

**KOLKATA PORT TRUST**  
**HALDIA DOCK COMPLEX**

**Tender No.: SDM (P&E) / T/45 / 2019-20**

**E-TENDER No.: KoPT/Haldia Dock Complex/P&E Div/8/19-20/ET/27 dated: June 10, 2019**

**E-Tenders, under single stage two part system [Part I: Pre-qualification & Techno-commercial Bid and Part II: Price Bid] for work of ‘Supply, Installation, testing & Commissioning of Outdoor type 3.3 KV, 1010 KVA Diesel Generator Set with AMF Panel & indoor type 3.3 KV HT VCB Panel including Comprehensive operation & maintenance contract (COMC) for the period of 5 years after expiry of 2 years guarantee period for Lock Entrance at Haldia Dock Complex, KoPT”**

**CORRECTIONS / ADDITIONS / DELETIONS, ETC.**

**[Total Number of Pages: 26 ]**

NOTE:

1. This “Addendum-I” should be read in conjunction with this office above Tender Document.
2. Consequential changes, arising out of this Addendum-I, will be deemed to have been effected, even if the same were not incorporated specifically in the Tender Document.
3. One set of this “Addendum-I”, shall have to be submitted along with the Offer (in with each page of it, duly signed and stamped, as token of acceptance.
4. All other terms and conditions of this office above Tender Document will remain unchanged.

## HALDIA DOCK COMPLEX

### ♠ ADDENDUM-I ♠

**Tender No.: SDM (P&E) / T/45 / 2019-20**

**E-TENDER No.: KoPT/Haldia Dock Complex/P&E Div/8/19-20/ET/27 dated: June 10, 2019**

### Terms and conditions

Sl no.	Page No.	Clause No.	As specified in the Tender Document.	To be Read as/ Remarks
1		Tender document Subject	Supply, Installation, testing & Commissioning of Outdoor type 1010 KVA Diesel Generator Set with AMF Panel including Comprehensive maintenance contract for the period of 5 years after expiry of 2 years guarantee period and Supply, Installation, testing & Commissioning of 31 nos. indoor type HT Panel of 3.3 KV, 1250 Amps, 3 Phase, 50 Hz, 25 KA VCB for 3sec. for Lock Entrance at Haldia Dock Complex, KoPT.	Supply, Installation, testing & Commissioning of Outdoor type 3.3 KV, 1010 KVA Diesel Generator Set with AMF Panel & indoor type 3.3 KV HT VCB Panel including Comprehensive operation & maintenance contract (COMC) for the period of 5 years after expiry of 2 years guarantee period for Lock Entrance at Haldia Dock Complex, KoPT.
2	6	3.10	Comprehensive Maintenance Contract (CMC) Period: 5 years, after expiry of 24 months' Defect Liability Period	Comprehensive Operation & Maintenance (COMC) Period: 5 years, after expiry of 24 months' Defect Liability Period
3	6	3.11 ii)	Performance Bank Guarantee ii) 10 % of CMC value (for 05 years , after expiry of Defect Liability Period) [excluding GST] during CMC period of 05 years.	Performance Bank Guarantee ii) 10 % of COMC value ( for 05 years , after expiry of Defect Liability Period) [excluding GST] during COMC period of 05 years.
4	7	S.O.T 3.13 i)	Starting date & time of submission of e-Tender at <a href="http://www.mstcecommerce.com/eprochome/kopt">http://www.mstcecommerce.com/eprochome/kopt</a> : <b>24.06.2019 from 11:00 Hrs. (IST).</b>	Starting date & time of submission of e-Tender at <a href="http://www.mstcecommerce.com/eprochome/kopt">http://www.mstcecommerce.com/eprochome/kopt</a> : <b>03.07.2019 from 11:00 Hrs. (IST).</b>
5	7	S.O.T 3.13 ii)	Closing date & time of submission of e-Tender at <a href="http://www.mstcecommerce.com/eprochome/kopt">http://www.mstcecommerce.com/eprochome/kopt</a> : 03.07.2019, up to 16:00 Hrs. (IST).	Closing date & time of submission of e-Tender at <a href="http://www.mstcecommerce.com/eprochome/kopt">http://www.mstcecommerce.com/eprochome/kopt</a> : 16.07.2019, up to 16:00 Hrs. (IST).
6	7	S.O.T 3.13 iii)	Date & time of opening of Part-I (Techno commercial Bid)- 03.07.2019, 16:30 Hrs. (IST) onwards.	Date & time of opening of Part-I (Techno commercial Bid)- 16.07.2019, 16:30 Hrs. (IST) onwards.

