

DEENDAYAL PORT AUTHORITY

An ISO 9001:2008 & ISO 14001:2004 Certified Port

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Office of the Executive Engineer (E)
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No.: EL/AC/___/___

Date: 07/07/2023

EXPRESSION OF INTEREST

(This Notice is issued only to elicit Expression of Interest from the parties interested in the work and does not constitute any binding commitment from the Deendayal Port Trust to proceed with the work or invite any or all the parties in the subsequent bidding process. The Open Tenders will be issued subsequently)

To,

_____.

Sub: "EOI for Pilot project of implementation of SCADA System at 66/11kV Substation Kandla including all the required Hardware, Software and system integration."

Sir,

Executive Engineer (Electrical), DPA invites Expression of Interest for the work of "Pilot project of implementation of SCADA System at 66/11kV Substation Kandla including all the required Hardware, Software and system integration" from the reputed firms from those who have executed similar work in Government/public sectors and other leading private organizations. The Expression of Interest (EOI) documents containing details of Scope of Work and technical specifications are enclosed herewith.

The Expression of Interest should reach to this office on or before 17/07/2023.

Sd/-

Executive Engineer (E)
Deendayal Port Authority

Name of Work: "Pilot project of implementation of SCADA System at 66/11kV Substation Kandla including all the required Hardware, Software and system integration".

Sr NO	Description	Qty	Unit	Per Unit Rate in INR	Total Price
1	Supply, Installation, Testing and Commissioning of Energy Monitoring Software with Unlimited Tag with minimum USB License Key for 39 Energy Meters & 36 IDMT Relays, software development and system Integration as per technical specification no. 1	1	Complete Job		
2	Supply, Installation, Testing and Commissioning of RS-485 port to Ethernet Converter of minimum 5 nos. and Ethernet Switch of 1 no. as per technical specification no. 2	1	Complete Job		
3	Supply, Installation, Testing and Commissioning of PLC panel for breaker controlling as per technical specification no. 3	1	Complete Job		
4	Supply, installation, testing and commissioning of 9 nos. Multifunction energy meters with CT as per technical specification no. 4	1	Complete job		
5	Supply, Installation, Testing and Commissioning of Computer System for SCADA Core-i5 or latest, 8 GB RAM, 1 TB HDD, Windows - 11 & 22" HD LED Monitor. The system shall be provided with a 5 KVA UPS with one hour back up facility.	1	Complete Job		
GRAND TOTAL					

(In Words: Rupees (_____)

_____)

(NOTE: The rates should be inclusive of all taxes, duties, fees, cess etc. and all incidental charges; but exclusive of GST)

-s/d-

Signature & Seal
of Contractor

Executive Engineer (E)
Deendayal Port Authority

DETAILED SCOPE OF WORK

The scope of work includes Pilot project of implementation of SCADA System at 66/11kV Substation Kandla including all the required Hardware, Software and system integration.

The general scope of work will include:

- i. Designing of complete SCADA system at 66/11kV Substation, Kandla and relevant.
- ii. SCADA System supply, installation, testing and commissioning as per the submitted design after due approval of the design and system from Engineer-in-Charge Dindayal Port Authority.
- iii. The work includes all the manpower, tools and tackles, transport, etc. all in the scope of the contractor.
- iv. The work also includes necessary modification in the existing system at site, if necessary for SCADA system installation and it would be completely in the scope of the contractor without any additional cost. The contractor is advised to visit the site to envisage the requirements of modifications, if any.
- v. All the module cabinet housing, power and control cable supply, connection and laying, appropriate laying through the conduits, supply and installation of cable conduits, etc. All the necessary accessories and arrangements on the site is under the scope the scope of the contractor at no extra cost.

Technical Specification No. 1

Supply, Installation, Testing and Commissioning of Energy Monitoring Software With Unlimited Tag with minimum USB License Key for 36 Energy Meters & 36 IDMT Relay, 1 PLC for breaker controlling, software development and system Integration.

It also includes one License for one computer standalone system.

