e) Operation and maintenance of the Project during the Operation Period<br>f) Compliance with all Applicable Laws<br>g) Fulfilment of the KPIs<br>h) Transfer of the Project Assets to the Authority upon expiry or early termination of the Concession Agreement<br>The Chennai Metropolitan Water Supply and Sewerage Board ("**Authority**") now invites bids for the project, the brief particulars of which are as follows: | b) Financing of the Project upto 40% of the Bid Project Cost (Construction).<br>c) Procurement of equipment and materials required for the Project<br>d) Construction and commissioning of the Project:<br>(i) The Concessionaire shall assess the existing infrastructure/ assets.<br>(ii) Identify gaps in terms of quality/ condition of the existing assets and capacity of the existing assets.<br>(iii) Undertake rehabilitation of existing assets to ensure compliance with Specifications and Standards, and Applicable Laws, and to ensure fulfilment of KPIs in accordance with Schedule C of Volume II.<br>(iv) Propose and develop new infrastructure to meet capacity gaps<br>e) Operation and maintenance of the Project during the Operation Period<br>f) Compliance with all Applicable Laws<br>g) Fulfilment of the KPIs<br>h) Transfer of the Project Assets to the Authority upon expiry or early termination of the Concession Agreement<br>The Chennai Metropolitan Water Supply and Sewerage Board ("**Authority**") now invites bids for the project, the brief particulars of which are as follows: |

<table>
<tr><th>Sl. No.</th><th>Document Clause / Sub Clause No.</th><th>Clause /Sub Clause (Section and Page No.)</th><th>Original Clause</th><th>As amended</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td>Name of the Project</td><td>Scope of the Project</td></tr>
<tr><td>Selection of Concessionaire for Implementation of continuous water supply of Pallipatu WDS & Thiruvanmiyur WDS under Area XIII of Chennai City under Hybrid Annuity Model (HAM)</td><td>Construction, Operation and Maintenance of the Project Assets and all works, services and equipment relating to or in respect of the Scope of the Project in Site comprising all Project Assets, and its subsequent development and augmentation in accordance with provisions of the Concession Agreement on Hybrid Annuity Model<br>Development Period leading to Appointed Date – 150 Days from the date of signing of the Concession Agreement<br>Construction Period leading to COD – 2 Years, i.e., 730 Days from the Appointed Date<br>Operation Period-</td></tr>
</table>
</td><td>
<table>
<tr><td>Name of the Project</td><td>Scope of the Project</td></tr>
<tr><td>Selection of Concessionaire for Implementation of continuous water supply of Pallipatu WDS & Thiruvanmiyur WDS under Area XIII of Chennai City under Hybrid Annuity Model (HAM)</td><td>Construction, Operation and Maintenance of the Project Assets and all works, services and equipment relating to or in respect of the Scope of the Project in Site comprising all Project Assets, and its subsequent development and augmentation in accordance with provisions of the Concession Agreement on Hybrid Annuity Model<br>Development Period leading to Appointed Date – 150 Days from the date of signing of the Concession Agreement<br>Construction Period leading to COD – 2 Years, i.e., 730 Days from the Appointed Date<br>Operation Period-<br>1) 15 Years, i.e., 5475 Days from COD<br>2) O&M of existing assets during the construction period</td></tr>
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<tr><th>Sl. No.</th><th>Document Clause / Sub Clause No.</th><th>Clause /Sub Clause (Section and Page No.)</th><th>Original Clause</th><th>As amended</th></tr>
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<table>
<tr><td></td><td>1) 15 Years, i.e., 5475 Days from COD<br>2) O&M of existing assets during the construction period</td></tr>
</table>
<br>The Authority intends to award the Project through an open competitive bidding process set out herein and in compliance with the following:<br>a) Tamil Nadu Transparency in Tenders Act, 1998;<br>b) Tamil Nadu Transparency in Tenders Rules 2000;<br>c) Tamil Nadu Transparency in Tenders (Public Private Partnership Procurement) Rules 2012;<br>d) Tamil Nadu Infrastructure Development Act, 2012;<br>e) Tamil Nadu Infrastructure Development Rules, 2012; and<br>f) Tamil Nadu Infrastructure Development Regulations, 2013</td><td><u>The required number of DMAs and Lane Controllers as per the assessment are as below:</u>
<table>
<tr><td><u>Number of DMAs</u></td><td><u>125</u></td></tr>
<tr><td><u>Lane level flow measurement controllers</u></td><td><u>750</u></td></tr>
</table>
<br><u>The details of the Condition Assessment of the existing pipelines are provided in the DPR. The summary of the same is provided below:</u>
<table>
<tr><td><u>Existing Network</u></td><td><u>296.78 Km</u></td></tr>
<tr><td><u>New pipelines proposed (unserved areas)</u></td><td><u>80.66 Km</u></td></tr>
<tr><td colspan="2"><u>Based on condition assessment</u></td></tr>
<tr><td><u>Pipelines requiring replacement</u></td><td><u>33.04 Km</u></td></tr>
<tr><td><u>Pipelines Requiring flushing</u></td><td><u>11.00 Km</u></td></tr>
<tr><td><u>Medium risk pipes</u></td><td><u>42.14 Km</u></td></tr>
<tr><td><u>Low risk pipes</u></td><td><u>210.60</u></td></tr>
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<tr><th>Sl. No.</th><th>Document Clause / Sub Clause No.</th><th>Clause /Sub Clause (Section and Page No.)</th><th>Original Clause</th><th>As amended</th></tr>
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<table>
<tr><td></td><td><u>Km</u></td></tr>
</table>
<u>Bidders are advised to refer the DPR for further details on the above and do their own assessment.</u><br><br>
The Authority intends to award the Project through an open competitive bidding process set out herein and in compliance with the following:<br>
g) Tamil Nadu Transparency in Tenders Act, 1998;<br>
h) Tamil Nadu Transparency in Tenders Rules 2000;<br>
i) Tamil Nadu Transparency in Tenders (Public Private Partnership Procurement) Rules 2012;<br>
j) Tamil Nadu Infrastructure Development Act, 2012;<br>
k) Tamil Nadu Infrastructure Development Rules, 2012; and<br>
l) Tamil Nadu Infrastructure Development Regulations, 2013</td></tr>
<tr><td>12.</td><td>RFP Volume II, Part I - Addition of new clause under 5.9.5 Comprehensive Assessment (p)</td><td>Article 5.9.5 (p) Comprehensive Assessment<br><br>Page No. 44 of 164</td><td>-</td><td><u>5.9.5 (p) Provision for reduction in number of DMAs, Lane Controllers and increase in length of pipeline to be replaced</u><br><br>
<u>(i) The required number of DMAs and Lane Controllers as per the assessment are as below:</u>
<table>
<tr><td><u>Number of DMAs</u></td><td><u>125</u></td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Sl. No.</th><th>Document Clause / Sub Clause No.</th><th>Clause /Sub Clause (Section and Page No.)</th><th>Original Clause</th><th>As amended</th></tr>
<tr><td></td><td></td><td></td><td></td><td>
<table>
<tr><td><u>Lane level flow measurement controllers</u></td><td><u>750</u></td></tr>
</table>
<br><u>Based on the Comprehensive Assessment made under this Article 5.9.5, the Concessionaire may revisit the proposed number of DMAs and reduce the number of DMAs if necessary. However, the number of DMAs shall not be reduced by more than 20% of the DMAs mentioned above. Similarly, the Concessionaire may revisit the requirement on the number of Lane level flow measurement controllers to ensure real time monitoring of flow and pressure as envisaged in the bid document and reduce the number of Lane level controllers. The number of Lane level controllers shall not be reduced by more than 50% of the numbers provisioned in the DPR.</u><br><br><u>(ii) The details of the Condition Assessment of the existing pipelines are provided in the DPR. The summary of the same is provided below:</u><br><br>
<table>
<tr><td><u>Existing Network</u></td><td><u>296.78 Km</u></td></tr>
<tr><td><u>New pipelines proposed (unserved areas)</u></td><td><u>80.66 Km</u></td></tr>
<tr><td colspan="2"><u>Based on condition assessment</u></td></tr>
<tr><td><u>Pipelines requiring replacement</u></td><td><u>33.04 Km</u></td></tr>
<tr><td><u>Pipelines Requiring flushing</u></td><td><u>11.00 Km</u></td></tr>
<tr><td><u>Medium risk pipes</u></td><td><u>42.14 Km</u></td></tr>
<tr><td><u>Low risk pipes</u></td><td><u>210.60 Km</u></td></tr>
</table>
</td></tr>
</table>

| Sl. No. | Document Clause / Sub Clause No. | Clause /Sub Clause (Section and Page No.) | Original Clause | As amended |
|---|---|---|---|---|
| | | | | **Based on the Comprehensive Assessment carried out under this Article 5.9.5, if the Concessionaire determines that additional pipeline replacement will be required, the same may be carried out from the savings in project cost on account of the reduction in the number of DMAs and Lane level flow measurement controllers provided under Article 5.9.5 (p) (i) above.**<br><br>**It may be noted that the total cost of the project shall not exceed the Bid Project Cost.**<br><br>**The above points shall be considered in tandem with each other to avoid any impact on the Bid Project Cost.**<br><br>**Bidders are advised to refer the DPR for further details on the above and do their own assessment.** |
| 13. | RFP Volume II, Part I, Article 23 – Payment of Bid Project Cost | Article Nos. 23.4 Page 109 and 110 of 164 | For payment during construction period, Article 23.4 provides for the following -<br>'Upon receiving a report from the Independent Engineer certifying the achievement of the below mentioned Payment Milestones, the Authority shall issue a payment advice to the Escrow Bank, within 15 (fifteen) days of receipt of each such report, for release of an instalment'. | Payment During Construction Period, Article 23.4, provides for the following.<br><br>**The Independent Engineer shall review and submit its recommendations to Authority within 21 days of receipt of the Invoice from the Concessionaire through Authority.**<br><br>Upon receiving a report from the Independent Engineer certifying the achievement of the below mentioned Payment Milestones, the Authority shall issue a payment advice to the Escrow Bank, within |

| Sl. No. | Document Clause / Sub Clause No. | Clause /Sub Clause (Section and Page No.) | Original Clause | As amended |
|---|---|---|---|---|
| | | | | 15 (fifteen) days of receipt of each such report, for release of an instalment **equal to 6% (six per cent) of the Bid Project Cost, adjusted for the Price Index Multiple as applicable on the Reference Index Date preceding the date of that report.** |
| 14. | RFP Volume II<br>Part II Schedules | SCHEDULE R: Independent Engineer<br>1. Selection of Independent Engineer<br>2. Terms of Reference<br>3. Selection every 3 Years<br>Page No. 224 of 262 | **1. Selection of Independent Engineer**<br>**1.1.** The Authority shall appoint a consulting engineering firm substantially in accordance with the selection criteria set forth in the Tamil Nadu Transparency in Tenders Act, 1998 and read with the Tamil Nadu Transparency in Tenders (Public Private Partnership Procurement) Rules, 2012 and any amendments thereof to be the independent consultant under this Agreement (the ―Independent Engineer‖). The appointment shall be made no later than 60 (sixty) days from the Effective Date and shall initially be for a period of 5 (five) years which may be extended for a further term of 5 (five) years. On expiry of the aforesaid appointment, the Authority shall appoint an Independent Engineer for a further terms in accordance with the provisions of the above stated legislations and such procedure shall be repeated after expiry of each appointment.<br><br>**1.2.** In the event of termination of an Independent Engineer appointed in accordance with the provisions of Paragraph 1.1, the Authority shall appoint another firm of Technical Consultants forthwith or may engage a | **1. Selection of Independent Engineer**<br>**1.1.** The Authority shall appoint a consulting engineering firm substantially in accordance with the selection criteria set forth in the Tamil Nadu Transparency in Tenders Act, 1998 and read with the Tamil Nadu Transparency in Tenders (Public Private Partnership Procurement) Rules, 2012 and any amendments thereof to be the independent consultant under this Agreement (the "Independent Engineer"). The appointment shall be made no later than 60 (sixty) days from the Effective Date and **shall initially be for a period of Construction Period plus 6 (six) months.** On expiry of the aforesaid appointment, **the Authority shall appoint an Independent Engineer for a further term of 3 (three) years** in accordance with the provisions of the above stated legislations and such procedure shall be repeated after expiry of each appointment. |