7	32	6.1 Vi (in full)	Supply and installation of 24 V DC Maintenance free Battery Bank consisting of 12V, Batteries -02Nos, of 180AH (at 10 Hour Rate) Cells (Maintenance free, Lead Acid /gel type).	Supply and installation, testing & commissioning of 24 V DC, minimum 180 AH DC panel with maintenance free lead acid battery of 12 V with at least 3 hours back up for substation, Machinery House-1 (outer), Machinery House-2(intermediate) and Machinery House-3(inner) each.
8	32 & 33	6.1 Vii (para-1)	Supply, installation and commissioning of Battery Charger, to be used for charging 24 V, 360 AH Battery Bank , should be of Float-cum-Boost Charger Type , having provision for auto Changeover from Boost to Float & vice-versa and following Technical features:-	Supply, installation and commissioning of Battery Charger, to be used for charging battery bank as mentioned at sl no. 1. Each should be of Float-cum-Boost Charger Type , having provision for auto Changeover from Boost to Float & vice-versa and following Technical features:-
9	34	6.2	i) Engine- Cummins / Cater Pillar/MTU/Toyo Denki ii) Alternator - Stamford / AVK or AVKC /Siemens iv) VCB & MCCB- L&T / Siemens / Schneider / ABB	To be deleted & read as i) Engine- Cummins / Perkins/ Cater Piller / MTU ii) Alternator - Stamford / AVKC /Leroy Somer/ Siemens iv) VCB -Siemens/ ABB To be added after Viii) ix) MCCB – L&T/ Siemens / Schneider / ABB
10	34	C. 6.3 (1 <sup>st</sup> sentence of para-1)	Diesel Engine shall be Radiator cooled of any of the approved make capable of developing 1180 BHP at 1500 rpm confirming to BS 5514/ISO: 3046.	Diesel Engine shall be Radiator cooled of any of the approved make confirming to BS 5514/ISO: 3046. BHP shall be as per manufacturer's standard. The same should be match 1010 KVA capacity, 3.3 KV, 1500 rpm outdoor DG.
11	34	C. 6.3 (1 <sup>st</sup> sentence of para-4)	Engine shall be of 12 cylinders with four strokes and shall be of reciprocating compression ignition (Diesel) type, water cooled, electric start, turbocharged & after cooled model, Multi cylinder with electronic fuel governor suitable for the above generating set.	To be deleted and read as : No of cylinders shall be as per manufacturer's standard. Engine shall be of reciprocating compression ignition (Diesel) type, water cooled, electric start, turbocharged & after cooled model, Multi cylinder with electronic fuel governor suitable for the above generating set.
12	36	6.5 b)	Aluminium bus bars with suitable capacity with incoming/ outgoing terminals	Copper bus bars with suitable capacity with incoming/ outgoing terminals
13	37	6.5 e) (in full)	Since the DG Set has a voltage level of 3.3 kV, MCCB for overload and short circuit will not be applicable.	If MCCB is provided in the panel then microprocessor based protection to be provided.
14	38	6.7 b) (in	The acoustic enclosure should be made of CRCA sheets in green shade and a structural/ sheet metal base frame	The acoustic enclosure should be made of CRCA sheets. The paint shade of the Acoustic Enclosure shall be as per

		full)	painted in black.	manufacturer's standard.
15	39 & 40	6.9 a) & b) [in full]	Auto Mains Failure Panel	The AMF Panel shall be designed in such a way that both incomer and DG will be terminated and all other provision shall be kept as per relevant standard. The panel shall be manufactured from certified manufacturer of CPRI.
16	42	6.14 (para - 2)	<b>FUEL SYSTEMS /FUEL TANK:</b> It should contain PT fuel system with Electronic Step Timing Control (ESTC) injectors which smoothly stabilise engine speed under load with A1 class Electronic governing. It should also contain Dual fuel filter system which is a pre filter including water separator and Water In Fuel (WIF) sensor and main filter	<b>FUEL SYSTEMS /FUEL TANK:</b> Fuel system/fuel tank of the engine shall be as per engine manufacturer's standard.
17	44	6.17 (1 <sup>st</sup> sentence)	<b>CONSTRUCT UNIFORM PLATFORM ( MASONRY WORK )</b> The empty area of size (8mtr x 3mtr x 1mtr) shall be covered to make uniform platform equivalent to the existing surface	<b>CONSTRUCT UNIFORM PLATFORM ( MASONRY WORK ) :</b> The RCC foundation should be constructed based on the soil bearing capacity i.e. 7 Ton per Sq.M. The size of the foundation shall be at least more than 1 M bigger than the size of the DG set at the height of 1 M from the ground level including steps.
18	46	D. 6.25 to 6.32	<b>MAINTENANCE WORK DURING DEFECT LIABILITY PERIOD AND CMC PERIOD</b> 6.25. After successful installation by the Contractor and accepted by HDC, Maintenance shall be carried out by the contractor during guarantee period of 2 years and CMC period of 5 years, after expiry of 2 years' Guarantee period 6.26. The Maintenance work is comprehensive in nature, therefore, all the repairing and maintenance cost including spares to be borne by the Contractor. 6.27. The contractor shall submit the maintenance schedule to HDC for approval based on OEM recommendation to carry out the maintenance work during Defect Liability Period, as well as during CMC	<b>MAINTENANCE WORK DURING DEFECT LIABILITY PERIOD AND CMC PERIOD</b> 6.25. After successful installation by the Contractor and accepted by HDC, Operation & Maintenance shall be carried out by the contractor during guarantee period of 2 years and COMC period of 5 years, after expiry of 2 years' Guarantee period 6.26. The Operation & Maintenance work is comprehensive in nature, therefore, all the repairing and maintenance cost including spares to be borne by the Contractor. 6.27. The contractor shall submit the operation & maintenance schedule to HDC for approval based on OEM recommendation to carry out the operation & maintenance work during Defect Liability Period, as well as during COMC

