



CEYLON ELECTRICITY BOARD SRI LANKA

GREEN POWER DEVELOPMENT AND ENERGY EFFICIENCY IMPROVEMENT INVESTMENT PROGRAM (TRANCHE 2)

(ADB LOAN NO: 3483/3484)

PACKAGE 8 - LOT A

Procurement of Plant

Design, Supply, and Installation

**Single-Stage: Two-Envelope
Bidding Procedure**

BIDDING DOCUMENT

**for
Procurement
of**

Augmentation of:

Aniyakanda 132/33kV Grid Substation

Chunnakam 132/33kV Grid Substation

Nadukuda 220/33kV Grid Substation

VOLUME 2 of 8

Part I- BIDDING PROCEDURES

Section 4-Bidding Forms: Part A-Price Bid

Issued on: 25 June 2020

Invitation for Bids No.: CEB/AGM/PRO/2019/IFB/GPDEEIP-T2-P8-LOT A

ICB No.: CEB/AGM/PRO/2019/ICB/GPDEEIP-T2-P8-LOT A

Employer: Ceylon Electricity Board

Country: Sri Lanka

Projects Division

Ceylon Electricity Board,

P.O. Box 540, Colombo 02

Sri Lanka

Document – Revision 1

Information Copy-Not for Bidding

Preface

This Bidding Document for Procurement of Plant – Design, Supply, and Installation, has been prepared by Ceylon Electricity Board and is based on the Standard Bidding Document for Procurement of Plant – Design, Supply, and Installation (SBD Plant) issued by the Asian Development Bank dated December 2016.

ADB's SBD Plant has the structure and the provisions of the Master Procurement Document entitled "Procurement of Plant – Design, Supply, and Installation", prepared by multilateral development banks and other public international financial institutions except where ADB-specific considerations have required a change.

Information Copy-Not for Bidding

Table of Contents - Summary Description

VOLUME 1 OF 8

PART I BIDDING PROCEDURES

Section 1 - Instructions to Bidders (ITB) ----- 1-1

This Section specifies the procedures to be followed by Bidders in the preparation and submission of their Bids. Information is also provided on the submission, opening, and evaluation of bids and on the award of contract.

Section 2 - Bid Data Sheet (BDS) ----- 2-1

This Section consists of provisions that are specific to each procurement and supplement the information or requirements included in Section 1 - Instructions to Bidders.

Section 3 - Evaluation and Qualification Criteria (EQC) ----- 3-1

This Section contains the bid evaluation criteria to determine the lowest evaluated bid and lists the necessary qualifications of Bidders.

VOLUME 2 OF 8

PART I BIDDING PROCEDURES

Section 4 - Bidding Forms (BDF) ----- 4A-1

Part A-Price Bid

This Section contains the forms which are to be completed by the Bidder and submitted as part of its Bid.

VOLUME 3 OF 8

PART I BIDDING PROCEDURES

Section 4 - Bidding Forms (BDF) ----- 4B-1

Part B-Technical Bid

This Section contains the forms which are to be completed by the Bidder and submitted as part of its Bid.

Section 5 - Eligible Countries (ELC) ----- 5-1

This Section contains the list of eligible countries.

VOLUME 4 OF 8

PART II REQUIREMENTS

Section 6 - Employer's Requirements (ERQ) ----- 6A-1

Part A-Scope of Works

VOLUME 5 OF 8

PART II REQUIREMENTS

Section 6 - Employer's Requirements (ERQ) ----- 6B-1

Part B-Technical Specification

VOLUME 6 OF 8**PART II REQUIREMENTS**

Section 6 - Employer's Requirements (ERQ)	6C-1
Part C-Drawings	

VOLUME 7 OF 8**PART II REQUIREMENTS**

Section 6 - Employer's Requirements (ERQ)	6D-1
Part D-Supplementary Information	
Section 6 - Employer's Requirements (ERQ)	6D-1
Part E-Bank Guarantees and Certificates, Change Orders	

VOLUME 6 OF 8**PART III CONDITIONS OF CONTRACT AND CONTRACT FORMS**

Section 7 - General Conditions of Contract (GCC)	7-1
This Section contains the general clauses to be applied in all contracts. These Conditions are subject to the variations and additions set out in Section 8 (Special Conditions of Contract).	
Section 8 - Special Conditions of Contract (SCC)	8-1
This Section contains provisions that are specific to each contract and that modify or supplement the GCC. Whenever there is a conflict, the provisions herein shall prevail over those in the GCC. The clause number of the SCC is the corresponding clause number of the GCC.	
Section 9 - Contract Forms (COF)	9-1
This Section contains forms, which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.	