| Sl. No. | Document Clause / Sub Clause No. | Clause /Sub Clause (Section and Page No.) | Original Clause | As amended |
|---|---|---|---|---|
| | | | government-owned entity in accordance with the provisions of Paragraph 5 of this Schedule-M.<br>**1.3.** The Concessionaire may, in its discretion, nominate a representative to participate in the process of selection to be undertaken by the Authority under this Schedule-M.<br>**2. Terms of Reference**<br>The Terms of Reference for the Independent Engineer shall substantially conform to Schedule-N.<br>**3. Selection every three years**<br>No later than 3 (three) years from the date of appointment of Independent Engineer pursuant to the provisions of Paragraph 1 of this Schedule-M, and every 3 (three) years thereafter, the Authority shall engage another firm in accordance with the criteria set forth in this Schedule-M. | **1.2.** In the event of termination of an Independent Engineer appointed in accordance with the provisions of Paragraph 1.1, the Authority shall appoint another firm of Technical Consultants forthwith or may engage a government-owned entity in accordance with the provisions of Paragraph 5 of this **Schedule-R**.<br>**1.3.** The Concessionaire may, in its discretion, nominate a representative to participate in the process of selection to be undertaken by the Authority under this **Schedule-R**.<br>**2. Terms of Reference**<br>The Terms of Reference for the Independent Engineer shall substantially conform to **Schedule-S**.<br>**3. Selection every three years**<br>No later than 3 (three) years from the date of appointment of Independent Engineer pursuant to the provisions of Paragraph 1 of this **Schedule-R**, and every 3 (three) years thereafter, the Authority shall engage another firm in accordance with the criteria set forth in this **Schedule-R**. |
| 15. | RFP Volume II – Part II Schedule C – KEY PERFORMANCE INDICATORS (KPIs) | Revised Schedule C | Schedule C | Please Refer **Annexure I to Addendum II for the revised Schedule C – Key Performance Indicators (KPIs)** |
| 16. | RFP Volume I B – | Format for Itemized | - | **Format for Itemized rates to be submitted (in** |

| Sl. No. | Document Clause / Sub Clause No. | Clause /Sub Clause (Section and Page No.) | Original Clause | As amended |
|---|---|---|---|---|
| | Appendix Annex 1 | Rates – New Form | | **.pdf) online along with the Financial Bid. Refer Annexure II to Addendum II.** |

Sd/- 30.06.2025
Engineering Director.i/c

## ANNEXURE I - ADDENDUM II – (REVISED)

## SCHEDULE C: KEY PERFORMANCE INDICATORS (KPI)

The Concessionaire shall ensure and procure compliance of the below Key Performance Indicators (KPIs) in a diligent manner:

**1. Construction Period:**

During the construction period the Concessionaire shall have the obligation to achieve the following construction targets:

(a) A minimum of 40% of connections identified in the CIP or 18,000 connections whichever is lower, by the end of one year from the Appointed Date

(b) A minimum of 100% of connections identified in the CIP or 38,000 connections whichever is lower, by the end of two years from the Appointed Date

Each connection shall be considered completed upon:

(i) Installation of User Meter

(ii) Inclusion of customer in the GIS based customer database

Provided however, if the Concessionaire has failed to achieve any or all of the mile-stones as mentioned in (a) and (b) above, the Liquidated Damages will be computed as provided below:

| Sl. No. | Time Period from date of scheduled completion | Liquidated Damaged INR/Day |
|---|---|---|
| 1. | Up to 60 (sixty) days | Rs. 1,00,000 |
| 2. | Beyond 60 (sixty) days upto 120 (one hundred and twenty) days | Rs. 2,00,000 |
| 3. | Beyond 120 (one hundred and twenty) days up to 270 (two hundred and seventy) days | Rs. 5,00,000 |
| 4. | Beyond 270 (two hundred and seventy) days | Termination under Article 31 |

However, it is expressly clarified that this Liquidated Damage shall not be payable if the delay is due to any reason not attributable to the Concessionaire's fault, and for which the Authority has provided Extension of time to complete the obligations.

It is further clarified that in the event of levy of any Liquidated Damages on account of non performance of 1(a) above, the same shall be adjusted against the computation of Liquidated Damages at the time of CoD. To illustrate, if the milestone mentioned in 1(a) is delayed by 10 days and the Concessionaire is levied a penalty of Rs. 10,00,000, and the overall project is completed in 10 days from the Scheduled CoD, no further penalty shall be levied at the time of CoD. In the above illustration, if the overall project is completed on the scheduled completion date, the Liquidated damaged levied on the Concessionaire shall be reimbursed.

**2. Initial Operation Period**

The Concessionaire has to achieve the following minimum performance standards as detailed here in below during the Initial operation Period.

(1) **Per Capita Supply of Water:**

1

| | |
|---|---|
| Rationale | Adequacy of Water supply |
| Frequency | Monthly |
| Required Service Level | Quantity of water pumped into the system out of the total quantity received from CMWSSB at the storage reservoirs |
| Measured by | Quantity of water pumped through the WDS |
| Data Requirements | Amount of water pumped through the WDS at the pumping stations as recorded by the flow meters |
| Calculation | $\frac{\text{Water pumped through the WDS}}{\text{Water received from CMWSSB}}$ |
| Monitored by | A register maintained by the Concessionaire; the register shall include details of water supplied through the WDS and the population of the areas served. The register shall have the following details:<br>• Time and Date<br>• Quantity of water Supplied<br>• Population of the served area |
| Allowable Exclusions | Water Shortage Period |
| Penalty/damages | Rs. 25,000 per day for every 1% reduction in supply |
| Incentives | No incentive |

(2) **Quality of Water Supplied**

| | |
|---|---|
| Rationale | Poor quality of water can pose serious health hazard |
| Frequency | Monthly |
| Required Service Level | At User Tap: 90% samples conforming to the permissible level of residual chlorine to be maintained, other than where the Emergency Response Plan is triggered. (upto COD) |
| Measured by | Number of samples from User taps tested and not conforming to residual chlorine levels based on a minimum of 10 samples for every 1,500 connections on a quarterly basis. |
| Data Requirements | Analysis sample of various points within distribution system. |
| Calculation | $\frac{\text{Total numbers of samples that meet the specified standards}}{\text{Total number of samples tested}}$ |
| Monitored by | An electronic registry maintained by the Concessionaire; the registry shall include detailed database and summary tables for both routine water quality tests and tests necessitated due to Complaints from Customer on poor quality of water. At least 30% of samples as prescribed by CPHEEO manual shall be collected and tested by third party approved lab or CMWSSB lab.<br>• The water quality testing database shall include:<br>• Time and Date<br>• Sample Location<br>• Sample Number<br>• Details of water quality tests conducted |

| | |
|---|---|
| | • Details of Remedial Actions taken in case of water quality problem<br>• The customer complaints database shall include:<br>• Time and Date<br>• Complaint Identification Number<br>• Customer Identification Cod<br>• Nature of Complaint on water quality<br>• Action Taken Report<br>• Time and Date of Resumption of Service Level |
| Allowable Exclusions | Pollution event covered by Emergency procedures |
| Penalty/damages | For each sample at consumer tap not confirming to residual chlorine standards, Rs. 1,000, escalated at the rate of 5% per annum from the Appointed Date. |
| Incentives | No incentive |

**3.Operation Period**

The Concessionaire has to achieve minimum performance standards as detailed here in below:

In the event the Concessionaire achieves exceptional service levels, a mechanism has been provided to remunerate these exceptional services. Similarly for poor performances below the minimum performance standards will attract penalties.

Minimum performance standards to be maintained during the Agreement Period:

| Sr. No. | Service Level Benchmark | Target | Targeted performance |
|---|---|---|---|
| 1 | Coverage of Water Supply | **99%** | Two years from Appointed date |
| 2 | Continuity of Supply | 24 hrs | Two years from Appointed date |
| 3 | Functioning of Meters | **98%** | Two years from Appointed date |
| 4 | Extent of Non-revenue water | **15%** | **25% at the end of Construction Period; 1% reduction each year to reach 20% in 5 years from COD; Further reduction of 1.5% in years 6 and 7 and 2% in year 8 to reach 15% by the end of 8 years from COD** |
| 5 | Efficiency in Redressal of Complaints | 90% | 90% of complaints to be redressed within the stipulated time from COD |
| 6 | Quality of Water | Permissible level of residual chlorine at User tap level | Two years from Appointed date |
| 7 | Efficiency in collection of water related charges | 95% | Three years from CoD |



General

**Calculation methods**:
Above Service level benchmark shall be calculated using following formula and the Performance Parameters, Penalties and the Measurement framework shall be as detailed below:

(1) **Coverage of Water Supply:**

| | |
|---|---|
| Rationale | Basic mandate of CMWSSB to provide direct metered connection |
| Frequency | Quarterly |
| Required Service Level | 99% of households within the Service Area |
| Measured by | Total number of properties with metered direct water supply connections as percentage of total number of Properties in the service area. |
| Data Requirements | Total Number of households from satellite image & consumer survey.<br>Total number of consumers (Registered/Unregistered) connected with pipe network or alternatively % of area covered under piped network. |
| Calculation | Number of metered connections to consumer X 100<br>Total number of Properties |
| Monitored by | • As built map of network after construction period with respect to location of registered and unregistered consumer.<br>• GIS map<br>• House to house survey data<br>• CMWSSB network should enable to connect 95% of the consumers with maximum 40 mtr of connecting pipe. In exceptional cases consumer connection is allowed up to 100 mtr of connecting pipe (not more than 1%).<br>• Distance excludes the pipe length with in the premises of consumer.<br>• Connecting pipe Length shall be measured from ferrule point to consumer boundary. |
| Allowable Exclusions | 1. Unauthorized colony where CMWSSB is not allowed to supply water<br>2. Area outside CMWSSB jurisdiction (with in the service area)<br>3. Consumers who have not applied for a connection<br>4. Area excluded as instructed by CMWSSB.<br>5. Legal dispute on ROW for laying the pipe line and not resolved by authorities. |



General

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|---|---|
| Penalty/Damages | Quarterly O & M Fee x 20% x % of consumer not covered in service area.<br><br>Where % of consumer not covered = 99% ***less*** (% of consumer of service area within 40 mtr of CMWSSB network + number of consumers in Areas as per allowed exclusion + number of consumer allowed by CMWSSB exceeding 40 mtr of connecting length (maximum 1%) ***divided by***<br>Total properties within Service area as per house-to - house service connection and GIS map |
| Incentive | No incentive |

(2) **Continuity of Supply:**

| | |
|---|---|
| Rationale | Continuity & reliability of supply. |
| Frequency | Monthly |
| Required Service Level | *Continuity of supply:*<br>*1.* 24X7 water supply with 17 m residual pressure at Critical Measurement Points with a compliance level of 99% to be achieved at the end of CONSTRUCTION PERIOD (COD) and maintained throughout the Contract Term.<br>***Pressure at Connection:*** 17 m residual pressure at Critical Measurement Points with a compliance level of 98% to be achieved at the end of CONSTRUCTION PERIOD (COD) and maintained throughout the Contract Term. |
| Measured by | ***Continuity of Supply:*** Percentage of readings measuring to more than or equal to 17m pressure as the case may be in each DMA, at the Critical Measurement Points (CMPs) plus the total number customer complaints on 'no water' resolved in 24 hours over the total number readings based on a continuous pressure logged at all CMP plus the total number of customer complaints on 'no water' during the period under review.<br>***Pressure at Connection:*** Percentage of readings measuring to more than or equal to 17m pressure at the Critical Measurement Points (CMPs) plus the total number of customer complaints on low pressure resolved in 120 hours over the total number of readings based on a continuous pressure logged at all CMP plus the total number of customer complaints on low pressure during the Six months under review |
| Data Requirements | Number of hours of supply in each of the operational zones base and Pressure readings |



General

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|---|---|
| Calculation | ***Continuity of Supply:*** 100* (Total Number of Readings of pressure equal to or more than 17m +Total number of Customer Complaints on 'no water' resolved in 24 hours)/ (Total number of readings of pressure + Total number of customer complaints on 'no water')<br>***Pressure at Connection:*** Pressure Compliance = 100* (Total Number of Readings of pressure equal to or more than 17m +Total number of Customer Complaints on low pressure resolved in 72 hours)/ (Total number of readings of pressure + Total number of customers. |
| Monitored by | An electronic registry maintained by the Concessionaire; the registry shall include detailed database and summary tables for both pressure logs and record of customer complaints.<br><br>The pressure log database shall include:<br>• Time and Date<br>• CMP Identification Number<br>• Pressure in Meters<br>The customer complaints database shall include:<br>• Time and Date<br>• Complaint Identification Number<br>• Customer Identification Code<br>• Nature of Complaint on Low Pressure<br>• Action Taken Report<br>• Time and Date of Resumption of Service Level |
| Allowable Exclusions | I. Planned Maintenance Periods<br>II. Low pressure at the Command Reservoir<br>III. Mains Bursts in networks operated by the Authority<br>IV. Shortage of bulk water supplied by CMWSSB (Supply below 5% than Average normal Supply)<br>V. Abnormal Demand; this shall not include daily peaks and weekly peaks but includes annual peaks like major festivals and shall not be more than 5 incidents in a year<br>VI. Third Party Causes like power failure and Fire Fighting |
| Penalty/Damages | 1% of the Monthly O&M fee per day of failure to supply water (continuous /scheduled) at desired pressure.<br>Penalty applicable if no. of affected consumers exceeds 5% of total registered consumers, DMA wise.<br>To illustrate, if the supply is continuous but the pressure is less than 17m, the penalty shall apply. Similarly, if the pressure is at 17m, but the supply is not continuous (intermittent supply at 17m pressure), the penalty shall apply. |
| Incentive | No incentive |