			<p>period of 5 years</p> <p>6.28. The contractor shall maintain records in Log book for the entire Maintenance work duly signed by authorised representatives of HDC, KoPT &amp; the Contractor and the same need to be submitted along with bill for payment.</p> <p>6.29. During the maintenance, the contractor shall clean properly the D.G. set , AMF panels, etc. and check all the parameters as per maintenance schedule and standards and also with the satisfaction of the HDC representatives.</p> <p>6.30. The Contractor shall arrange training for the technical staff of HDC for maintenance of D.G. set. The training should included AMF panel operation on both the mode i.e. Auto/manual start of DG set immediately during failure of power supply &amp; malfunctioning of AMF panel including important check list.</p> <p>6.31 The Contractor shall complete the preventive maintenance activity as per schedule and shall record in register with sign of appropriate authority of HDC and the Contractor.</p> <p>6.32. Payment shall be made on quarterly basis during Defect Liability Period, as well as during CMC period. However, the Contractor shall submit the records showing availability and maintenance report, alongwith the bills.</p>	<p>period of 5 years</p> <p>6.28. The contractor shall maintain records in Log book for the entire Operation &amp; Maintenance work duly signed by authorised representatives of HDC, KoPT &amp; the Contractor and the same need to be submitted along with bill for payment.</p> <p>6.29. During the operation &amp; maintenance, the contractor shall clean properly the D.G. set , AMF panels, all HT Switchgear &amp; transformer etc. and check all the parameters of the same as per operation &amp; maintenance schedule and standards and also with the satisfaction of the HDC representatives.</p> <p>6.30. The Contractor shall arrange training for the technical staff of HDC for operation &amp; maintenance of D.G. set, all HT Switchgear &amp; transformer. The training should included AMF panel operation on both the mode i.e. Auto/manual start of DG set immediately during failure of power supply &amp; malfunctioning of AMF panel including important check list.</p> <p>6.31 The Contractor shall complete the preventive maintenance activity as per schedule and shall record in register with sign of appropriate authority of HDC and the Contractor.</p> <p>6.32. Payment shall be made on quarterly basis during Defect Liability Period, as well as during COMC period. However, the Contractor shall submit the records showing availability and maintenance report, along with the bills.</p>
19	46	D. 6.33	<p>The Contractor shall ensure 99% availability of the D.G. set on each quarter during Defect Liability Period, as well as during CMC period, failing which 1% of the quarterly bill value would be deducted from the quarterly running bills.</p>	<ul style="list-style-type: none"> <li>The Contractor shall ensure 99% availability of the D.G. set on each quarter during Defect Liability Period, as well as during COMC period, failing which 1% of the quarterly bill value would be deducted from the quarterly running bills and utilization of the DG will be 30 to 40% .</li> </ul>

				<ul style="list-style-type: none"> <li>The contractor shall carry out O&amp;M of the complete installation of main Sub-station including DG Set, transformer &amp; all HT Switchgear in machine houses, Impounding pump house etc. on round the clock basis with necessary manning for the period of 5 years after 2 year Guarantee period including all maintenance spares excluding Fuel.</li> </ul>
20	47	General d) 2 <sup>nd</sup> sentence	The panels shall conform to IS: 8623/1993.	The switchgear panels should be compliant to IEC 62271-200. And should be classified as IAC 26.3ka/1 sec, AFLR. Switchgear panels should be complete with factory fitted arc duct for evacuation of hot gases / plasma in the event of an internal arc flash. The offered VCB should be as per IEC 62271-100 and tested for E2, M2, C2 duty cycles.
21	47	G.f)(2 <sup>nd</sup> sentence)	The terminal shall be protected against finger contact to IP20 degree of protection.	The terminal shall be protected against finger contact to IP2X degree of protection.
22	47	G.g)(in full)	Breaker shall have LCD display to show the metering and protection parameters.	Relay shall have LED display to show the metering and protection parameters. All the HT Panel connected at various locations in the Lock Gate shall be connected in the main substation with necessary cabling arrangement with LED display.
23	50	6.38 (2 <sup>nd</sup> point of para-1)	Transient surge produced by one CB due to severe chopping during rapid interruptions of inductive current e.g motors, shall be within limits allowable for overhauled motors according to IEC34 part 1 otherwise suitable surge absorber shall be provided.	Motor Feeder should have Surge Arrestor to protect Motor against switching surge.
24	50	6.38(1 <sup>st</sup> bullet of para-1 2 <sup>nd</sup> point)	The controls, indicating lamps, relays and meters shall be mounted on separate control & relay panel.	The controls, indicating lamps, relays and meters shall be mounted on LT compartment above VCB panel.
25	52	6.45(1 <sup>st</sup> sentence of 1 <sup>st</sup> bullet)	Power buses shall be of EC grade aluminium alloy equivalent to E91E WP as per IS-5082-1981 .	Power buses of switchgear shall be Copper, heat shrinkable PVC sleeved/ powder coated with colour code. The busbars shall be of high conductive electrolyte copper.

26	53	6.45 (4 <sup>th</sup> bullet)	Design ambient temperature shall be 50oC & final operating temperature under continuous operation in enclosure limited to 90oC. By thermometer method	Design ambient temperature shall be type tested at 50 deg C and end temperature will be considered as per IEC 62271-200.
27	56	6.50(1 <sup>st</sup> sentence of 1 <sup>st</sup> bullet)	Separate sets of current transformers shall be used for differential protection and separate cores shall be used for, over current protection and measurement purposes.	Current transformers shall be used for over current protection and measurement purpose.
28	56	6.51(1 <sup>st</sup> bullet)	Fixed type bus PT shall be used for voltage metering in panel except incomer panel.	Line PT to be considered.
29	56	6.52 (1 <sup>st</sup> bullet)	Relays shall be microprocessor based and communicable type. Protocol for communication shall be IEC 61850	<p>Relays shall be microprocessor based and communicable type. Protocol for communication shall conform to IEC 61850 amended up to date which cater the following functions :</p> <ul style="list-style-type: none"> <li>• The relay must support IEC 61850 Edition 1 and Edition 2.</li> <li>• The relay must support, besides IEC 61850, simultaneous communication using one of the following communication protocols: Modbus® (RTU-ASCII/TCP), IEC 60870-5-103 or DNP3 (serial/TCP).</li> <li>• The relay must have an ethernet port (RJ45) on the front for local parametrization and data retrieval.</li> <li>• The relay must have two fiber-optic Ethernet ports with HSR and PRP-1.</li> <li>• The relay shall have a third ethernet port for providing connectivity of any other Ethernet device to an IEC 61850 station bus inside a switchgear bay.</li> <li>• The relay must support IEC 61850 GOOSE messaging</li> </ul>