Section 4 - Bidding Forms

Part A – Price Bid

This section contains the forms to be completed by the Bidder and submitted as part of its Bid.

Table of Forms

Letter of Price Bid	4-6
Price Schedules.....	4-8
Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad	4-10
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from within the Employer's Country	4-10
Schedule No. 3. Design Services.....	4-12
Schedule No. 4. Civil Works, Installation and Other Services.....	4-13
Schedule No. 5. Grand Summary.....	4-14
Schedule No. 6. Recommended Spare Parts, Tools and Instruments.....	4-15
Schedule No. 7. Day Works (Provisional)	4-13
Schedule No. 8. Rates for Variations	4-14
Schedule No. 9. Schedule of Major Items of Constructional Plant	4-15

Letter of Price Bid

-- Note --

The bidder must accomplish the Letter of Price Bid on its letterhead clearly showing the bidder's complete name and address.

Date:

ICB No.:

Invitation for Bid No.:

To: [... insert complete name of the employer ...]

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including Addenda issued in accordance with Instructions to Bidders (ITB) 8.
- (b) We offer to design, manufacture, test, deliver, install, pre-commission, and commission in conformity with the Bidding Document the following Plant and Services: [... insert narrative ...].
- (c) The total price of our Bid, excluding any discounts offered in item (d) below is the sum of

[amount of foreign currency in words], [amount in figures], and [amount of local currency in words], [amount in figures]

The total bid price from the Grand Summary (Schedule No. 5) should be entered by the Bidder inside this box. Absence of the total bid price in the Letter of Price Bid may result in the rejection of the bid.

- (d) The discounts offered and the methodology for their application are as follows: [... insert discounts and methodology for their application if any ...]
- (e) Our Bid shall be valid for a period of [... insert bid validity period as specified in ITB 20.1 of the BDS ...] days from the date fixed for the submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- (f) If our Bid is accepted, we commit to obtain a performance security in accordance with the Bidding Document.

- (g) We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: ¹

Name of Recipient	Address	Reason	Amount
.....
.....

- (h) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed.
- (i) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (j) We agree to permit ADB or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB.

Name

In the capacity of

Signed

Duly authorized to sign the Bid for and on behalf of

Date

¹ If none has been paid or is to be paid, indicate "None."

Price Schedules

PREAMBLE

General

1. The Price Schedules are divided into separate Schedules as follows:
 - Schedule No. 1: Plant and Mandatory Spare Parts Supplied from Abroad
 - Schedule No. 2: Plant and Mandatory Spare Parts Supplied from within the Employer's Country
 - Schedule No. 3: Design Services
 - Schedule No. 4: Civil Works, Installation and Other Services
 - Schedule No. 5: Grand Summary
 - Schedule No. 6: Recommended Spare Parts, Tools and Instruments
 - Schedule No. 7: Day Works (Provisional)
 - Schedule No. 8: Rates for Variations
 - Schedule No. 9: Schedule of Major Items of Construction Plant
2. The Schedules do not generally give a full description of the plant to be supplied and the services to be performed under each item. Bidders shall be deemed to have read the Employer's Requirements and other sections of the Bidding Document and reviewed the Drawings to ascertain the full scope of the requirements included in each item prior to filling in the rates and prices. The entered rates and prices shall be deemed to cover the full scope as aforesaid, including overheads and profit.
3. If Bidders are unclear or uncertain as to the scope of any item, they shall seek clarification in accordance with ITB 7 prior to submitting their bid.