The software must be capable of representing (not limited to):

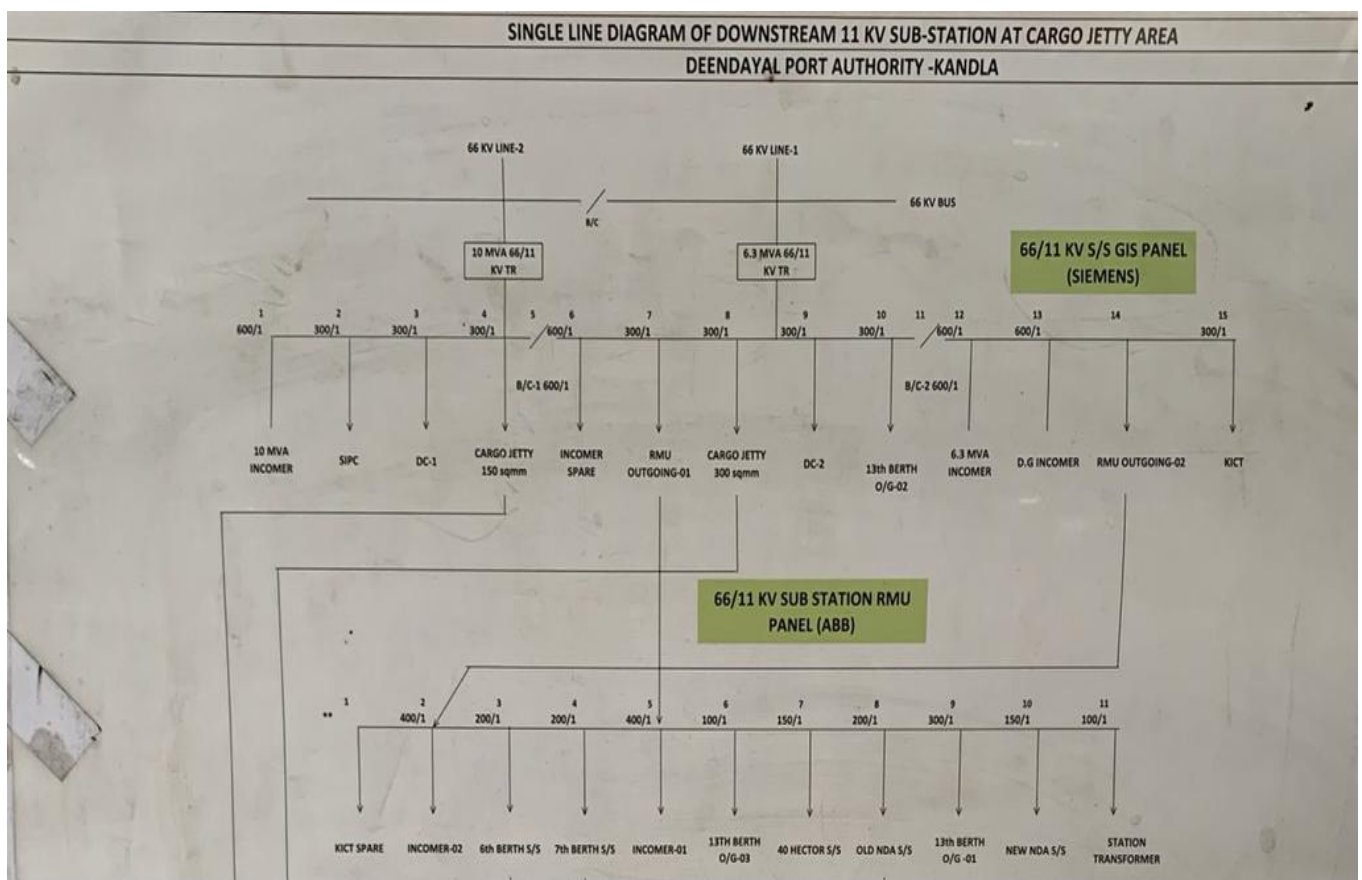
- Mimic Diagram, SLD Layout View
- Current & Historical Trends,
- Current & Historical Alarm,
- Reports(15Min/Hourly/Shift/Daily/Monthly/Yearly)

The general tentative (but not limited to) features of the Energy Monitoring software are as under:

- Comprehensive dashboard
- Interactive charts customize GUI
- Graphical Reporting
- Tabular Monitoring
- Automatic E-Mails
- Cloud storage

- Capable to work in static IP
- Capable to work in local
- Customize reports
- User authentication
- Automatic SMS alerts against set values of load and other parameter
- Accurate data.
- Automatic E-Mail of reports for MIS reporting.
- Machine Runtime and Downtime reports.