General

(3) **Functioning of Meters:**

| | |
|---|---|
| Rationale | Adequacy to meet city needs for treated water supply |
| Frequency | Monthly |
| Required Service Level | 98% of total consumer meter should be functional and bills shall be issued as per actual meter reading for each billing cycle. |
| Measured by | Total number of functional metered connection as a percentage of total number of metered connections |
| Data Requirements | Total number of connection & number of registered metered connection. |
| Calculation | $\frac{\text{Total number of functional metered connection.}}{\text{Total number of metered connections}}$ |
| Monitored by | • Electronic consumer data base with initial meter reading and final reading for each billing cycle<br>• Consumer numbers in database<br>• Photo of each reading with date and meter number, consumer number<br>• Meter reading statement with linked photograph<br>• 1% random check by independent engineer for each billing cycle |
| Allowable Exclusions | Maximum up to 5% is allowed to be issued bills with average consumption and or non-issue of bills<br>1. Meter damaged/stolen and reported by Consumer<br>2. Access to meter is blocked temporarily<br>3. Meter non functional<br>4. Refusal by consumer and reported to CMWSSB<br>5. Disco nnected by CMWSSB (will be deducted while calculating % from total consumers) |
| Penalty/Damages | Penalty (Meters) = {Total of non-functional meter and or bills issued on average basis beyond 5% x Monthly O&M fees X 20%}<br>The computation will be done on a monthly basis and the penalty will be levied quarterly |
| Incentive | No incentive |

(4) **Extent of Non-revenue water:**

| | |
|---|---|
| Rationale | Financial and Environment sustainability |
| Frequency | Monthly |



General

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|---|---|
| Required Service Level | 25% at the end of Construction Period; 1% reduction each year to reach 20% in 5 years from COD; Further reduction of 1.5% in years 6 and 7 and 2% in year 8 to reach 15% by the end of 8 years from COD |
| Measured by | Percentage of total billed volume of water including the volume of measured free water supplies authorized by CMWSSB measured in Kilo Liters during the month under review over the total Supply Input Volume in Kilo Liters continuously measured at the bulk water supply points fixed on the transmission mains originating from pumping station or any other source. |
| Data Requirements | Total water input & total billed volume |
| Calculation | Revenue Water% = 100* (Total Billed Volume in Kilo Liters +Total volume of measured Free Supplies authorized by CMWSSB) / (Total Supply Input Volume in Kilo Liters)<br><br>NRW %= 100- Revenue water% |
| Monitored by | An electronic registry maintained by the Concessionaire; the registry shall include detailed database and summary tables for Supply Input Volume, Billed Volume and Authorized Free Supplies Volume<br><br>The database shall include:<br>• Month<br>• Cumulative Supply Input Volume<br>• Cumulative DMA wise Distribution Input Volume<br>• Total Billed Volume during the month<br>• Total Measured Volume of Authorized Free Supplies |
| Penalty/Damages | X being the Annual NRW (in %) achieved during the period under review, the applicable damages will be:<br><br>Year 1 after COD: (X-24%) of applicable Monthly O&M Fee<br>Year 2 after COD: (X-23%) of applicable Monthly O&M Fee<br>Year 3 after COD: (X-22%) of applicable Monthly O&M Fee<br>Year 4 after COD: (X-21%) of applicable Monthly O&M Fee<br>Year 5 after COD: (X-20%) of applicable Monthly O&M Fee<br>Year 6 after COD: (X-18.5%) of applicable Monthly O&M Fee<br>Year 7 after COD: (X-17%) of applicable Monthly O&M Fee<br>Year 8 onwards after COD: (X-15%) of applicable Monthly O&M Fee<br><br>The computation will be done on a monthly basis and the penalty will be levied quarterly |



General

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| Incentive | X being the Annual NRW (in %) achieved during the period under review, the applicable incentive will be:<br>Year 1 after COD: (24%-X) of applicable Monthly O&M Fee Divided by 3<br>Year 2 after COD: (23%-X) of applicable Monthly O&M Fee Divided by 3<br>Year 3 after COD: (22%-X) of applicable Monthly O&M Fee Divided by 3<br>Year 4 after COD: (21%-X) of applicable Monthly O&M Fee Divided by 3<br>Year 5 after COD: (20%-X) of applicable Monthly O&M Fee Divided by 3<br>Year 6 after COD: (18.5%-X) of applicable Monthly O&M Fee Divided by 3<br>Year 7 after COD: (17%-X) of applicable Monthly O&M Fee Divided by 3<br>Year 8 onwards after COD: (15%-X) of applicable Monthly O&M Fee Divided by 3<br><br>The computation will be done on a monthly basis and the incentive will be provided quarterly |

(5) **Efficiency in Redressal of Complaints**

| | |
|---|---|
| Rationale | Responsive to consumer needs |
| Frequency | Monthly |
| Required Service Level | 90% of complaints should be resolved within the time period provided for respective category of complaint.<br>***Complaints to be resolved within 24 hours***: Complaints related to water quality ***Complaints to be resolved within 48 hours***: leakages in HSCs, No Water<br>***Complaints to be resolved within 7 days***: Complaints related to delay in providing connection, meter not working properly, delay/errors/problems in billing and collection, change in customer database, reconnection, temporary disconnection, arrears and other complaints connected to customer database, billing or collection.<br>Complaints for which Redressal beyond the control of the ***Concessionaire to be listed separately and to be certified by the Independent Engineer***.<br>In the event a complaint is not redressed within twice the time period provided for such redressal period, the same shall be considered as an additional complaint by the same Complainant. The accumulation of complaints shall continue till it has been resolved.<br>It is hereby clarified that the complaint resolution targets of the Concessionaire shall not include complaints pertaining to water shortage and/or resultant low pressure during the period of inadequate water supply by CMWSSB. Supply shortage is defined as any deficit in the daily volume supplied at outlet of WDS against the measured daily demand and the approved NRW losses for the given Concession Year |



General

| | |
|---|---|
| Measured by | Percentage of total number of customer requests resolved during the month under review, including those resolved until the 7th of the succeeding month (where the time period allowed in 7 days) over the total number of customer requests received and recorded during that month under review |
| Data Requirements | Total number of water supply complaints received per month and total number of complaints redressed within 24 hrs, 7 days, 15 days and beyond 15 days. |
| Calculation | Total number of complaints redressed within the stipulated time for the respective category /Total number of complaints received in a month in the respective Categories |
| Monitored by | An electronic registry maintained by the Concessionaire, the registry shall include detailed database and summary tables including:<br>• Time and Date<br>• Complaint Number<br>• Consumer Name<br>• Consumer Identification Number<br>• DMA Number<br>• Nature of Complaint<br>• Time and Date at which Consumer is provided with response<br>• Action Taken Report<br>• Time and Date of resolution of Complaint |
| Allowable Exclusions | Complaints relating to<br>• No Water<br>• Poor quality of water other than residual chlorine<br><br>However, the above will be excluded only if the reason for 'No water' is on account of CMWSSB not supplying the required quantity at the WDS or supplying poor quality water. |
| Penalty/Damage s | (90% - % of Total customer complaints redressed within the stipulated timelines during the quarter) x 50% of the Monthly O&M Fee |
| Incentive | No incentive |

(6) **Quality of Water Supplied**

| | |
|---|---|
| Rationale | Poor quality of water can pose serious health hazard |
| Frequency | Monthly |
| Required Service Level | At User Tap: 100% samples conforming to the permissible level of residual chlorine to be maintained, other than where the Emergency Response Plan is triggered. |

| | |
|---|---|
| Measured by | Number of samples from User taps tested and not conforming to residual chlorine levels based on a minimum of 10 samples per DMA on a quarterly basis. |
| Data Requirements | Analysis sample of various points within distribution system. |
| Calculation | $\frac{\text{Total numbers of samples that meet the specified standards}}{\text{Total number of samples tested}}$ |
| Monitored by | An electronic registry maintained by the Concessionaire the registry shall include detailed database and summary tables for both routine water quality tests and tests necessitated due to Complaints from Customer on poor quality of water. At least 30% of samples as prescribed by CPHEEO manual shall be collected and tested by third party approved lab or CMWSSB lab. |
| | The water quality testing database shall include:<br>• Time and Date<br>• Sample Location<br>• Sample Number<br>• Details of water quality tests conducted<br>• Details of Remedial Actions taken in case of water quality problem<br>The consumer complaints database shall include:<br>• Time and Date<br>• Complaint Identification Number<br>• Customer Identification Cod<br>• Nature of Complaint on water quality<br>• Action Taken Report<br>• Time and Date of Resumption of Service Level |
| Allowable Exclusions | Pollution event covered by Emergency procedures |
| Penalty/damages | For each sample at consumer tap not confirming to residual chlorine standards, Rs. 10,000, escalated at the rate of 5% per annum from the Appointed Date. |
| Incentives | No incentive |

(7) **Efficiency in collection of water related charges**

| | |
|---|---|
| Rationale | Financial sustainability |
| Frequency | Quarterly |
| Required Service Level | 85% at the end of construction period and 95% from the completion of 3 years from CoD |

| | |
|---|---|
| Measured by | Percentage of total revenue collected against volume billed during the period under review over the total volume billed during period under review.<br>For the purpose of computing incentive for arrear collection, arrears shall mean amount billed but not collected within 30 days from the end of the quarter in which the bill is raised. |
| Data Requirements | Data from budget for current revenue collected and current revenue billed. (excluding arrears). |
| Calculation | **Current Collection:**<br>Total amount collected during the given quarter Total amount billed during the given quarter<br><br>The Collection efficiency shall be finalised based on collections which were billed during the relevant quarter and collected within 30 days after the end of the quarter.<br><br>**Arrear Collection:**<br>For the purpose of the computing incentive for arrear collection, the collection of arrears that are due for a period of less than 9 months from the end of the relevant quarter shall only be reckoned. |
| Monitored by | • An electronic registry maintained by the Concessionaire; the registry shall include detailed database and summary tables for total revenue billed, arrears, amounts collected during the period under review. The database shall include:<br>• Month<br>• DMA Number<br>• Total Amount and volume Billed – Arrears and Current Revenue Demand against volume in kilo liters<br>• Total Revenue Collected – as against Arrears and as against Current Demand against volume in kilo liters<br>• Total arrears with volume in kilo liters<br>• Total disputed cases<br>• Other Income collected as against Connection Charges and Deposits received from Customers |
| Allowable Exclusions | • Amounts written off of or exceptionally permitted by CMWSSB to be excluded<br>• Defaulter customers identified by Concessionaire, informed to CMWSSB. No action taken by CMWSSB for recovery as per applicable rule within the given time.<br>• Any free connection permitted by CMWSSB |
| Penalty/Damages | X being the Quarterly Collection Efficiency (in %) achieved during any year, the applicable damages will be<br>From year immediately after COD to 3rd year from COD: (85% - X) of Applicable quarterly O&M Fee<br>From 4th year onwards: (95% - X) of Applicable Quarterly O&M Fee |



General

| | |
|---|---|
| Incentive | **For Current Collection**<br>X being the Collection Efficiency (in %) achieved during any Quarter, the applicable incentive will be:<br>From year immediately after COD to 3rd year from COD: (X - 85%) of Applicable Quarterly O&M Fee, **Divided** by 3<br>From 4th year onwards: (X - 95%) of Applicable Quarterly O&M Fee **Divided** by 2<br><br>**For Arrear Collection**<br>For collection of arrears against the billing up to the required level of service, 50% of the Penalty Charged for such shortfall in collection shall be given as incentive<br>For collection of arrears against billing over and above the applicable target collection (85% for the first three years after COD and 95% thereafter), 50% of the Incentive which would have been otherwise due and payable for such amount, had it been collected in the relevant quarter. |



General

**ANNEXURE II of ADDENDUM II**

**BILL OF QUANTITY FORM - for Reference**
**(To be uploaded only on to the Portal (Financial Bid) as a .pdf file & Not to be submitted in the Technical Bid)**