				<p>and meet the performance requirements for tripping applications (&lt;10ms) as defined by the IEC 61850 standard.</p> <p>SCADA to be provided in the main substation with all accessories considering HT Panel in substation including machine houses, impounding pump house. Also to provide mobile app minimum 3(three) connection.</p>
30	57	6.55 (1 <sup>st</sup> bullet)	Either integral earthing switch or a separate earthing switch shall be provided to facilitate earthing of busbars and any feeder circuit.	Plate earthing shall be provided as per IER standard. Switchgear should be supplied with Earthing switch (cable side) with fault making type.
31	59	6.61(4 <sup>th</sup> bullet)	Degree of protection shall be IP5X	Degree of protection shall be IP4X
32	59	6.61(5 <sup>th</sup> bullet)	Assembled on base channel of structural steel ISMC 75 painted black.	To be deleted
33	60	6.62	Approved make : 1. VCB-ABB/SIEMENS/SCHNEIDER 2. Numerical Relay- ABB/SIEMENS/SCHNEIDER	Approved make : 1. VCB-ABB/SIEMENS 2. Numerical Relay- ABB/SIEMENS
34	60	6.65(A)	The HT Panel should be SCADA compatible of latest model, with basic insulation level (BIL) 95kVp /38 kV.	The HT Panel should be SCADA compatible of latest model, with basic insulation level (BIL) 28kV/75kVp.
35	60	6.65(A) a (1 <sup>st</sup> sentence )	The switchgear shall be metal clad, floor mounted, vertical isolation & horizontally drawout type. Enclosure shall be conform to the Degree of protection IP-52 as per IEC 60529	Switchboard shall be metal clad, floor mounted with horizontal draw out and horizontal isolation. . Enclosure shall be conform to the degree of protection IP-4x as per IEC 62271-200
36	60	6.65(A) b (1 <sup>st</sup> sentence )	The incoming & outgoing cable shall be terminated through CBCT of suitable size	All feeders should have CBCT connection for 3C cable connection



37	61	6.65(A) g(1 <sup>st</sup> sentence )	Each cubicle shall be separated from adjacent one by sheet steel barrier and bus sealing arrangement.	Each cubicle shall be separated from adjacent one by sheet steel barrier busbar shall be continuous through out the panel with insulator support.
38	61	6.65(B) (1 <sup>st</sup> sentence )	This includes supply at site, Vacuum Circuit Breaker, suitable for 3.3KV, 25KA, 1250A, 500MVA, 3 Phase, 50 HZ effectively earthed	This includes supply at site, Vacuum Circuit Breaker, suitable for 3.3KV, 26.3KA, 1250A, 300MVA, 3 Phase, 50 HZ effectively earthed.
39	60	6.65 A) 2 <sup>nd</sup> sentenc e of 1 <sup>st</sup> para	Panel manufactured by OEM (Original Equipment Manufacturer) only is acceptable	VCB , Switchgear & protective relay should be of same manufacture. Inhouse manufacturing of VCB & Switchgear Assembly panel by the manufacturer only is acceptable.
40	62	6.65(B) II(XVI)	<u>Incoming feeder (with PT)</u> Numerical relays consist of IDMTL + Inst 3 O/C + Inst E/F relay.	Numerical relays consist of IDMTL + Inst 3 O/C + Inst E/F relay. Lock S/s Incomer shall have U/V (27) and O/V (59) protection function also. CBCT to be included in Incomer feeder items.
41	63	6.65(C) (1 <sup>st</sup> sentence	<u>Outgoing feeder (Without PT)</u> Technical Specification same as Incoming feeder but without PT	Technical Specification same as Incoming feeder but without PT, TVM, U/V function. CBCT to be included in Outgoing feeder items.
42	63	6.65(D) (1 <sup>st</sup> sentence	<u>Outgoing feeder (Motor feeder)</u> Technical Specification same as Incoming feeder but without PT	Technical Specification same as Incoming feeder with TVM but without PT, U/V function. TVM shall be communicable type. CBCT & Surge Arrestor to be included in outgoing feeder (Motor feeder) items. Motor protection relay shall conform to IEC 61850 compatible which caters to the following functions : <ul style="list-style-type: none"> <li>• Three-phase non-directional overcurrent protection, 2 stages.</li> <li>• Non-directional earth-fault protection, 2 stages</li> <li>• Negative-sequence overcurrent protection for motors</li> </ul>

				<ul style="list-style-type: none"> <li>• Loss of load supervision</li> <li>• Motor load jam protection</li> <li>• Motor start-up supervision</li> <li>• Phase reversal protection</li> <li>• Thermal overload protection for motors</li> <li>• Circuit breaker failure protection</li> </ul>
43	63	6.65(E) (1 <sup>st</sup> sentence)	<u>Incoming feeder (Generator feeder)</u> Technical Specification same as Incoming feeder with PT Numerical relay-SIEMENS –SIPROTEC 7UM512 or ABB – RG630 shall be provided	Technical Specification same as Incoming feeder but without TVM, U/V function
44	64	After 6.5 (E)		<p>To be added as 6.65 (F) :</p> <p><b>3.3 KV HT Bus for DG Supply :</b></p> <p>The 1010 KVA 3.3 KV to be installed in the proposed location near main substation of Lock Gate. The 3.3 KV DG connected with the bus consists of NGR, DG breaker &amp; Outgoing breaker which is connected to main substation DG breaker of 3.3 KV.</p>
45	70	After 6.72		<p>To be added as 6.73</p> <p>The switchgear panel shall have following safety features:</p> <ol style="list-style-type: none"> <li>1. HT Switchgear Panel shall be type tested for Internal Arc 26.3 kA / 1 Second for AFLR-PM with loss of service continuity – LSC (2B).</li> <li>2. Enhanced operator's safety with touch proof dead-front execution with all operations behind closed door.</li> <li>3. Positive Interlocks between all drives, doors, and covers to nullify chances of any faulty operations.</li> <li>4. Breaker Position interlocking with LOTO system shall enhance safety practice and prevent unauthorised access during maintenance.</li> <li>5. Additionally, Remote Control Panel shall be provided</li> </ol>