Pricing

4. The units and rates in figures entered into the Price Schedules should be typewritten or if written by hand, must be in print form. Price Schedules not presented accordingly may be considered nonresponsive. Any alterations necessary due to errors, etc., shall be initialed by the Bidder. As specified in the Bid Data Sheet and Special Conditions of Contract, prices shall be fixed and firm for the duration of the Contract, or prices shall be subject to adjustment in accordance with the corresponding Appendix (Price Adjustment) to the Contract Agreement.
5. Bid prices shall be quoted in the manner indicated and in the currencies specified in the Instructions to Bidders in the Bidding Document.
For each item, Bidders shall complete each appropriate column in the respective Schedules, giving the price breakdown as indicated in the Schedules.
Prices given in the Schedules against each item shall be for the scope covered by that item as detailed in Section 6 (Employer's Requirements) or elsewhere in the Bidding Document.
6. Payments will be made to the Contractor in the currency or currencies indicated under each respective item.
7. When requested by the Employer for the purposes of making payments or part payments, valuing variations or evaluating claims, or for such other purposes as the Employer may reasonably require, the Contractor shall provide the Employer with a breakdown of any composite or lump sum items included in the Schedules.

Schedules of Rates and Prices

Schedule No. 1 - Plant and Mandatory Spare Parts Supplied from Abroad

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8
1.2.1. ANIYAKANDA GRID SUBSTATION							
A	Outdoor Switchgear 1.2.1.1						
1	145kV Single busbar system 1.2.1.1.1						
	2000A, 31.5kA, 145kV three phase tubular bus bars with post insulators		1 Set				
2	01 No. 145kV Transformer bay 1.2.1.1.2						
	Three phase busbar disconnecter		1 No.				
	Three phase circuit breaker		1 No.				
	Current transformers		3 Nos.				
	Single phase surge arresters with counters		3 Nos.				
	Neutral current transformer		1 No.				
	Set of accessories		1 Lot				
3	01 No. 36kV Transformer Bay 1.2.1.1.3						
	Single phase surge arresters with counters		3 Nos.				
	Set of cable connection between indoor switchgear and outdoor equipment		1 Lot				
	Connections, connectors, clamps, and access ladders etc. including connections to transformer 36kV bushings.		1 Lot				
5	01 No. of 36kV, 800A/30s Earthing Transformer bay 1.2.1.1.4						
	Neutral current transformer		1 No.				
	Outdoor equipment including set of connections, connectors, clamps, structures, access ladders etc. to connect 36kV outdoor busbars and neutral current transformers		1 Lot				

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8
B	MODIFICATION OF SF₆ INSULATED INDOOR SWITCHGEAR 1.2.1.2						
1	01 No. 36kV Transformer bay 1.2.1.2.1						
	Current transformer		3 Nos.				
	Voltage transformer		3 Nos.				
	Cable termination and accessories specified		1 Lot				
	Set of miscellaneous items		1 Lot				
C	MODIFICATION OF LVAC SWITCH BOARDS 1.2.1.3						
1	400V Distribution panel modification 1.2.1.3.1						
	Necessary items for modification		1 Lot				
D	BATTERIES, CHARGERS, DISTRIBUTION BOARDS & INVERTER EQUIPMENT 1.2.1.4						
	Necessary modification for the existing battery bank		1 Lot				
	Set of miscellaneous items		1 Lot				
E	PROTECTION, METERING, MONITORING AND CONTROL 1.2.1.5						
1	Modifications to Substation Automation System 1.2.1.5.1 (each individual item shall be priced)						
	Connecting New control & protection IEDs to existing IEC 61850 SAS communication network using fiber optic cables		1 Lot				
	Industrial Ethernet Switches used for IEC 61850 with fiber interfaces		1 Lot				
	Fiber optic cables, Ethernet cables and other accessories		1 Lot				
	Necessary configurations of SAS (<i>Subjected to the approval of the employer</i>)		1 Lot				
2	145kV Protection & Control facilities 1.2.1.5.2						
	145kV Transformer bay 1.2.1.5.2.1		1 No.				
3	36kV Protection & Control facilities 1.2.1.5.3						
	Ethernet switch and necessary accessories		1 No.				
	Modification of existing generator feeder bay to 36kV Transformer bay 1.2.1.5.3.1		1 No.				
	Modification of Capacitor Bank Control & Protection 1.2.1.5.3.2		1 No.				
4	Modification of Energy Metering panels 1.2.1.5.4						
			1 Lot				