**Implementation of continuous Water Supply of Pallipattu WDS & Thiruvanmiyur WDS under Area XIII of Chennai city under Hybrid Annuity Model (HAM)**

| Sl No | DESCRIPTIONS | Quantity | UNIT | Rate per (In INR) |
|---|---|---|---|---|
| | **CIVIL WORKS** | | | |
| **A** | **Providing Distribution System and allied works** | | | |
| 1 | **Laying D.I. pipes** including earthwork excavation for trenches in hard stiff clay, black cotton, hard red earth, shales, murams, gravel, stoney earth and earth mixed with small size boulders and hard gravelly soil depositing the earth on banks with initial lead of 10 m and initial lift of 2m carting the pipes from any of the Board's Stores to the site of work lowering into the trenches, aligning, refilling the trenches with excavated soil, watering and rating to consolidation, etc., complete for the pipes of following diameters. | | | |
| i | 100 mm | | m | |
| ii | 150 mm | | m | |
| iii | 200 mm | | m | |
| iv | 250 mm | | m | |
| v | 300 mm | | m | |
| vi | 350 mm | | m | |
| vii | 400 mm | | m | |
| viii | 450 mm | | m | |
| 2 | **Laying of D.I.pipes** of diameter for 500 dia and above up to 1200 dia from the site of stacking to the site of construction including open cut earthwork excavation in hard stiff clay, stiff black cotton, hard red earth and earth mixed with small size boulders and hard gravelly soil depositing the earth on banks with initial lead of 10 metres and initial lift of 2.00 metres, pumping out sub soil water, lowering the pipes into the trenches, aligning and refilling the trenches with excavated earth, watering, raing to consolidation and disposing the surplus earth, etc., complete, for 1.00metre. | | | |
| i | 500 mm | | m | |
| ii | 600 mm | | m | |
| 3 | Supply of following diameter DUCTILE IRON SOCKET/SPIGOT PIPES AS PER IS 8329/2000-class-K7 Rates are inclusive of transportation charges and cost of Rubber gasket | | | |
| i | 100 mm | | m | |
| ii | 150 mm | | m | |
| iii | 200 mm | | m | |
| iv | 250 mm | | m | |
| v | 300 mm | | m | |
| vi | 350 mm | | m | |
| vii | 400 mm | | m | |
| viii | 450 mm | | m | |
| ix | 500 mm | | m | |
| x | 600 mm | | m | |
| 4 | Making Rubber joints for D.I pipes – Labour only, Including T&P | | | |
| i | 100 mm | | nos | |
| ii | 150 mm | | nos | |
| iii | 200 mm | | nos | |
| iv | 250 mm | | nos | |
| v | 300 mm | | nos | |
| vi | 350 mm | | nos | |
| vii | 400 mm | | nos | |
| viii | 450 mm | | nos | |
| ix | 500 mm | | nos | |
| x | 600 mm | | nos | |
| 5 | Supply of following diameter DUCTILE IRON SPECIALS AS PER IS 9523/2000 | | | |
| i | 100 - 200 dia | | kg | |
| ii | 250 - 300 dia | | kg | |
| iii | 350 - 450 dia | | kg | |
| iv | 500 - 600 dia | | kg | |
| 6 | Supplying all labour and T&P for providing and laying MS pipe and specials confirming to IS 3589/99 of quality grade FE 410/ GI Pipe (Medium) confirming to specification of following nominal dia and including transportation of pipes and fitting to site etc all complete as per the direction of E.I.C. | | | |
| **a** | **For Distribution Network** | | | |
| i | 100mm dia MS Pipe 4.5 mm thick | | m | |
| | 100mm dia M.S. Flange.(20mm thick) | | nos | |
| | 100mm dia plain Bend-45' | | nos | |
| ii | 150mm dia M.S.Pipe (6.30mm thick) | | m | |

| | | | | |
|---|---|---|---|---|
| | 150mm dia M.S. Flange.(20mm thick) | | nos | |
| | 150mm dia Plain Bend-45' | | nos | |
| iii | 200mm dia M.S.Pipe (6.30mm thick) | | m | |
| | 200mm dia M.S. Flange.(25mm thick) | | nos | |
| | 200mm dia Plain Bend-45' | | nos | |
| iv | 250mm dia M.S.Pipe (6.30mm thick) | | m | |
| | 250mm dia M.S. Flange.(25mm thick) | | nos | |
| | 250mm dia x Plain Bend-45' | | nos | |
| v | 323.9mm dia M.S.Pipe (7.1 mm thick) | | m | |
| | 300mm dia M.S. Flange.(25mm thick) | | nos | |
| | 300mm dia Plain Bend-45' | | nos | |
| vi | 350mm dia M.S.Pipe (8 mm thick) | | m | |
| | 350mm dia M.S. Flange.(30mm thick) | | nos | |
| | 350mm dia Plain Bend-45' | | nos | |
| vii | 400mm dia M.S.Pipe (8.8 mm thick) | | m | |
| | 400mm dia M.S. Flange.(30mm thick) | | nos | |
| | 400mm dia plain bend-90' | | nos | |
| viii | 450mm dia M.S.Pipe (10 mm thick) | | m | |
| | 450mm dia M.S. Flange.(30mm thick) | | nos | |
| | 450mm dia plain bend-90' | | nos | |
| ix | 500mm dia M.S.Pipe (11 mm thick) | | m | |
| | 500mm dia M.S. Flange.(40mm thick) | | nos | |
| | 500mm dia plain bend-90' | | nos | |
| x | 600mm dia M.S.Pipe (12.5 mm thick) | | m | |
| | 600mm dia M.S. Flange.(55mm thick) | | nos | |
| | 600mm dia plain bend-90' | | nos | |
| b | **At WDS** | | | |
| a | 1000 mm dia(manifold) | | m | |
| 7 | Supply and delivery of DI D/F Gate (sluice) valves (soft seated) resilient seated soft sealing Gate Valves (Sluice Valves) with body Bonnet of Ductile cast iron of Grade GGG 40 or GGG 50, Wedge fully rubber lined with EPDM replaceable spindle nut without gland packing and with 3 O- Ring protection on the shaft and seals of NBR and the valves should be of Vacuum tight and 100% leak proof with face to face dimensions as per BS 5163-89/ISI 14846-2000/DIN 3202 F4. All the valves should be with electrostatic powder coating both inside and outside with pocket less straight through body passage. All the valves are to be compatible for buried application with pressure rating PN 10/16 and with 5 years warranty | | | |
| **a** | **Isolation valves** | | | |
| i | 100 mm | | nos | |
| ii | 150 mm | | nos | |
| iii | 200 mm | | nos | |
| iv | 250 mm | | nos | |
| v | 300 mm | | nos | |
| vi | 350 mm | | nos | |
| vii | 400 mm | | nos | |
| **b** | **Scouring valves** | | | |
| i | 100 mm | | nos | |
| 8 | Provision of CI tamper proof SINGLE AIR VALVE AS PER ISI 14845/2000 | | | |
| i | 25 mm | | nos | |
| ii | 40 mm | | nos | |
| 9 | Supplying, laying, fitting, & fixing of DI tamper proof Double AIR VALVE AS PER ISI 14845/2000 | | | |
| i | 50 mm | | nos | |
| ii | 80 mm | | nos | |
| iii | 100 mm | | nos | |
| iv | 150 mm | | nos | |
| 10 | Fitting and fixing of sluice valves with tail pieces, necessary rubber packing, SS 204 nut bolt including labour, T&P, transportation to site from store and fixing the surface boxes. | | | |
| **a** | **Isolation valves** | | | |
| i | 100 mm | | nos | |
| ii | 150 mm | | nos | |
| iii | 200 mm | | nos | |
| iv | 250 mm | | nos | |
| v | 300 mm | | nos | |
| vi | 350 mm | | nos | |
| vii | 400 mm | | nos | |
| **b** | **Scouring valves** | | | |
| i | 100 mm | | nos | |
| 11 | Connection From old Line to New W/S line Including of Isolation of Loop line with end cap | | m | |
| 12 | Provision for Cleaning & Flushing of existing pipes @ m | | m | |

| | | | | |
|---|---|---|---|---|
| 13 | Labour for cutting open road for laying water mains, including T&P - **Concrete Roads** | | | |
| i | 100 mm | | Cum | |
| ii | 150 mm | | Cum | |
| iii | 200 mm | | Cum | |
| iv | 250 mm | | Cum | |
| v | 300 mm | | Cum | |
| vi | 350 mm | | Cum | |
| vii | 400 mm | | Cum | |
| viii | 450 mm | | Cum | |
| ix | 500 mm | | Cum | |
| x | 600 mm | | Cum | |
| xii | 700 mm | | Cum | |
| 14 | Labour for cutting open road for laying water mains, including T&P - **Bituminous Roads** | | | |
| **a** | **Non-Bus Route** | | | |
| i | 100 mm | | Cum | |
| ii | 150 mm | | Cum | |
| ii | 200 mm | | Cum | |
| iii | 250 mm | | Cum | |
| iv | 300 mm | | Cum | |
| v | 350 mm | | Cum | |
| vi | 400 mm | | Cum | |
| vii | 450 mm | | Cum | |
| viii | 500 mm | | Cum | |
| x | 600 mm | | Cum | |
| xi | 700 mm | | Cum | |
| **b** | **Bus Route** | | | |
| i | 100 mm | | Cum | |
| ii | 150 mm | | Cum | |
| iii | 200 mm | | Cum | |
| iv | 250 mm | | Cum | |
| v | 300 mm | | Cum | |
| viii | 450 mm | | Cum | |
| ix | 500 mm | | Cum | |
| x | 600 mm | | Cum | |
| 15 | Supplying and laying of MDPE (PE80) Blue pipe (IS:4427) with necessary specials including earth work excavation laying jointing testing, refilling the trenches and disposal of surplus earth etc. Complete | | | |
| i | 20 O.D | | m | |
| ii | 25 O.D | | m | |
| iii | 32 O.D | | m | |
| 16 | Pushing of M.S. pipes of following dia for road crossing and railway crossing by push through method in all types of strata by using hydraulic jack and drilling machine of required diameter of below M.S. casing pipes, lowering, laying , jointing of material, required welding machinery, tripod, sahin-pulley block crain, blower, compressor, loading and unloading of machinery into the trench, etc; transportation and dewatering etc complete as directed by engineer-in-charge but Including the cost of pipe | | | |
| i | 250mm dia M.S.Pipe (6.30mm thick) | | m | |
| ii | 323.9mm dia M.S.Pipe (7.1 mm thick) | | m | |
| iii | 400mm dia M.S.Pipe (8.8 mm thick) | | m | |
| iv | 500mm dia M.S.Pipe (11 mm thick) | | m | |
| v | 600mm dia M.S.Pipe (12.5 mm thick) | | m | |
| **B** | **Civil Works** | | | |
| 17 | Construction of chamber for 100 to 250 dia. sluice valve including providing and fixing FRC cover and frame of size 60x60cm for size 1.35x1.2 x 1.55 m, Including cost of materials, Labour, T&P, etc. all complete. | | nos | |
| 18 | Construction of chamber for 300 to 400 dia. sluice valve including providing and fixing FRC cover and frame of size 60x60cm for size 1.35x 1.35 x 1.95 m Including cost of materials, Labour, T&P, etc. all complete. | | nos | |
| 19 | Construction of chamber for 50 dia, air valve, Including cost of materials, Labour, T&P, etc. all complete. | | nos | |
| 20 | Construction of 80 Double Air Valve chamber for 100 to 350 dia. pipeline including providing and fixing FRC cover and frame of size 60 x 60cm for size 1.2 x 0.9 x 1.8 m, Including cost of materials, Labour, T&P, etc. all complete. | | nos | |
| 21 | Construction of 100 Double Air Valve chamber for 400 to 500 dia. pipeline including providing and fixing FRC cover and frame of size 60 x 60cm for size 1.5 x 1.2 x 2.3 m, Including cost of materials, Labour, T&P, etc. all complete. | | nos | |
| 22 | Construction of 150 Double Air Valve chamber for above 600 dia. pipeline including providing and fixing FRC cover and frame of size 60 x 60cm for size 1.5 x 1.2 x 2.3 m, Including cost of materials, Labour, T&P, etc. all complete. | | nos | |