				<p>for Tripping &amp; Closing operation of Circuit Breaker from remote location.</p> <p>6. All numerical relay shall have Arc flash protection features to trip the system during arcing in order to minimise the damage of the switchgear panel and isolate the defective feeder at the first instance.</p> <p>7. Switchgear shall be tested for Zone V seismic duty.</p> <p>8. Switchgear shall be Light based arc sensing feature for early detection of internal flashover and subsequent removal tripping of circuit breaker. This arc sensing feature may be offered by an independent relay or integrated in the offered IED.</p>
46	122	SCC 7.20.1 ii)	Performance Guarantee / Security Deposit for the 05 years Comprehensive Maintenance Contract (CMC), as a whole	Performance Guarantee / Security Deposit for the 05 years Comprehensive Operation & Maintenance Contract (COMC), as a whole:
47	123	Scc 7.20.11 ii)	<p>10 % of CMC value ( for 05 years , after expiry of Defect Liability Period] excluding GST.</p> <p>Performance Guarantee / Security Deposit for the 05 years Comprehensive Maintenance Contract (CMC), as a whole:</p>	<p>10 % of COMC value ( for 05 years , after expiry of Defect Liability Period] excluding GST.</p> <p>Performance Guarantee / Security Deposit for the 05 years Comprehensive Operation &amp; Maintenance Contract (COMC), as a whole:</p>
48	126	SCC 7.65.1 2nd para	<p>Maintenance Period :</p> <p>Maintenance Period shall start from the date of taking over the Contract job [as per GCC (Taking over of the Contract job by KoPT)] and will continue till expiry of Comprehensive Maintenance Period of 05 years, calculated from the date of expiry of the "Defect Liability Period".</p>	<p>Operation &amp; Maintenance Period :</p> <p>Operation &amp; Maintenance Period shall start from the date of taking over the Contract job [as per GCC (Taking over of the Contract job by KoPT)] and will continue till expiry of Comprehensive Operation &amp; Maintenance Period of 05 years, calculated from the date of expiry of the "Defect Liability Period".</p>
49	127		c) Against Maintenance: Payment shall be made on quarterly basis during Comprehensive Maintenance Contract (CMC) Period of 05 years.	c) Against Operation & Maintenance: Payment shall be made on quarterly basis during Comprehensive Operation & Maintenance Contract (COMC) Period of 05 years.
50	138-142	Bidding form - VI	Price Schedule	Revised price schedule. (attached)

## **REVISED PRICE SCHEDULE**

### Part-A

Sl. No	Description of the work	Unit	Qty	Applicable GST %		
				SGST	CGST	IGST
1	Supply & Installation of outdoor type 3.3 kV, 1500 r.p.m., 3 Phase, 50Hz , 1010 kVA acoustic enclosure Diesel Generator Set complete with all accessories including power pack (battery + charger) as detailed in 'Technical Specification'.					
	a) Supply	Set	1			
	b) Installation, Testing & Commissioning	Set	1			
2	Supply & Installation of Microprocessor / PLC based Auto mains failure panel with distribution cubicle switchboard, including all accessories, as detailed in 'Technical Specification'.					
	a) Supply	Set	1			
	b) Installation, Testing & Commissioning	Set	1			
3	Supply & Laying of HT 3.3KV (UE) grade 3C X 240 mm <sup>2</sup> , PVC insulated XLPE, Aluminium armoured type Power Cable [from DG Set to Auto mains failure panel without VCB and Auto mains failure panel without VCB to Load distribution panel ( VCB )], as detailed in 'Technical Specification'.					
	a) Supply	m	100			
	b) Laying, Testing & Commissioning	m	100			
4	Supply & Installation of HT 3.3 kV Heat shrinkable type end termination kits suitable for 3.3KV (UE) grade 3C X 240 mm <sup>2</sup> , PVC insulated XLPE, Aluminium armoured type Power Cable.					
	a) Supply	No	4			
	b) End termination, Testing & Commissioning	No	4			
5	Supply & Installation of Control cable (XLPE, 1.1 kV grade, PVC insulated copper armoured cable) with terminations for the said cable.					

Sl. No	Description of the work	Unit	Qty	Applicable GST %		
				SGST	CGST	IGST
	a) Supply					
	i) 4C X 2.5 mm2	m	50			
	ii) 24C X 2.5 mm2	m	50			
	iii) 2C X 2.5 mm2	m	50			
	iv) 2C X 4 mm2	m	50			
	b) Laying, Testing & Commissioning					
	i) 4C X 2.5 mm2	m	50			
	ii) 24C X 2.5 mm2	m	50			
	iii) 2C X 2.5 mm2	m	50			
	iv) 2C X 4 mm2	m	50			
6	Making of suitable civil (RCC) foundation with base frame for installation of acoustic enclosure ( with 1010 kVA D.G. set ) , including construct of uniform platform, as detailed in 'Technical Specification'.	LS	1			
7	Supply & Installation of 24 V DC Battery Bank (including connection leads), Battery charger unit & 24 V DCDB as per Technical Specification.					
	a) Supply	Set	5			
	b) Installation, Testing & Commissioning	Set	5			
8	Providing earthing system for the DG set, using size 600 mm X 600 mm X 3.15 mm Copper flat plate buried in ground in a depth of 2 m. from ground level with alternate layer of charcoal & salt, including supply & fixing of 40 mm dia perforated GI pipe funneling for watering purpose and construction of masonry pit with metal cover, as per IS: 3043 as detailed in 'Technical Specification'.					
	a) Supply	Set	2			
	b) Installation, Testing & Commissioning	Set	2			
9	Supply and Installation of Hot Dip Galvanized (100 micron) flats of size 50 mm X 6 mm for earthing					

Sl. No	Description of the work	Unit	Qty	Applicable GST %		
				SGST	CGST	IGST
	connections, as per Technical specification.					
	a) Supply	m	100			
	b) Installation, Testing & Commissioning	m	100			
Total amount of Part - A						