SLD - Single Line Diagram of 66/11kV Substation for reference (Actual SLD may vary)



This work includes all labour, tools & tackles as directed by Engineer in charge

Technical Specification No.2

Supply, Installation, Testing and Commissioning of RS485 port to Ethernet Converter -5 no. And Ethernet Switch – 1 no.

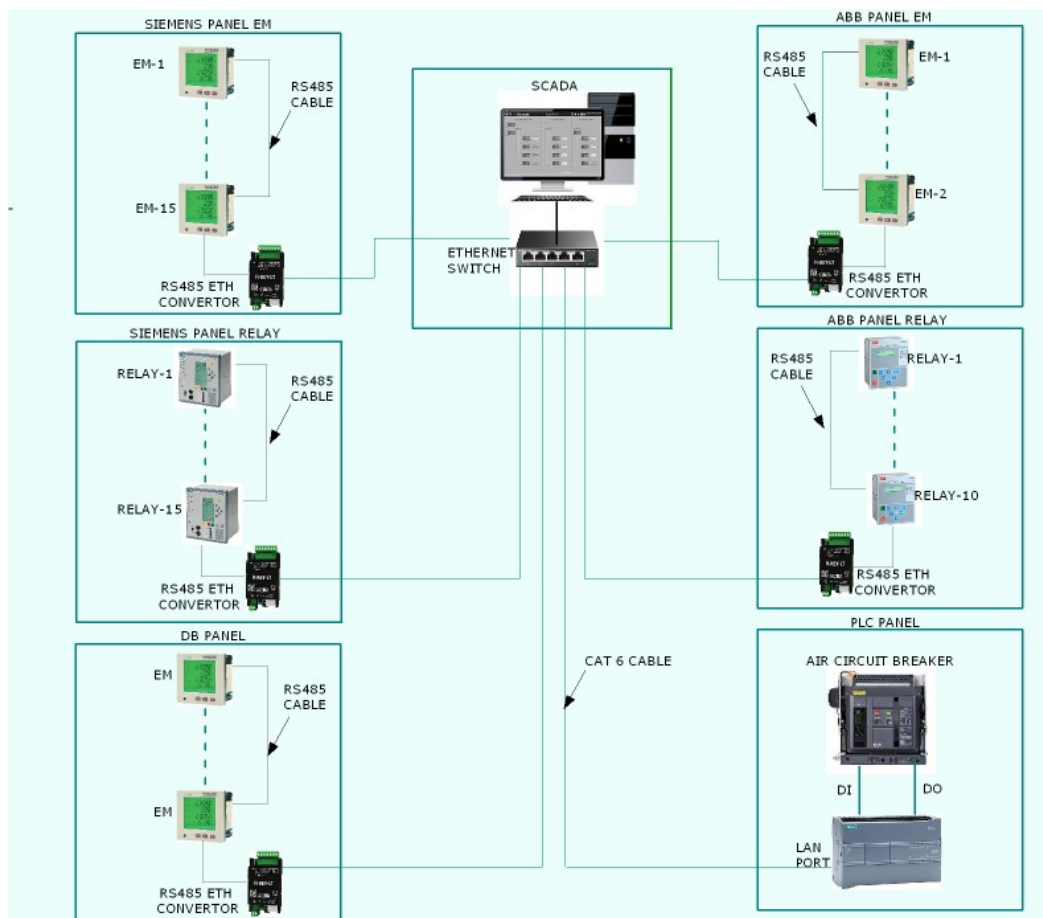
It also includes below LAN infrastructure

1. LAN IO
2. Patch cords

3. Patch Panel
4. Suitable size TV
5. HDMI cable
6. 7 U rack
7. CAT 6 cable
8. Converter Mounting BOX

This work includes all labour, tools & tackles as directed by Engineer in charge

Tentative Block Diagram of SCADA system (Actual Block Diagram may vary)



Technical Specification No.3

Supply, Installation, Testing and Commissioning (SITC) of PLC control panel for breaker controlling panel with suitable input & output for breaker controlling. Panel shall include suitable power supply with relay and other panel accessories.

The logic must include

1. Siemens relay communication with PLC and provide interlocks and per relay logic
2. PLC should be expandable and able to expand as much as possible
3. Implementing tripping logic as per binary input of relay

4. Implementing breaker close logic as per binary input/output of relay
5. The system shall have the facility to automatically trip on auto mode if any parameter exceeds the pre-defined limit.
6. The make of PLC shall be Siemens/ABB/Allen-Bradley

Technical Specification No 4

Supply, Installation, Testing and Commissioning of 9 Nos. of Multifunction meters along with Current Transformers (27 Nos.) of Rating 200-100/1-1, 2.5 VA, CLASS 0.5 for 11 KV RMU Output Feeder with below supporting materials.