| | | | | |
|---|---|---|---|---|
| 23 | Dewatering using 10HP to 70HP diesel engine pump set including Hire charges, cost of Diesel, Engine oil, pump operator, labour charges, conveyance of pump set and fuel to site and back, loading, unloading and any other incidental charges etc., complete. | | | |
| i | Hire charges for Diesel Pump set for 10 HP | | per hr | |
| 24 | Providing Iron Barricading of size 2.50 m width and 1.75 m height using 40x40x4 mm angle for outer frame supports, 25 x 25 x 3 mm angle for inner frame supports and 20 gauge thickness MS sheet for name board (as per drawing) including cutting, welding, fabrication charges and one coat of primer and 2 coats of enamel paint of approved quality, writing "METRO WATER" & work detail/ caution sign, providing necessary interlocking arrangements with adjoining units, fixing danger flags, danger lights, reflectors, fixing stickers etc, including watching during night and placing the barricading units as directed at the sites. | | m | |
| 25 | Dismantling of civil work of existing pumping arrangement for installation of new pumps at WDS | | set | |
| | **House Service Connection** | | | |
| 26 | Making bore and tapping in the DI pipe line, supplying and fixing of specials consisting of plastic moulded clamp saddle with (SS304) female threaded metal insert ,sealing rubber and plastic wide strap including suitable bolts and nuts,Polypropylene compression fitting adopter with metal insert(SS304-female threaded),Polypropylene compression fitting 90deg elbow, UPVC Ball Valve(stop cock) with compression joint at one end and female threaded at other end and suitable enclosure(HDPE) with top side openable for housing UPVC Ball Valve(stopcock)and testing house service connections including cost of water etc complete for following sizes. | | | |
| i | 20 O.D | | nos | |
| ii | 25 O.D | | nos | |
| iii | 32 O.D | | nos | |
| 27 | PP Water Meter Enclosure Insulated, Impact Resistant With Acrylic View Top, Retrofit Type with Watco Printed Logo Size 450mmLength x 155mm Width x 478mm Height with necessary inlet outlet Astral make Upvc connecting fittings (appox 8 feet from Ground to meter and to consumer connection with necessary valves Elbow Socket Mta Union Fta (brass) all complete as per direction of engineer in charge | | nos | |
| 28 | Fixing charges with Astral make Upvc connecting fittings (approximate 8 feet from Ground to meter and to consumer connection with necessary Valves 1no Elbow Socket Mta Union 1no Fta(brass) 2nos Anchoring and Fitment Cementing all complete | | nos | |
| 29 | Supplying, providing & fixing of Pressure Reducing Valve (PRV) at inlet line of the water meter, all complete as per direction of Engineering in charge. | | | |
| i | 15 mm | | nos | |
| ii | 32 mm | | nos | |
| 30 | Supplying & laying house service (MDPE) pipe through sleeve for crossing through by making core cutting in free board of drain, cementing all complete. | | nos | |
| **A** | **Site Clearance & Pump Renovation works at WDS** | | | |
| 31 | Site Clearence & Development | | LS | |
| 32 | Erection of electrically driven clear water non-clog centrifugal pump sets having discharge and head varying from 1300 to 3250 Lpm; 10 to 25m respectively inclusive of foundation, foundation bolts and nuts and required allied materials and works exclusive of suction and delivery connection. | | set | |
| 33 | Making hole in stone masonry/ RCC wall/ RCC slab with core cutter for accommodating refrigerant pipe/ drain pipe/ MS pipe/ cables etc of following dia | | | |
| | 200 mm dia per running inch length | | per inch | |
| 34 | Supplying all materials, labour, T&P and Dismantling and removing 2.5 cm.thick artificial stone flooring as per specifications and direction of Engineer-in-charge.(Dismantling Old Flooring) | | Sqm | |
| 35 | Supplying all materials, labour, T&P and providing Cement concrete 1:2:4 using Crushed stone sand (Msand) and 12 to 20mm gauge hard broken stone jelly for plain concrete work including laying compacting curing, etc., complete. etc all complete as per specifications and direction of Engineer-in-charge.**(Repair of pump house flooring)** | | Cum | |
| 36 | Paving Hydraulic Pressed Cement Double Charged Vitrified Tiles of size 600 x 600 x 8mm finished thickness with small Verona or Indian Marble Chips (other than Salem Magnasite) with CM 1:3, 20mm thick and painted with same colour Cement including polishing with power polisher to a high degree of polish so as to be perfectly smooth and glossy with GREY colour all complete. | | Sqm | |
| 37 | **Pump House Plastering Work** | | | |
| | Supplying all materials, Labour, & T & P for Plastering with cement mortar 1:3 (Crushed stone sand (M-sand)) for 12mm thick including curing, etc., with all as per specification and direction of the Engineer.**(Plastering Work)** | | | |
| i | Inside of the Pump House | | Sqm | |
| ii | Outside of the Pump House | | sqm | |
| **38** | **Pump House Painting Work** | | | |
| a | Painting primary coat on new plaster surface (Inside & outside) | | sqm | |
| b | Distempering (oil bound) two coats for old works as per standard specifications (Inside & outside) | | sqm | |
| | **ALUMINIUM TWO TRACK WINDOW SIZE 1.2 M X 1.3 M** | | | |

| | | | | |
|---|---|---|---|---|
| 39 | Supplying and fabrication and fixing in position of anodised natural colour matt finish sliding window in two track in all floors of size (Frame : Bottom Track - 62 x 37mm @ 1.218 Kg/m, Side and top - 62 x 31.5mm @ 0.788 Kg/m, Shutter: Bottom, Top and plain side vertical - 40x18mm @ 0.38 Kg/m, Interlocking vertical - 40 x 18mm @ 0.632 Kg/m) . All the three shutters with sliding arrangements, the bottom section should have Gutter arrangements so as to drain the water entering and made with extruded aluminium section for outer frames with necessary accessories such rubber beading. Aluminium clips, rubber beading, handle and fixing 4mm thick clear sheet glass including all required for fabrication etc., complete. Necessary dismantling making holes in RCC columns, beams, masonry wherever necessary with power drill to the extent required and made good to the original conditions after fixing as directed by the Board officers. The Al.Surfaces is to be anodised with matt finish under electrically condition in accordance with ISI 1868/1962 specification for an average anodic film thick of not less than 15 microns. (All materials should be got approved by the Site Engineer before fixing in position) | | sqm | |
| 40 | **ALUMINIUM DOUBLE LEAF DOORS**<br><br>Supplying, fabricating and fixing in position of aluminium natural colour matt finish double leaf door half glazed and half PLB board using 12 mm thick PLB board and 5.5 mm thick glazed door using rectangular Aluminium box section of size (Frame : Section - 101.60 x 44.45 x3.18 mm @ 2.399 Kg/m, Shutter : Top, Middle, Vertical style-50 x 44.45 x 2.5mm @ 1.292 Kg/m, Bottom - 100 x44.45 x2.5mm @ 1.974 Kg/m) with necessary accessories such as rubber beading, aluminium clips, best double action Floor spring, handle on both sides, locks, Tower bolt and glass including all materials labour and power consumption charges required for fabrication if necessary chipping dismantling making necessary holes in RCC Coloums, Beams or Masonry wherever necessary with power drill to the extent required and made good to the, original conditions after fixing etc. Complete. The Alumi. surface must be anodised with matt finish under electrically controlled condition in accordance with IS specification 1868 / 1962 of Anodic film thickness of not less than 15 Microns (Fifteen) for all sections. All the materials should be got approved by the Site Engineer before fixing as directed. | | sqm | |
| 41 | **Command & Control room**<br>Supplying all required material for construction of control & Command centre including all civil, electrical, plumbing works including supply of SCADA control desk, Chair, table, A.C. etc required for completion of the job | | LS | |
| 42 | **Repair of Internal Road work** | | | |
| a | Scarifying existing granular road surface, including picking up scarified material and stacking of old serviceable material within a lead of 1000 meters complete as per clause 305.4.3 of MoRT&H specification including all labour, machinery, lighting, guarding and maintenance of diversion. | | sqm | |
| b | Mixing, processing in portable hot mix plant and laying coated bituminous macadam to a consolidated thickness of 50mm using graded aggregate of 40mm IRC size BG metal 0.24m3 20mm IRC size BG metal 0.309 cu.m.10mmIRC BG metal 0.137m3 and bitumen of appropriate grade 36.60Kg/10sqm over prepared surface including consolidation by power roller etc., complete. | | sqm | |
| c | Providing tack coat with appropriate grade of bitumen using 10 kg. per 10 sq.m. including melting applying over the WBM/Metalled surface etc. complete. | | sqm | |
| 43 | Land scaping works (at Pallipattu & Thiruvanmyur WDS) | | LS | |
| 44 | Provision of Stakeholder Consultation, Plantation as per Environmental norms, Capacity and awareness building, Worker's GRM, Medical camps for workers, EHS module training for workers etc during construction period | | LS | |
| | **AUTOMATION WORKS** | | | |
| **A** | **At WDS** | | | |
| 45 | **Data Acquisition from DMA to Server:**<br>Gate ways for Data transfer from DMA's to Server at Pallipatu WDS towards monitoring & control including data saving to server. | | Nos | |
| 59 | **Supply Installation Server for acquisition of data at command control centre at (part-I)**<br>Supply of HP make server with following technical specification :-HPE ProLiant DL380 Gen10 6250 3.9GHz 8-core IP 32GB-R S100i NC 8SFF 800W PS Server & 3 years warranty(Gold Processor) | | Nos | |
| 46 | **Supply Installation & Commissioning of of Smart Array Controller & Power supply kit for server for acquisition of data at command control centre (Part-II)**<br><br>Supply of HPE Smart Array P408i-a SR Gen (8 Internal Lanes/2GB Cache)12G SAS Modular Controller,HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit,HPE 1.2TB SAS 12G Mission Critical 10K SFF SC 3-year Warranty Multi-Vendor HDD,HPE 32GB (1*32GB) Dual Rank *4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit,HPE 96W Smart Storage Lithium-ion Battery with 145mm Cable Kit ,HPE Ethernet 1Gb 4-port BASE-T BCM5719Adapter | | Nos | |