### PART : B

Sl. No.	Description of the work	Unit	Qty	Applicable GST %		
				SGST	CGST	IGST
1	Supply & Installation of HT 3.3 kV, 1250 A, 26.3 kA Vacuum Circuit Breaker (VCB) panel , as per the details given in TABLE - I and Clause No. 6.65 (F) of "Technical Specification"					
	a) Supply					
	For DG Set with NGR	Set	2			
	For Lock Substation	Set	13			
	For Machinery House, MH-1 [outer]	Set	4			
	For Machinery House, MH-2 [intermediate]	Set	4			
	For Machinery House, MH-3 [ inner ]	Set	5			
	For Impounding Pump House	Set	5			
	b) Installation, Testing & Commissioning					
	For Lock Substation (with 13 nos. VCB)	Set	13			
	For Machinery House, MH-1 [outer]	Set	4			
	For Machinery House, MH-2 [intermediate]	Set	4			

Sl. No.	Description of the work	Unit	Qty	Applicable GST %		
				SGST	CGST	IGST
	For Machinery House, MH-3 [ inner ]	Set	5			
	For Impounding Pump House	Set	5			
2	Supply & Laying of HT 3.3 kV Grade aluminum conductor, armoured XLPE UG cable as IS : 7098 Part – II and as per Technical Specification.					
	a) Supply					
	i) 3C x 185 mm <sup>2</sup>	m	500			
	ii) 3C x 95 mm <sup>2</sup>	m	500			
	b) Laying, Testing and Commissioning of					
	i) 3C x 185 mm <sup>2</sup>	m	500			
	ii) 3C x 95 mm <sup>2</sup>	m	500			
3	Supply & Installation of HT 3.3 kV Heat shrinkable type end termination kits suitable for aluminum, XLPE / PVC armoured UG cable.					
	a) Supply					
	i) 3C X 400 mm <sup>2</sup>	No	4			
	ii) 3C X 240 mm <sup>2</sup>	No	1			
	iii) 3C X 150 mm <sup>2</sup>	No	3			
	iv) 3C X 120 mm <sup>2</sup>	No	2			
	v) 3C X 95 mm <sup>2</sup>	No	8			
	End termination, Testing & Commissioning					
	i) 3C X 400 mm <sup>2</sup>	No	4			

Sl. No.	Description of the work	Unit	Qty	Applicable GST %		
				SGST	CGST	IGST
	ii ) 3C X 240 mm2	No	1			
	iii ) 3C X 150 mm2	No	3			
	iv ) 3C X 120 mm2	No	2			
	v ) 3C X 95 mm2	No	8			
4	Providing earthing system for the 3.3 kV panel , using size 600 mm X 600 mm X 3.15 mm Copper flat plate buried in ground in a depth of 2 m. from ground level with alternate layer of charcoal & salt, including supply & fixing of 40 mm dia perforated GI pipe funneling for watering purpose and construction of masonry pit with metal cover, as per IS: 3043 as detailed in 'Technical Specification'.					
	a) Supply	Set	8			
	b) Installation, Testing & Commissioning	Set	8			
5	Supply and Installation of Hot Dip Galvanized (100 micron) flats of size 50 X 6 mm for earthing connections, as per Technical specification.					
	a) Supply	m	300			
	b) Installation, Testing & Commissioning	m	300			
6	Supply & installation of safety equipments like HT (3.3 kV grade) rubber mats, CO2 fire extinguishers, First Aid box, etc. as per CEA norms, for all substations.	Set	01			
7	Special tool box (Taparia Make) for maintenance of VCB Panels .	Set	01			
8	Removal / dismantling, loading / unloading, transporting of existing BOCBs (21 nos.) & isolators 06 (nos) and depositing the same at the store of HDC.	LS	01			
Total amount of Part - B						



**PART-C**

Sl. No.	Description of the work	Unit	Qty	Applicable GST %		
				SGST	CGST	IGST
1.	Comprehensive Operation & Maintenance Contract (COMC) of the installation of main Sub-station including DG Set, transformer & all HT Switchgear in machine houses, Impounding pump house etc on round the clock basis with full responsibility of necessary manning and carrying out repair & supply of required original spare parts/spares excluding Fuel to keep the DG set & HT installations in fully operational condition for a period of 5 years, after expiry of 2 years Guarantee period.					
a)	1st year guarantee period	LS	1			
b)	2nd year guarantee period	LS	1			
c)	1st year COMC	LS	1			
d)	2nd year COMC	LS	1			
e)	3rd year COMC	LS	1			
f)	4th year COMC	LS	1			
g)	5th year COMC	LS	1			
Total amount of Part - C						
Net Total = Total of (Part-A) + (Part – B) + (Part – C)						

**Clarifications & comments of HDC, KoPT.**

**Queries/Observations/Suggestions/Requests for clarification of the prospective bidders and clarifications/comments of HDC, KoPT with respect to  
Pre-bid meeting held on 18.06.2019.**

**Subject:**

**Tender No. SDM (P&E) / T/45 / 2019-20 [e-Tender No. KoPT/Haldia Dock Complex/P&E Div/8/19-20/ET/27 dated: June 10, 2019] for "Supply, Installation, testing & Commissioning of Outdoor type 1010 KVA Diesel Generator Set with AMF Panel including Comprehensive maintenance contract for the period of 5 years after expiry of 2 years guarantee period and Supply, Installation, testing & Commissioning of 31 nos. indoor type HT Panel of 3.3 KV, 1250 Amps, 3 Phase, 50 Hz, 25 KA VCB for 3sec. for Lock Entrance at Haldia Dock Complex, KoPT"**