1. Heat Shrink Indoor Termination 11 KV 3Cx240 mm² AL XLPE Make: 3M/Raychem
2. 2.5 mm² Wire, LUG, TIE, Spiral.
3. HT Cable 3Cx240 mm² End Termination.

Specification of Multifunction Meter shall display following parameter

- 1) Apparent power S, S1, S2, S3
- 2) Average current Iavg
- 3) Unbalance current
- 4) Power factor and displacement PF (signed, four quadrant)
- 5) Reactive power Q1, Q2
- 6) Active power P, P1, P2, P3 Active, reactive, apparent energy (signed, two quadrant)
- 7) Calculated neutral current
- 8) Phase currents

- Rated supply voltage 44...300 V AC 45...65 Hz
- Rated Current – 5A
- Accuracy class - Class 0.5 active energy conforming to IEC 62053-22
- Width 96 mm
- IP degree of protection IP51 front: conforming to IEC 60529
IP30 body: conforming to IEC 60529

The job includes complete removal of existing end termination and provide new end termination of 11 KV HT cable of 9 nos. of RMU, dismantling of existing protection CTs from 9 nos. of RMU feeder. After providing new end termination of 11 KV HT cable, again re-fixing of existing protection CTs & newly provided metering CTs in 9 nos. of RMU feeders. The work includes all required labours, tools & tackles and material as directed by Engineer In – Charge.

Technical Specification No 5

Supply, Installation, Testing and Commissioning (SITC) of Computer System with all the accessories for SCADA with Core-i5 or latest, 8 GB RAM, 1 TB HDD, Windows 11 & HD LED 22" Monitor, Colour Printer Scanner. This also includes SITC of lockable cabinet specifically designed to lock CPU, 5000 VA UPS with one hour back up facility and Printer. The computer shall be make of HP/DELL/LENOVO

This work includes all labour, tools & tackles as directed by Engineer in charge.

Note:

Expected Outcome of the SCADA System (but not limited to):

- The system should be capable of capturing, representing and storing various data related to the Electrical Systems like Voltage, Current, Power Factor, Interruptions, Fault current,

- Peak loads, Deviations, faults, real time and historical details of the system etc.
- There should a provision of data accessibility through cloud for remote accessibility if required in the future.
 - There should be a feature of report generation in various modes / layout.
 - The SCADA system should have a modular design, so as to ensure feasibility of future extension.
 - The system should raise Alarm/Alerts during abnormal operations and the same should be recorded with the time stamp and relevant data.
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- The Bidder shall provide all necessary software tools along with source codes to perform addition of bays in future and complete integration with SCADA by the User. These software tools shall be able to configure relay, add analog variable, alarm list, event list, modify interlocking logics etc. for additional bays/equipments which shall be added in future.