| | | | | |
|---|---|---|---|---|
| 47 | Supply & Laying of Interconnecting Copper piping with 9mm thick insulation between indoor & outdoor unit. (pipe size 3/8"+ 1/2")-15, Supply & Charging of R410 Refrigerant Gas-7, Supply & Laying of 25mm CPVC / UPVC Drain pipe with 9mm thick insulation-10, Supply & laying of 4C X 2.5Sq.mm copper cable with conduit between IDU & ODU-15, Unloading, Lifting, shifting & positioning of IDU & ODU unit at site-1, Labor charges towards Installation, Pressure testing, vacuumizing, Gas Charging & Commissioning-1, Installation of ODU with rubber pad, necessary frame & pedestal-1, Supply of 0.5 sqmm x 6 core Copper cable-15, Outstation charges per unit-1, Installation and Commissioning of Racks, RDU and Accessories and PMC-1, Installation of Fire suppression system & access control-1, Installation of 3 kVA UPS-1, Cable tray with cover-15, Automated NOVEC 1230 based fire suppression Unit Side mount on rack :- Yes, 1 year Warranty :- Yes Installation & commissioning Isolation Transformer:- 5KVA | | Nos | |
| 48 | **Supply of Fire Hydrant with flange DN80 PN16 along with surface box** | | | |
| i | Supply fire hydrant with flange DN80 PN-16 | | Nos | |
| ii | Supply of surface box | | Nos | |
| 49 | **Supply Installation of Smart Rack with accessories for monitoring of data**<br>Supply of smart Rack with following accessories Fire Alarm & Detection-Yes, Detailed Monitoring & Diagnostics thru RDU-Yes, Temp Monitoring-Yes, Humidity Monitoring-Yes, Door Switch Sensor-Yes, Water Leak Sensor, Beacon Alarm-Yes, Event Alerts, RS485 Port-Yes, Rack PDU 0 U . 12 C13 + 4 C19. PDU per Rack-2nos, Email Notification-Yes, Blanking Panel-Yes, Power Input Panel - Single Source-Yes, Biometric Access Control, Dimensions (H x D x W) mm-42 U (H) X 800(W) X 1100(D). Router for interfacing IT system with layer switches and firewall for SCADA/DMS centre. | | Nos | |
| 50 | **Supply Installation of Smart Rack IT capacity-3KVA with UPS-1*3 KVA, Internal Battery & accessories for Server Rack**<br>Supply of smart Rack IT Capacity-3KVA, No. of Server Racks (800mm Width x 1100mm Depth x 42U Height)-1, U space available for IT Load-25 U without isolation transformer, Cooling Capacity-1 * 3.5 KW, Cooling Type- In Rack Fixed Scroll, Cooling Redundancy- N, UPS-1* 3 KVA, UPS Redundancy-N, Back up (Internal Battery) (Vertiv/BPE Approved Batteries)- 30 MIN ON EACH UPS, Battery Rack & Accessories-Internal | | Nos | |
| 51 | **Data Application**<br>Command Control and Monitoring web application for 24x7 water supply service under Drink from Tap Mission in Linux platform Apache server. Language must be used HTML, PHP, JavaScript, Python, CSS. All data and parameters should be stored into Database like MySQL and MongoDB. No third-party framework and server will be used. The Work station with application will be facilitate with Live and static Graph chart for Flow, pressure and level of ESR, OGR and UGR with current, weekly, monthly and historical view option. Remote operation control for valve, Pump Motors and DG sets. All pipeline and assets will be shown on live map with live data. Live Voice notification alert system will be integrated. | | Nos | |
| 52 | Supply, Installation & Commissioning of **SCADA software** with unlimited I/O (Make-Schiender/Simens/Fox) with Graphical processor visualisation Advanced alaram management, historical and Real time trending, Built-in-reporting,Stastical process control, Multithreaded citect VBA and Cicode programming language including supply, installations of Industrial PC with 500 GB SSD & 8 GB RAM(1 No.for Engineering station+ 1No. for operation station), UPS etc all complete Including licence Key. | | NO | |
| 53 | Supply, Installation, Testing, Programming, Wiring & Commissioning of **PLC panel** Made out of 2 MM C.R sheet,PLC Pannel with encloser size 800x700x2100mm Duley Powder coated, Floor standing, Front operated, complete with interconnection with copper wire and lugs having 24 V DC dual power supply, 10 inch HMI, Din Rail mount LIU,1 Port SAP 4 port Lane Ethernet Giga bite Switch . Having Type 2-1P+N 15kA Surge protection device- 1Nos ,32A 15KA MCB - 1 nos, DC powered with isolation Transformer, Transistor/Relay based 16DI, 20DO, 20 AI, 8 AO & Modbos chennal-10. Ambient air temperature up to 55 'C.10" W touch Panel display having 2 ethernet, Usb host device 24VDC type- 1 Nos (Make- Siemense ,Schneider-,Allen Bradly/Phoenix contact). | | NO | |
| 54 | **Pressure Transmitter for pure water pumping station** | | | |
| | Designing, Supplying, Installing, commissioning & testing of pressure transmitter CE marked with following technical parameters at Raw Water Pump House and Interfacing with PLC panel including mounting arrangement.<br>Output 4-20 mA / HART, Power supply - 24V DC ext., Display - 4" LED, Accuracy - +/- 0.1 % of full scale or better, Enclosure- IP 68 of Make (Krone/Force Marshal/Honey well/E&H/ Rose Mount/Danfoss/Wika) | | No. | |
| 55 | **Level Indicator** | | | |
| | **Ultrasonic level transmitter/ for pure water sump / MBR/ ESR/ Wash Water Tank/ Filter bed** | | | |
| | Designing, Supplying, Installing, commissioning & testing of Ultrasonic level transmitter CE marked with following technical parameters Interfacing with PLC panel including mounting arrangement.<br>Output-4-20 mA / HART<br>Power supply - 24V DC ext.<br>Display - 4" LED<br>Range- 0-10 mtr - 20 mtr. | | No. | |

| | | | | |
|---|---|---|---|---|
| | Accuracy - +/- 0.25% of Full Scale or better | | | |
| | Enclosure- IP 68 | | | |
| | Mounting - On PLC panel | | | |
| 56 | **Communication data transmission** | | | |
| i | **CABLE TRENCH**: Excavation in unpaved areas of earth in work sites for conventional cable trenches for a depth upto 0.9 metres or bellow to the water Pipeline including backfilling the trench, job complete in all respects, including all labour and materials complete as per specification and directions of Site Engineer /Engineer-in-Charge. | | m | |
| ii | Labour for cutting open road for laying 50mm HDPE pipe duct for FO cable/screen cable, including T&P - **Concrete Roads** | | Cum | |
| iii | Labour for cutting open road for laying of 50mm HDPE pipe duct for FO cable/screen cable, including T&P - **Bituminous Roads** | | Cum | |
| iv | **HDPE PIPE**: - PE 100 AS PER IS 4984/2016 / PN6 SDR-21,Supply and Laying of 50MM dia HDPE pipe (Make: Supreme/equivalent) in cable trench as per specification and directions of Site Engineer / Engineer-in-Charge. | | m | |
| v | **OFC**: Supply and Laying of 12core unarmoured Optical fibre cable (OFC :fibre glass with F-G 62.5/125micron, 2.6DB/KM F600) to various sites through HDPE pipe, prelaying testing of each cable drum for each fibre and taking the OTDR traces, submission of OTDR traces (in hard as well as soft copy) to Engineer-in-charge/ Site Engineer, blowing of OFC through previously laid HDPE, jointing / splicing of OFC, post installation testing of OFC for each fibre for each drum laid & taking OTDR traces, submission of OTDR traces (in hard as well as soft copy) to Engineer-in-charge/ Site Engineer as per the scope, specifications and directions of Engineer-in-charge/ Site Engineer. | | m | |
| vi | Supply and Installation of OFC **jointing kits** as per drawings, specifications and directions of Engineer-in-charge/Site Engineer. | | no | |
| vii | Supply and laying of pre-cast RCC **Joint Box** 600mm dia, depth 600 with lid as per specification and directions of Site Engineer / Engineer-in Charge. | | set | |
| viii | Supply, Installation and commissioning of copper Data cable system includes cables to be laid in soil, in trenches, cables to be laid in racks, cleated on walls, cable lugs, cables glands, conduits, cable joints etc.as per specification. | | m | |
| | 2**C x 1 sq.mm Make-(Lapp India)** | | | |
| ix | Supply, Installation and commissioning of copper Data cable system includes cables to be laid in soil, in trenches, cables to be laid in racks, cleated on walls, cable lugs, cables glands, conduits, cable joints etc.as per specification. | | m | |
| | 12**C x 1 sq.mm Make-(Lapp India)** | | | |
| x | Supply, Installation and commissioning of **cable tray 80mm** width to wall, celling with necessary bracket, for laying of power and data cable etc.as per specification. all Complete Works | | m | |
| xi | Supply, Installation and commissioning of wall mounted 32 inch Led monitor with system includes cables power plug, switch etc.as per specification. all Complete Works | | set | |
| xii | Supply, Installation and commissioning of three phase 5KVA(4 hour backup) online UPS+AUX with ACDB pure sine wave with battery rack and maintenance free battery system including cables power plug, switch etc.as per specification. all Complete Works, Make- (Hitachi Hirail/Vertive/AVO) | | set | |
| 57 | Provision for Gas Chlorine Dosing System of 900kg capacity along with scrubber, all necessary items at WDS | | Set | |
| 58 | Provision for the backup data transmission through Lora high range wireless communication including installation of hard wire, electrical Wareing and data cabling including cost of man power, materials, transportation,T & P etc all complete | | set | |
| **B** | **Hardware, Installation, Networking, configuration etc for AMI Smart Water Meters AT DMAs** | | | |
| 59 | Supply Electromagnetic iPERL SMART AMI meter (MID Approved) | | | |
| I | DN15 Smart AMI Water meter (Ratio R500) | | nos | |
| Ii | DN20 Smart AMI Water meter (Ratio R500) | | nos | |
| Iii | DN25 Smart AMI Water meter (Ratio R500) | | nos | |
| 60 | **DMA Network Gateway and Power Backup** | | | |
| I | DMA Network Hardware and Firmware for Network DMAs Gateway | | nos | |
| Ii | UPS Power Back up for power failure | | nos | |
| 61 | Network Meter Reading Device | | nos | |
| 62 | **Connectors & Flanges for connection of Meters** | | | |
| I | Connectors Flanges per meter - 15mm Connection | | nos | |
| Ii | Connectors Flanges per meter - 20mm Connection | | nos | |
| Iii | Connectors Flanges per meter - 25mm Connection | | nos | |
| 63 | **Meter Box for safeguarding the Meter** | | | |
| I | Meter Box for 15mm Connection | | nos | |
| Ii | Meter Box for 20mm Connection | | nos | |
| Iii | Meter Box for 25mm Connection | | nos | |
| 64 | **DMA Network, Meters etc Installation,** | | | |
| I | Installation and configuration of Gateways and Networks | | nos | |

| | | | | |
|---|---|---|---|---|
| Ii | Installation and configuration of AMI Meters @ Rs. 200 | | nos | |
| 65 | **Android Device for Meter Reading for mobile reading** | | | |
| | Android Devices for Mobile Meter Reading (Per Depot 2 numbers) | | nos | |
| 66 | **Computer PC Server** | | | |
| | Network PCs and Server including OS and ancillary software's | | nos | |
| | **Software, Installation, Configuration etc** | | | |
| 67 | For Software and Application - One license | | nos | |
| 68 | **SIM Card Gateway Charges** | | | |
| | Gateway charges for 1yr | | nos | |
| 69 | **Billing Software** | | | |
| | Billing Software - 1 Year | | nos | |
| **C** | **Control Unit At DMA entry- Automation With Control Valves and Communication Cable** | | | |
| 70 | Supply, Installation, Testing, Programming, Wiring & Commissioning of street site double encloser PLC panel Made out of 2 MM C.R sheet, PLC Pannel with encloser size 800x700x2100mm Duley Powder coated, Floor standing, Front operated, complete with interconnection with copper wire and lugs having 24 V DC dual power supply, 10-inch HMI, Din Rail mount LIU,1 Port SAP 4 port Lane Ethernet Giga bite Switch. Having Type 2-1P+N 15kA Surge protection device- 1Nos ,32A 15KA MCB - 1 nos, DC powered with isolation Transformer, Transistor/Relay based 24DI, 16DO, 20 AI, 8 AO & Modbos chennal-10. Ambient air temperature up to 55 'C.10" W touch Panel display having 2 ethernet, Usb host &device 24VDC type- 1 Nos, 1 KVA online UPS with 3x65 AH battery bank (Make- Siemens ,Schneider-,Allen Bradly/Phoenix contact). | | nos | |
| 71 | **Pressure Transmitter for pure water pumping station** | | | |
| | Designing, Supplying, Installing, commissioning & testing of pressure transmitter pin type CE marked with following technical parameters at Raw Water Pump House and Interfacing with PLC panel including mounting arrangement. | | nos | |
| | Output 4-20 mA / HART, Power supply - 24V DC ext., Accuracy - +/- 0.1 % of full scale or better, Enclosure- IP 68 of Make (Krone/Force Marshal/Honey well/E&H/ Rose Mount/Danfoss/Wika) | | | |
| 72 | IP 68 enclosure for Pressure Transmitter with tubing from the distribution system. | | nos | |
| 73 | **Communication data transmission** | | | |
| i | **CABLE TRENCH**: Excavation in unpaved areas of earth in work sites for conventional cable trenches for a depth up to 0.9 metres or bellow to the water Pipeline including backfilling the trench, job complete in all respects, including all labour and materials complete as per specification and directions of Site Engineer /Engineer-in-Charge. | | m | |
| ii | Labour for cutting open road for laying 50mm HDPE pipe duct for FO cable/screen cable, including T&P - **Concrete Roads** | | Cum | |
| iii | Labour for cutting open road for laying of 50mm HDPE pipe duct for FO cable/screen cable, including T&P - **Bituminous Roads** | | Cum | |
| iv | **HDPE PIPE**: - PE 100 AS PER IS 4984/2016 / PN6 SDR-21,Supply and Laying of 50MM dia HDPE pipe (Make: Supreme/equivalent) in cable trench as per specification and directions of Site Engineer / Engineer-in-Charge. | | m | |
| v | OFC: Supply and Laying of 12core unarmoured Optical fibre cable (OFC :fibre glass with F-G 62.5/125micron, 2.6DB/KM F600) to various sites through HDPE pipe, prelaying testing of nos cable drum for nos fibre and taking the OTDR traces, submission of OTDR traces (in hard as well as soft copy) to Engineer-in-charge/ Site Engineer, blowing of OFC through previously laid HDPE, jointing / splicing of OFC, post installation testing of OFC for nos fibre for nos drum laid & taking OTDR traces, submission of OTDR traces (in hard as well as soft copy) to Engineer-in-charge/ Site Engineer as per the scope, specifications and directions of Engineer-in-charge/ Site Engineer. | | m | |
| vi | Supply and Installation of OFC **jointing kits** as per drawings, specifications and directions of Engineer-in-charge/Site Engineer. | | nos | |
| vii | Supply and laying of pre-cast RCC **Joint Box** 600mm dia, depth 600 with lid as per specification and directions of Site Engineer / Engineer-in Charge. | | set | |
| viii | Supply, Installation and commissioning of copper Data cable system includes cables to be laid in soil, in trenches, cables to be laid in racks, cleated on walls, cable lugs, cables glands, conduits, cable joints etc.as per specification. | | m | |
| | 2**C x 1 sq.mm Make-(Lapp India)** | | | |
| ix | Supply, Installation and commissioning of copper Data cable system includes cables to be laid in soil, in trenches, cables to be laid in racks, cleated on walls, cable lugs, cables glands, conduits, cable joints etc.as per specification. | | m | |
| | 12**C x 1 sq.mm Make-(Lapp India)** | | | |
| x | Single Channel free Chlorine and turbidity online Analyser at distribution end, Transmitter-Aqua4trans Dual Channel,FRC sensor FMNSX5 with 10 feet cable, Complete system pre mounted on plate with FTCs foe sensors,24 V DC Power supply, including cost of all labours, T&P etc. all complete as per the direction of Engineer-in-charge. | | set | |
| 74 | Charges for installation, Testing & commissioning of On-line Chlorine Analyser. | | set | |
| **D** | **Control Unit At Lane Sub Lane Entry- Automation With Control Valves and Communication Cable** | | | |