Sl no	Clause No	Page No	Requirement as per the bidding documents	Queries/Observations/Suggestions/Requests for clarification	Clarifications/Comments of HDC, KoPT
1	6.2	34	VCB & MCCB :-L&T / Siemens / Schneider / ABB	VCB & MCCB make list to be separated. VCB approved make List will be ABB/SIEMENS/SCHNEIDER as per clause no 6.62 (Page 60). VCB & Panel manufacturer shall be same OEM	Please refer addendum - 1
2	G(f)	47	The switchgear housing shall be heat resistant and having high impact strength. The terminal shall be protected against finger contact to IP20 degree of protection	Terminal shall be protected against finger contact by IP2X degree of protection	Please refer addendum - 1
3	G(g)	47	Breaker shall have LCD display to show the metering and protection parameters.	Relay shall have LCD display to show the metering and protection parameters. Breaker don't have metering & protection function and hence no LCD Display comes for VCB.	Please refer addendum - 1

4	6.38	50	Transient surge produced by one CB due to severe chopping during rapid interruptions of inductive current e.g motors, shall be within limits allowable for overhauled motors according to IEC34 part 1 otherwise suitable surge absorber shall be provided.	Motor Feeder should have compulsorily Surge Arrestor to protect Motor against switching surge.	Please refer addendum - 1
5	6.38	50	The controls, indicating lamps, relays and meters shall be mounted on separate control & relay panel.	Meter & Relay will be mounted on separate LT compartment above VCB panel. NO separate stand alone control & relay panel will be required	Please refer addendum - 1
6	6.45	53	Design ambient temperature shall be 50oC & final operating temperature under continuous operation in enclosure limited to 90oC. by thermometer method	Ambient Temperature will be 50 deg C and end temperature will be 90 deg C for AL bus bar	Please refer addendum - 1
7	6.50	56	Separate sets of current transformers shall be used for differential protection and separate cores shall be used for, over current protection and measurement purposes.	As per discussion during pre-bid meeting, Differential Core not required since outgoing transformer rating is <5MVA and Lock S/s Incomer is fed from other panel outgoing feeder with no existing line differential protection. Point needs to be omitted.	Please refer addendum - 1
8	6.52	56	Relays shall be Microprocessor based numerical and communicable type. Protocol for communication shall be IEC 61850	As per discussion during pre-bid meeting, SCADA is not included in the package. Hence relay can be communicable through MODBUS protocol which will be also SCADA compatible.	Tender conditions prevail.
9	6.51	56	Fixed type bus PT shall be used for voltage metering in panel except incomer panel.	As per discussion during pre-bid meeting, Bus-PT is not required. Only Line PT to be considered.	Please refer addendum - 1

10	6.61	59	Degree of protection shall be IP5X	Degree of protection shall be IP4X	Please refer addendum - 1
11	6.61	59	Assembled on base channel of structural steel ISMC 75 painted black.	Integral Base Frame not applicable for HT panel Supply. Base Frame drawing will be provided before erection at site	Please refer addendum - 1
12	6.65(A)	60	The HT Panel should be SCADA compatible of latest model, with basic insulation level (BIL) 95kVp /38 kV.	HT panel will have BIL 28kV/75kVp which is standard for 11kV switchboard.	Please refer addendum - 1
13	"6.65(A) a	60	The switchgear shall be metal clad, floor mounted, vertical isolation & horizontally drawout type. Enclosure shall be conform to the Degree of protection IP-52 as per IEC 60529	Switchboard will be horizontal isolation. Degree of protection IP-4x as per IEC 62271-200	Please refer addendum - 1
14	6.65(A) b	60	The incoming & outgoing cable shall be terminated through CBCT of suitable size	All feeders should have CBCT connection for 3C cable connection	Please refer addendum - 1
15	6.65(A) g	61	Each cubicle shall be separated from adjacent one by sheet steel barrier and bus sealing arrangement. Bus connection from Main busbar compartment to Individual breaker compartment and cable compartment and adjacent feeders/ panels shall be through resin cast bushing assembly	Busbar will be continuous through the panel with insulator support. Bus sealing can't be provided.	Please refer addendum - 1

16	"6.65(B)	61	This includes supply at site, Vacuum Circuit Breaker, suitable for 3.3KV, 25KA, 1250A, 500MVA, 3 Phase, 50 HZ effectively earthed	Switchboard shall have capacity of 3.3kV, 1250A, 150MVA rating	Please refer addendum - 1
17	6.65(B) II(VI)	62	Busbar chamber with Copper busbars, heat shrinkable PVC sleeved/ powder coated with colour code. The busbars shall be of high conductive electrolyte copper.	Busbar of switchboard will be Aluminium as per clause 6.45	Please refer addendum - 1
18	6.65(B) II(XVI)	62	Numerical relays consist of IDMTL + Inst 3 O/C + Inst E/F relay.	As per discussion during pre-bid meeting, Lock S/s Incomer shall have U/V (27) protection function also. CBCT to be included in Incomer feeder items	Please refer addendum - 1
19	6.65(C)	63	Technical Specification same as Incoming feeder but without PT	As per discussion during pre-bid meeting, "Technical Specification same as Incoming feeder but without PT, TVM,U/V function CBCT to be included in list	Please refer addendum - 1
20	6.65(D)	63	Technical Specification same as Incoming feeder but without PT	As per discussion during pre-bid meeting, "Technical Specification same as Incoming feeder but without PT, TVM,U/V function CBCT & Surge Arrestor to be included in list	Please refer addendum - 1
21	6.65(E)	63	Technical Specification same as Incoming feeder with PT Numerical relay-SIEMENS – SIPROTEC 7UM512 or ABB –RG630 shall be provide	As per discussion during pre-bid meeting, "Technical Specification same as Incoming feeder but without TVM,U/V function Numerical Relay make:- SIEMENS/ABB/SCHNIDER	Please refer addendum - 1