-s/d-

**Signature & Seal
of Contractor**

**Executive Engineer (E)
Deendayal Port Authority**

Make List for Electrical Items		
Sr. No.	Description	Recommended Makes
1	HV VCB	SIEMENS/CROMPTON GREAVES/ABB/Schneider
1(a)	HV Gas Insulated Breakers	SIEMENS /Schneider/ABB
2	POWER TRANSFORMERS	VOLTAMP/CROMPTON GREAVES /BHARAT BIJLEE/ BHEL/ SIEMENS/ABB/ Schneider/T&R
3	DISTRIBUTION TRANSFORMERS	EMCO/KIRLOSKAR/PATSON/VOLTAMP/ABB/Schneider/T&R
4	RESIN CAST TRANSFORMERS	
	A) RESIN CAST IMPREGNATED	VOLTAMP/KIRLOSKAR/EMCO
	B) DRY CAST	VOLTAMP/KIRLOSKAR/EMCO
5	HT XLPE CABLES	POLYCAB/TORRENT/RPG ASIAN/NICCO/GLOSTER/ UNISTAR/UNIVERSAL
6	LT XLPE CABLES	POLYCAB/TORRENT/RPG ASIAN/NICCO/RALLISON/ PRIMECAB/HAVELLS/ UNIVERSAL/UNISTAR/AVOCAB
7	LT ACB	SIEMENS/L&T/SCHNEIDER/C&S
8	PROTECTION RELAYS	AREVA/L&T/SIEMENS/ABB/C&S
9	LT PANEL	CPRI APPROVED
10	CHANGE OVER SWITCH	SIEMENS/L&T/ABB/C&S/SCHNIDER/ LEGRAND/ INDOASIAN
11	SFU FOR MAIN LT DISTRIBUTION PANELS	SIEMENS/L&T/ABB/C&S
12	SFU FOR DISTRIBUTION PANELS & FEEDER PILLERS	SIEMENS/L&T/ABB/C&S/ SCHNEIDER/LEGRAND/ INDOASIAN/HAVELLS
13	MCCB FOR MAIN LT DISTRIBUTION PANELS	SIEMENS/L&T/ABB
14	MCCB FOR DISTRIBUTION PANELS AND FEEDER PILLERS	SIEMENS/L&T/ABB/C&S/SCHNEIDER/LEGRAND/ INDOASIAN/ HAVELLS
15	MCB/ELCB/RCCB/ RCCBO FOR MAIN LT DISTRIBUTION PANELS	SIEMENS/HAGER L&T/ABB
16	MCB FOR DISTRIBUTION PANELS AND FEEDER PILLERS	SIEMENS/L&T/ABB/C&S/ SCHNEIDER/LEGRAND/ INDOASIAN /HAVELLS/STANDARD

17	MCB DISTRIBUTION BOARD	STANDARD/HENSEL/LEGRAND/INDOASIAN / HAVELLS
18	MULTI FUNCTION DIGITAL METER FOR MAIN LT DISTRIBUTION PANELS/DIGITAL KWH METERS	L&T/ENERCON/SECURE/L&G/ RISHABH
19	ANALOG VOLT/AMPARE METER FOR DISTRIBUTION PANELS AND FEEDER PILLERS	RISHABH/AE/ENERCON/L&T
20	SLECTOR SWITCH FOR VOLTMETER/AMPARE METER	L&T/SIEMENS/C&S
21	POWER CONTACTOR & OVER LOAD RELAYS	L&T/SIEMENS/ABB
22	QUARTZ TIME CLOCK SWITCH	L&T/INDOASIAN/SIEMENS
23	PVC WIRE WITH COPPER CONDUCTOR	RR KABEL/KEI/POLYCAB/MILEX/GUJCAB/ STANDARD/ FINOLEX/ ANCHOR
24	FLUSH TYPE SWITCHES, SOCKETS, HOLDERS AND CEILING ROSES & ELECTRONIC REGULATORS	ANCHOR/MK/NORTHWEST/VINAY/PANAMA/HAVELLS
25	DOOR BELLS/CALL BELLS	ANCHOR/LEGEND/MK/NORTHWEST
26	MODULAR SWITCHES, SOCKETS, PLATES & BOXES	ANCHOR / MK / NORTHWEST / LEGRAND /HAVELLS/ INDOASIAN/ SIEMENS
27	PVC CONDUIT/OVAL CONDUIT & CASSING CAPPING AND ACCESSORIES	PRECISION/VULCAN/FINOLEX/ GARWARE/ RESTOPLAST/ SWASTIK/ BPI
28	GLS LAMPS & FLUORESCENT LAMPS	PHILIPS / BAJAJ / WIPRO / CROMPTON GREAVES / OSRAM / SURYA ROSHNI /GE
29	HPSV, HPMV & METAL HELIDE LAMPS	PHILIPS / BAJAJ / WIPRO / CROMPTON GREAVES / OSRAM / SURYA ROSHNI /GE
30	IGNITORS FOR HPSV, METAL HELIDE LAMPS	PHILIPS / BAJAJ / WIPRO / CROMPTON GREAVES / OSRAM / SURYA ROSHNI /GE
31	LUMINARIES	PHILIPS/BAJAJ/WIPRO/CROMPTON GREAVES / OSRAM / SURYA ROSHNI /GE
31a	LED Luminaries	Philips /Bajaj/Wipro/CG/Surya/Pyrotech/Syska/Nessa having surge Protection $\geq 10\text{KV}$ for fittings & internal Surge protection for Driver of $\geq 4\text{KV}$, LED Chip only OSRAM/CREE/Philips Lumileds/Citizen/Nicia with LM-79,80 CERTIFICATION

-s/d-

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**Executive Engineer (E)
Deendayal Port Authority**