| | | | | |
|---|---|---|---|---|
| 75 a | RTU system shall have been neatly wired inside wall / pole mounted CRCA powder coated suitable for outdoor mounting. RTU system shall be protected from all ind of possible surges and must have required surge protection devices. RTU must be fully programmable as per IEC 61131-3 and it shall have MQTT or DNP3 built-in protocol support, RTU IO count shall have DI-8, DO-4, AI-4, RTU shall have capability of reading fast digital pulses from flow meters. Ambient working temperature shall be 55 deg C for RTU & other components. System shall work under relative humidity up to 95% (Non-condensing). All required networking accessories must be included in the RTU system for LIVE data communication between the RTU panel and existing NIC Server (preferably Linux Kernel Supported) via Compact Industrial Router, 4G/5G LTE, Dual SIM and Dual Ethernet Ports*(1XLAN,). RTU shall be compatible with protocol for communication . Data transmission rates from 300 to 9600 baud for serial ports and 10/100 Mbps for TCP/IP Ethernet ports. The data should be stored through an application in the server for monitoring and analysis of entire water network from various remote places. In case of signal failure , all data shall be recovered upon restoring of Signal. | | NO | |
| | Approved make: | | | |
| | RTU-Phoenix/Schneider/Siemens, | | | |
| | SPD-Phoenix/Dehn/Mersen | | | |
| | Media Converter-Syrotech/Dlink/TP-Link | | | |
| | Panel-Rittal/AEC/Werner | | | |
| | Approved system provider: | | | |
| | Dynamic Technologies / Automatech Electric Co / Visnave Automation | | | |
| b | Supply and installation of 7 Mtr height FRP Pole, Top ID 85mm, Bottom ID 176mm, Thk 5mm, FRP Baseplate 276x276x20- along the street for mounting the antenna of router. | | NO | |
| 76 | Installation, testing & commissioning for the RTU system at lane level, including cost of all labour, T&P etc., all complete. | | NO | |
| 77 | MS piping for installation of Globe valve, air valve, (Woltman Flange ended Type Cold water ( 0 to 45 Deg C) meter.C.I Body. Conforming to IS: 2373.ISO 4064 Class B.CE Marked Removable Mechanism for easy cleaning Flange Class PN:16. Communication: Pulse Output) , basket strainer and fibre cover over the arrangement including cost of all materials, labour for fitting fixing T&P etc., all complete | | | |
| i | 100 mm | | NO | |
| ii | 150mm | | NO | |
| iii | 200mm | | NO | |
| 78 | **Pressure Transmitter for pure water pumping station** | | | |
| | Designing, Supplying, Installing, commissioning & testing of pressure transmitter pin type CE marked with following technical parameters at Raw Water Pump House and Interfacing with PLC panel including mounting arrangement. | | No. | |
| | Output 4-20 mA / HART, Power supply - 24V DC ext., Accuracy - +/- 0.1 % of full scale or better, Enclosure- IP 68 of Make (Krone/Force Marshal/Honey well/E&H/ Rose Mount/Danfoss/Wika) | | | |
| 79 | IP 68 enclosure for Pressure Transmitter with tubing from the distribution system. | | No. | |
| **E** | **Provision of Electro-mechanical Instruments for Replacement of Pumping Unit.** | | | |
| 80 | Supply, Installation, Testing, Programming, Wiring & Commissioning of PLC panel Made out of 2 MM C.R sheet, **PLC Pannel** with encloser size 800x700x2100mm Duley Powder coated, Floor standing, Front operated, complete with interconnection with copper wire and lugs having 24 V DC dual power supply, 10-inch HMI, Din Rail mount LIU,1 Port SAP 4 port Lane Ethernet Giga bite Switch. Having Type 2-1P+N 15kA Surge protection device- 1Nos ,32A 15KA MCB - 1 nos, DC powered with isolation Transformer, Transistor/Relay based 16DI, 20DO, 20 AI, 8 AO & Modbos chennal-10. Ambient air temperature up to 55 'C.10" W touch Panel display having 2 ethernet, USB host device 24VDC type- 1 Nos | | Nos | |
| 81 | Supply, fitting, fixing of Pressure transmitter with installation, testing PT S-10, 0-5 Kg/cm2 Pressure transmitter with drilling holes to the water main, ferrule, tubing, needle valves & snubber with LIVE data (one data in every 5 second communication (by agency) between the PLC panel with fibre optic and GPRS with a data storing facility at server end. The data should be stored through an application in the server for monitoring and analysis at remote places, including mechanical dismantled joint cost of all labours, T&P and Transportation to site etc all complete as per the direction of Engineer-in-charge | | Nos | |
| | **MECHANICAL WORKS** | | | |
| **A** | **At WDS** | | | |

| | | | | |
|---|---|---|---|---|
| 82 | **Electromagnetic Flow Meter** shall be a velocity sensing Electromagnetic type, microprocessor based signal converter, sealed housing, flanged tube meter for 1.0 Mpa working pressure, manufactured to highest standard available for mag-meters, equipped with minimum six digit digital totalizers, reading indifferent units (Kilolitres / Cubic meter)and shall be accurate within 0.5% of Measured value, shall operate within a range of 0.3m/sec to 4m/sec and be constructed as follows: Meter tube(Sensor) shall be fabricated from stainless steel tube and use class PN10 flat face carbon steel flanges in accordance with IS 1538. These flanges shall be welded to the flow tube. The internal and external of the meter tube shall be blasted to near white and lined with hard rubber/Poly urethrae/PTFE preferably by SBR or EPDM. Meter tube shall have a constant nominal inside diameter offering no obstruction to the flow. The accuracy should be inclusive of linearity, hysteresis, repeatability, temperature and pressure effects. Coil Housing shall be fabricated from stainless steel (SS304) /Die cast Aluminium/Carbon steel with anticorrosive paint for corrosion resistance and welded to the tube providing a completely sealed environment for all coils, electrode connections and wiring harness capable of submerged or buried operation with IP68 Protection. Signal Converter shall be pulsed DC coil excitation type with auto zeroing. The signal converter shall be remotely mounted away from the meter. The converter shall indicate direction of flow and provide a flow rate indication and a total of flow volume for both forward and reverse directions. The converter shall provide an isolated 4-20mA out put into minimum 500-ohm load and a frequency output of a maximum of 0-10KHZ and a scaled pulse output. The microprocessor-based signal converter shall have a self-diagnostic test mode and a backlit display that continuously displays “Rate of Flow” and “Total Volume”. Converter shall be supplied with a programable low flow drop out, higher flow and empty pipe zero return. The signal converter housing should be die-cast aluminium with glass window. The converter cum transmitter should be fully programable from the front facia. The programming should be user friendly, self-prompting menu driven. Flow meter test calibration certificate from FCRI, flow test lab / NABL accredited lab to be furnished. | | | |
| i | 600 mm | | no | |
| ii | 700 (inlet) mm | | no | |
| iii | 1000 mm (common header) | | no | |
| 83 | Supply delivery and fixing of Pneumatic Actuator with position indicator with 3phase, 415V, 50Hz, Ac motor with embedded thermostats, two limit switches, torque switches space leaker, hand wheel for emergency manual operation wired on terminal blocks, secondary gear box with dark grey epoxy paint to operate following size of valves etc | | | |
| i | Butterfly Valve of size 700mm Dia, PN16 | | no | |
| 84 | Supplying, Fitting, fixing & Commissioning, of double chamber DI control valve of PN 1.6 ,hydraulic operated 24 V DC, solenoid control,IP68, integrated with PLC panel for operation (local/remote and web enabled with command and control ) of make CLA/DOROT-300/Bermad-700 to control water supply including the cost of valve cutting the pipeline & making good to the damages including cost of all labours, T&P etc. all complete as per the direction of Engineer-in-charge. | | | |
| | **Electric Operated Solenoid Valve Pilot Actuated** | | | |
| i | 600 | | no | |
| 85 | Supply and delivery of DI D/F Gate (sluice) valves (soft seated) resilient seated soft sealing Gate Valves (Sluice Valves) with body Bonnet of Ductile cast iron of Grade GGG 40 or GGG 50, Wedge fully rubber lined with EPDM replaceable spindle nut without gland packing and with 3 O- Ring protection on the shaft and seals of NBR and the valves should be of Vacuum tight and 100% leak proof with face to face dimensions as per BS 5163-89/ISI 14846-2000/DIN 3202 F4. All the valves should be with electrostatic powder coating both inside and out side with pocket less straight through body passage. All the valves are to be compatible for buried application with pressure rating PN 10/16 and with 5 years warranty | | | |
| i | 600 | | no | |
| 86 | Fitting and fixing of sluice valves with tail pieces, necessary rubber packing, SS 204 nut bolt including labour, T&P, transportation to site from store and fixing the surface boxes. | | | |
| i | 600 | | no | |
| 87 | Providing, installation, testing and commissioning of Diaphragm Type Pressure Gauges Dial size 150 mm glycerine filled shatterproof glass, over range protection: 125% of maximum pressure, Material of sensor and other wetted parts: SS type 316, Housing material: Die cast aluminium | | no | |
| 88 | **Pressure switch** pressure range 0-6 kg/cm2 having manifold, ss tubing including needle valve Make (Indforce/Swidzer/Wika) | | No. | |

| | | | | |
|---|---|---|---|---|
| 89 | Supplying all materials, t&p and providing, erecting and giving test of VT pump set conforming to IS 9079 operating with S.S impeller, priming funnel, cock, suitable flanges at suction and delivery side. Pump shall have common shaft for pump and motor. Motor shall be suitable for working on 415 V ± 10%, 3 Ph, 50 Hz A.C. Supply. Motor shall be TEFC type. Pump set shall be suitable for working at various discharge and head requirements. Pump shall be erected on Provided C.C. foundation block with suitable foundation bolts grouted in C.C. foundation block with lead of all materials to site. | | hp | |
| **B** | **Control Unit At DMA entry- Automation With Control Valves and Communication Cable** | | | |
| 90 | **Electromagnetic Flow Meter** shall be a velocity sensing Electromagnetic type, microprocessor based signal converter, sealed housing, flanged tube meter for 1.0 Mpa working pressure, manufactured to highest standard available for mag-meters, equipped with minimum six digit digital totalizers, reading indifferent units (Kilolitres / Cubic meter)and shall be accurate within 0.5% of Measured value, shall operate within a range of 0.3m/sec to 4m/sec and be constructed as follows: Meter tube(Sensor) shall be fabricated from stainless steel tube and use class PN10 flat face carbon steel flanges in accordance with IS 1538. These flanges shall be welded to the flow tube. The internal and external of the meter tube shall be blasted to near white and lined with hard rubber/Poly urethrae/PTFE preferably by SBR or EPDM. Meter tube shall have a constant nominal inside diameter offering no obstruction to the flow. The accuracy should be inclusive of linearity, hysteresis, repeatability, temperature and pressure effects. Coil Housing shall be fabricated from stainless steel (SS304) /Die cast Aluminium/Carbon steel with anticorrosive paint for corrosion resistance and welded to the tube providing a completely sealed environment for all coils, electrode connections and wiring harness capable of submerged or buried operation with IP68 Protection. Signal Converter shall be pulsed DC coil excitation type with auto zeroing. The signal converter shall be remotely mounted away from the meter. The converter shall indicate direction of flow and provide a flow rate indication and a total of flow volume for both forward and reverse directions. The converter shall provide an isolated 4-20mA out put into minimum 500-ohm load and a frequency output of a maximum of 0-10KHZ and a scaled pulse output. The microprocessor-based signal converter shall have a self-diagnostic test mode and a backlit display that continuously displays “Rate of Flow” and “Total Volume”. Converter shall be supplied with a programable low flow drop out, higher flow and empty pipe zero return. The signal converter housing should be die-cast aluminium with glass window. The converter cum transmitter should be fully programable from the front facia. The programming should be user friendly, self-prompting menu driven. Flow meter test calibration certificate from FCRI, flow test lab / NABL accredited lab to be furnished and with 5 years warranty | | | |
| i | 100 mm | | nos | |
| ii | 150 mm | | nos | |
| iii | 200 mm | | nos | |
| iv | 250 mm | | nos | |
| v | 300 mm | | nos | |
| vi | 350 mm | | nos | |
| vii | 400 mm | | nos | |
| viii | 450 mm | | nos | |
| ix | 500 mm | | nos | |
| x | 600 mm | | nos | |
| xi | 700 mm | | nos | |
| 91 | Supplying, Fitting,fixing & Commissioning, of double chamber DI control valve of PN 1.6 ,hydraulic operated 24 V DC, selonoid control,IP68, integrated with PLC pannel for operation (local/remort and web enabled with command and control ) of make CLA/DOROT-300/Bermad-700 to control water supply including the cost of valve cutting the pipeline & making good to the damages including cost of all labours, T&P etc. all complete as per the direction of Engineer-in-charge. | | | |
| | **Electric Operated Solenoid Valve Pilot Actuated** | | | |
| i | 100 mm | | nos | |
| ii | 150 mm | | nos | |
| iii | 200 mm | | nos | |
| iv | 250 mm | | nos | |
| v | 300 mm | | nos | |
| vi | 350 mm | | nos | |
| vii | 400 mm | | nos | |
| viii | 450 mm | | nos | |
| ix | 500 mm | | nos | |