22	General			<p>24V DC external supply shall be provided by client through suitable rated DC Battery &amp; Charger in all location</p> <p>Cable size shall be 1x3Cx400 sq mm maximum to accomidate CBCT in I/C feeders. 1C Cable to be avoided</p>	Please refer addendum - 1
23	General			<p>After visiting all the sites it is found that the existing location is close to sea side which leads to extreme weather condition due to high moisture, dust (close ton CHP) &amp; saline atmosphere.</p> <p>Since HPT will be taking new switchboard in replacement of 50 years old GEC/BHEL/CGL breaker hence more advanced reliable switchgear which will have less effect due to adverse atmosphere, less maintenance required &amp; longer life cycle compared to AIS standard panels to be considered. We are proposing 11kV GIS with solid insulated busbar instead of AIS panel in Lock Sub-station.</p>	Tender conditions prevail. GIS Not acceptable.
24	6.2	34	Approved Make - Engine	<p>Kindly approve the make of the engine as " Sterling-Perkins " and mention the same in the list of approved makes. We have already submitted our request letter for approving " STERLING - Perkins " engine along with the required credentials.</p> <p>PERKINS - Engine is from CATER PILLAR only and more than 9,00,000 PERKINS Engines are used for Electric Power generation.</p>	Please refer addendum - 1

25	6.2	34	Approved Make - Panel	VCB & MCCB make list is to be separated.. The components of the panel will be as per the approved makes only. Please consider the make of the panel as the Sytem integrator of ABB / SIEMENS/ SCHNEIDER. Kindly approve STERLING Generator as a make of panel.	Please refer addendum - 1
26	6.3	34	Diesel Engine	The BHP and the no of cylinders for a particular engine depends on the Engine manufacturer's design. Perkins confirms less running & maintenance expenses due less No of Cylinders for developing required BHP (8 Cylinders , Gross - 1205 BHP). So Kindly consider and mention STERLING - PERKINS name.	Please refer addendum - 1
27	6.5	36	Control Panel	Since the DG Set has a voltage level of 3.3 kV, MCCB for overload and short circuit will not be applicable.	Please refer addendum - 1
28	6.7	38	Acoustic Enclosure	As per CPCB norms, for DG Sets of capacity 1010 kVA and above, there will be an insertion loss of 25 dB at 1 mtr distance from Canopy. The paint shade of the Acoustic Enclosure will be signal white (RAL-9003) and this is as per DG Set manufacturer's standard.	Please refer addendum - 1
29	6.9	39	Auto Mains Failure Panel	Please provide an SLD of the panel enabling us to offer exactly as per your system requirement.	Please refer addendum - 1
30	6.14	42	Fuel System	PT fuel system is the technology for Cummins engine only. The fuel system of the engine will be as per engine manufacturer's standard. Water in fuel sensor is not provided and the same is as per engine manufacturer's standard.	Please refer addendum - 1

31	6.25 - 6.33	46	Maintenance	Please confirm the approximate running hours of the DG set per year enabling us to submit our offer for maintenance of the DG set. 99% availability of the DG set can be guaranteed by us if operation and maintenance of the dg set is in our scope. As discussed during the meeting, we will be considering 500 running hours for the DG Set in a year. Kindly confirm. Please confirm the exact scope of work under maintenance work during DLP and CMC period.	Please refer addendum - 1
32		BOQ	Foundation	Please note to change the dimensions of the DG Set foundation as per requirement. Construction of Civil foundation will be excluded from our scope of supply. Kindly confirm.	Please refer addendum– 1 Necessary construction of civil foundation of DG set shall be under the scope of the contactor.
33		BOQ	Battery Bank	Since the VCB panels will be located at 5 different locations, so 5 battery banks are required. We will be providing 24 Volts battery Bank. Kindly confirm the Ah capacity of the 5 battery banks. Kindly also provide us the details of the DCDB required.	Please refer addendum - 1
34		BOQ	Exhaust System	As per CPCB rules, Exhaust Pipe height will be 30M and its proper support is also to be considered. In case there is no provision is possible to provide support to the Exhaust Pipes , then Self supported MS structure for providing support to this 30 M Exhaust Pipe is to be considered. Civil Foundation area of the Self supported Steel Structure is also to be considered by HDC with an approx area of 3M x 3M nearer to the DG Set Foundation. All types of Civil work will be excluded from our scope of supply. Please confirm.	All piping and supporting civil foundation shall be under scope of contactor.



35		BOQ	NGR & NIS	Since this is a 3.3 kV DG Set, we recommend to use NGR and NIS Panel for earthing the DG Sets. Please confirm.	Please refer addendum – 1 As per manufacture standard's.
36		BOQ	Testing at site	The DG Sets can be tested at site free of cost during commissioning if fuel and electrical load as available at site is provided by Customer. Kindly confirm.	Fuel & electrical load shall be under scope of HDC.
37		BOQ	Approval	We will submit all necessary documents for obtaining approval (Electrical + PCB) of running the DG Sets from the concerned authority. Obtaining the approval will be in Customer's scope. Kindly confirm.	If required HDC will engage CEA.
38				We request to provide us free issue of Mobile Crane, which will be required during installation of the DG Set. Kindly confirm.	Mobile crane may be provided on chargeable basis.
39			Rating of DG Set	As per your requirement, we will be offering 1010 kVA, 3.3 kV Prime rated (As per ISO - 8528), radiator cooled STERLING DG Sets. This rating is applicable for supplying continuous electrical power (at variable load) in lieu of commercially purchased power for unlimited number of hours with an average load factor of 80%. Please confirm	Engine & alternator shall be as per approved make.
40	6.47	54	Control Terminations	Overall 20% spare terminal will be provided subject to space availability.	Tender conditions prevail.

41	6.49	55	Electrical Protection	The model number of the relays will be as per manufacturer's standard. Please confirm	Tender conditions prevail.
42	6.55	57	Earthing Devices	We will be providing only Earthing truck and no earthing switch will be provided. The Earthing Truck will be non fault making type.	Please refer addendum-1
43	6.59	58	Protective Earthing	Vertical earth Bus for earthing individual functional units	Tender conditions prevail.
44			Extension.	Based on the various technicalities involved in preparation of the tender, we request you to extend the due date of tender for 2 weeks i.e. upto 18.07.19	As per provision 15 days shall be given from the date of uploading of pre bid quarries.