| | | | | |
|---|---|---|---|---|
| 92 | Supply and delivery of DI D/F Gate (sluice) valves (soft seated) resilient seated soft sealing Gate Valves (Sluice Valves) with body Bonnet of Ductile cast iron of Grade GGG 40 or GGG 50, Wedge fully rubber lined with EPDM replaceable spindle nut without gland packing and with 3 O- Ring protection on the shaft and seals of NBR and the valves should be of Vacuum tight and 100% leak proof with face to face dimensions as per BS 5163-89/ISI 14846-2000/DIN 3202 F4. All the valves should be with electrostatic powder coating both inside and outside with pocket less straight through body passage. All the valves are to be compatible for buried application with pressure rating PN 10/16 and with 5 years warranty | | | |
| i | 150 mm | | nos | |
| ii | 200 mm | | nos | |
| iii | 250 mm | | nos | |
| 93 | Fitting and fixing of sluice valves with tail pieces, necessary rubber packing, SS 204 nut bolt including labour, T&P, transportation to site from store and fixing the surface boxes. | | | |
| i | 100 mm | | nos | |
| ii | 150 mm | | nos | |
| iii | 200 mm | | nos | |
| iv | 250 mm | | nos | |
| 94 | Providing, installation, testing and commissioning of Diaphragm Type Pressure Gauges Dial size 150 mm glycerine filled shatterproof glass, Over range protection: 125% of maximum pressure, Material of sensor and other wetted parts: SS type 316, Housing material: Die cast aluminium | | nos | |
| 95 | Providing & fixing Stainless Steel pressure gauge with dial of 150 mm dia size and range 0 to 20 kg/sq.cm with 3 / 8 " BSP bottom entry, Ball valve, SS Syphon tube all fittings etc, duly calibrated before installation in MKS and FPS units, Accuracy Level +/- 1% including Making Drilling in Existing MS Pipe Etc. as required. All as per pre-approved by Engineer in-charge. | | m | |
| | **Electro-Mechanical & Instrumentation items** | | | |
| 96 | Providing, erecting glistering filled Di firm based 150 mm dia **SS Pressure gauge** of range 0- 6KG/cm2 complete with syphon tube, gauge cock, Snuber suitable for 12 mm dia SS Pipe., Including cost of materials, Labour, T&P, etc. all complete. Make (Force Marshal/Honey well/Wika) | | Nos | |
| 97 | Supply ,laying, fitting & fixing of DI D/F Gate (sluice) valves (soft seated) resilient seated soft sealing Gate Valves (Sluice Valves) with body Bonnet of Ductile cast iron of Grade GGG 40 or GGG 50, Wedge fully rubber lined with EPDM replaceable spindle nut without gland packing and with 3 O- Ring protection on the shaft and seals of NBR and the valves should be of Vacuum tight and 100% leak proof with face to face dimensions as per BS 5163-89/ISI 14846-2000/DIN 3202 F4. All the valves should be with electrostatic powder coating both inside and outside with pocket less straight through body passage. All the valves are to be compatible for buried application with pressure rating PN 10/16 and with 5 years warranty | | | |
| i | 200 mm | | Nos | |
| ii | 250 mm | | Nos | |
| iii | 300 mm | | Nos | |
| 98 | Supply, laying, fitting & fixing of Pressure switch pressure range 0-6 kg/cm2 having manifold, ss tubing including needle valve | | Nos | |
| 99 | **Electromagnetic Flow Meter** shall be a velocity sensing Electromagnetic type, microprocessor based signal converter, sealed housing, flanged tube meter for 1.0 Mpa working pressure, manufactured to highest standard available for mag-meters, equipped with minimum six digit digital totalizers, reading indifferent units (Kilolitres / Cubic meter)and shall be accurate within 0.5% of Measured value, shall operate within a range of 0.3m/sec to 4m/sec and be constructed as follows: Meter tube(Sensor) shall be fabricated from stainless steel tube and use class PN10 flat face carbon steel flanges in accordance with IS 1538. These flanges shall be welded to the flow tube. The internal and external of the meter tube shall be blasted to near white and lined with hard rubber/Poly urethrae/PTFE preferably by SBR or EPDM. Meter tube shall have a constant nominal inside diameter offering no obstruction to the flow. The accuracy should be inclusive of linearity, hysteresis, repeatability, temperature and pressure effects. Coil Housing shall be fabricated from stainless steel (SS304) /Die cast Aluminium/Carbon steel with anticorrosive paint for corrosion resistance and welded to the tube providing a completely sealed environment for all coils. | | | |

| | | | | |
|---|---|---|---|---|
| 100 | electrode connections and wiring harness capable of submerged or buried operation with IP68 Protection. Signal Converter shall be pulsed DC coil excitation type with auto zeroing. The signal converter shall be remotely mounted away from the meter. The converter shall indicate direction of flow and provide a flow rate indication and a total of flow volume for both forward and reverse directions. The converter shall provide an isolated 4-20mA out put into minimum 500-ohm load and a frequency output of a maximum of 0-10KHZ and a scaled pulse output. The microprocessor-based signal converter shall have a self-diagnostic test mode and a backlit display that continuously displays “Rate of Flow” and “Total Volume”. Converter shall be supplied with a programable low flow drop out, higher flowand empty pipe zero return. The signal converter housing should be die-cast aluminium with glass window. The converter cum transmitter should be fully programable from the front facia. The programming should be user friendly, self-prompting menu driven. Flow meter test calibration certificate from FCRI, flow test lab / NABL accredited lab to be furnished. | | | |
| i | 200 mm | | Nos | |
| ii | 250 mm | | Nos | |
| iii | 300 mm | | Nos | |
| 101 | PROVISION FOR SURGE ANTICIPATING VALVE @ WDS (1 Electronic+1 Mechanical) | | | |
| (i) | Type 2-1 P+N 15KVA Surge protection device | | nos | |
| (ii) | Supply, installation, testing & commissioning of surge anticipating control valve | | nos | |
| (iii) | Series 100 standard Dorot - Surge Anticipating (RE), Pilot operated, Valve Hydraulically Activated, (Electric Version), Solenoid IP65,PN 16 (MOC DI), Tubing - High Pressure Polypropylene, For technical specification<br>Series 100 RE EL | | nos | |
| 102 | MS PIPE | | | |
| | 500mm dia M.S.Pipe (11 mm thick) | | m | |
| 103 | Manufacturing, supply, and delivery of WCB, D/F rising spindle metal seated gland Gate Valves | | | |
| i | 200mm dia valve (PN-16) | | nos | |
| ii | 250mm dia valve (PN-16) | | nos | |

| | | | | |
|---|---|---|---|---|
| iii | 300mm dia valve (PN-16) | | nos | |
| 104 | Supplying all materials, labour,t&p and fixing DI D/F Slanted seat Swing Check Valve in single piece body and body of ductile cast iron GGG-40 and dish of ductile cast iron GGG-40 with fully encapsule and EPDM rubber where both faces can be used Electrostatic epoxy powder/ liquid coating (E.P-P) inside and out side colour blue RAL 5005 with minimum coating thickness of 250 microns. The EPDM rubber & epoxy powder should be approved for drinking water application, applied through fusion bonding process by dipping the shot-blasted casted components heated up to 200degree ( face to face dimensions as per EN558-1, series 48 and flange connection as per EN 1092-2/2/15 1538. | | | |
| i | 200 mm dia D.I N.R Valve (PN-1.6) | | nos | |
| ii | 250 mm dia D.I N.R Valve (PN-1.6) | | nos | |
| iii | 300 mm dia D.I N.R Valve (PN-1.6) | | nos | |
| 105 | Dismantling Joint ss304 grade PN 1.6 | | | |
| i | 200 mm dia | | nos | |
| ii | 250 mm dia | | nos | |
| iii | 300 mm dia | | nos | |
| | MS Flange's | | | |
| 106 | MS Pipe with fabrication and fittings | | nos | |
| | **ELECTRICAL WORKS** | | | |
| **A** | **At WDS** | | | |
| 107 | Transformer 11/3.3 KV, DY 11, ONAN, OLTC with Copper wound | | | |
| i | 1600 KVA | | set | |
| ii | 250 KVA | | set | |
| iii | 500 KVA | | set | |
| 108 | 11 KV Breaker (VCB) indoor type (four panel), RMU including Control cable | | no | |
| ii | 11 kv Breaker (VCB) including Control cable | | no | |
| 109 | 3.3 KV breaker (VCB), RMU including Control cable (9 numbers) | | set | |
| 110 | MCC Pannel for auxiliary system (400 AMP) | | no | |
| ii | MCC Pannel for VFD | | no | |
| 11 | Supply, Installation, testing & commissioning of fully wired 3.3KV, 275 KW VFD panel including cost of materials, labour, transportation, etc all complete as per direction of Engineer-in charge. | | no | |
| 112 | Supply, Installation, testing & commissioning of fully wired 55KW VFD panel with star delta Bypass arrangement including cost of materials, labour, transportation, etc all complete as per direction of Engineer-in charge. | | no | |
| 113 | DG SET | | | |
| i | Outdoor type DG SET with canopy mounted with 1600 KVA, 3.3 KV output. | | set | |
| ii | Outdoor type DG SET canopy mounted with 250 KVA, 0.43 KV output. | | set | |
| iii | 100 KVA | | set | |
| 114 | Supply, Installation, testing & commissioning of Synchronized DG Panel including cost of materials, labour, transportation, etc all complete as per direction of Engineer-in charge | | | |
| i | for 1600 KVA | | set | |
| ii | for 500 KVA | | set | |
| 115 | Supply, Installation, testing & commissioning of HT cables 11 KV grade for VCB & Transformer including cost of materials, labour, transportation, etc all complete as per direction of Engineer-in charge | | m | |
| 116 | Supply, Installation, testing & commissioning of HT cables (95 Sqmm) 3.3 KV for VFD and from VFD to Pump set including cost of materials, labour, transportation, etc all complete as per direction of Engineer-in charge | | m | |
| 117 | Supply, Installation, testing & commissioning of LT cables (Aluminium Armoured 3 core) for VFD and from VFD to Pump set & Transformer including cost of materials, labour, transportation, etc all complete as per direction of Engineer-in charge.( 50 mm) | | m | |
| **B** | **At Operational Zones** | | | |
| 118 | Single phase Power Supply (0.5 Kw) with energy meter cable security deposit for commercial use from distribution company | | nos | |

Note-

**The Bidders to suggest considered qunatities and quote unit rates exclusive of GST.**
**Bidders may insert additional line items and quantities deemed necessary .**
**This Form for Bill of Quantities is provided for reference purposes only.**
**The Appendix IB - Annex I only shall be considered for evaluation.**
**This filled up form shall be submitted / upoloaded to the tender portal (along with Financial Bid) in .pdf format only.**

Date:
Place:

Yours faithfully,
(Signature of the Authorised signatory)

(Name and designation of the of the Authorised signatory)
Name and seal of Bidder / Lead Member