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8
F	MODIFICATION OF COMMUNICATION SYSTEM AND SCADA GATEWAYS 1.2.1.6						
	Modules for fiber optic multiplexer of FOX 515 type 1.2.1.6.1		1 Lot				
	Required SCADA for Aniyakanda Grid Substation 1.2.1.6.2.		1 Lot				
	Integration work of new control and protection IEDs, Ethernet switches and AVR to existing gateway (<i>subjected to the approval of the employer</i>) 1.2.1.6.3		1 Lot				
G	SUBSTATION EARTHING MODIFICATION 1.2.1.7		1 Lot				
H	LIGHTNING PROTECTION SYSTEM MODIFICATION 1.2.1.8		1 Lot				
I	GROUNDING SYSTEM MODIFICATION 1.2.1.9		1 Lot				
J	POWER AND CONTROL CABLES 1.2.1.10						
1	36kV Power cables and terminations 1.2.1.10.1						
	Between Power transformer and 36kV indoor switchgear		1 Lot				
	Between Power transformer and earthing transformer		1 Lot				
	Re-routing existing 36kV power cables		1 Lot				
2	All LVAC power cables and terminations. 1.2.1.10.2		1 Lot				
3	All DC power and control cables and terminations. 1.2.1.10.3		1 Lot				
4	All cables required for Protection, Control, Instrumentation, Communication, SCADA and termination. 1.2.1.10.4		1 Lot				
5	All cables required for station lighting, small power, fire protection, ventilation equipment. 1.2.1.10.5		1 Lot				

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8
K	TRANSFORMERS 1.2.1.11						
	Power Transformer		1 No.				
	Earthing Transformer		1 No.				
L	SUPPORTING STRUCTURES INCLUDING GANTRIES 1.2.1.12		1 Lot				
M	MARSHALLING KIOSK 1.2.1.13		1 Lot				
N	SITE CLEARING AND HANDING OVER REMOVED ITEMS 1.2.1.14		1 Lot				
O	MISCELLANEOUS WORKS 1.2.1.15		1 Lot				
P	SPARE PARTS 1.2.1.16 *						
Q	TOOLS AND INSTRUMENTS 1.2.1.17 *						
1.2.2. CHUNNAKAM GRID SUBSTATION							
A	Outdoor Switchgear 1.2.2.1						
1	145kV Single busbar system 1.2.2.1.1						
	2000A, 31.5kA, 145kV three phase tubular bus bars with post insulators		1 Set				
2	01 No. 145kV Transformer bay 1.2.2.1.2						
	Three phase busbar disconnecter		1 No.				
	Three phase circuit breaker		1 No.				
	Current transformers		3 Nos.				
	Single phase surge arresters with counters		3 Nos.				
	Neutral current transformer		1 No.				
	Set of accessories		1 Lot				
3	01 No. 36kV Transformer Bay 1.2.2.1.3						
	Single phase surge arresters with counters		3 Nos.				
	Set of cable connection between indoor switchgear and outdoor equipment		1 Lot				
	Connections, connectors, clamps, and access ladders etc. including connections to transformer 36kV bushings.		1 Lot				
4	03 Nos. 36kV Line Feeder Bays 1.2.2.1.4						

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8
	Single phase surge arresters with counters		9 Nos.				
	Set of accessories		3 Lots				
	Set of cable connection between indoor switchgear and outdoor equipment		3 Lots				
5	01 No. 36kV Generator Feeder Bays 1.2.2.1.5						
	Single phase surge arresters with counters		3 Nos.				
	Set of accessories		1 Lot				
	Set of cable connection between indoor switchgear and outdoor equipment		1 Lot				
6	01 No. of 36kV, 800A/30s Earthing Transformer bays 1.2.2.1.6						
	Neutral current transformer		1 No.				
	Outdoor equipment including set of connections, connectors, clamps, structures, access ladders etc. to connect 36kV outdoor busbars and neutral current transformers		1 Lot				
B	SF6 INSULATED INDOOR SWITCHGEAR 1.2.2.2						
1	01 No. 36kV Transformer bay 1.2.2.2.1						
	Three phase busbars		1 Sets				
	Three phase busbar disconnector with earth switch		1 No.				
	Three phase circuit breaker		1 No.				
	Current transformers		3 Nos.				
	Single phase VT		3 Nos.				
	Cable termination and accessories specified		1 Lot				
	Set of miscellaneous items		1 Lot				
2	03 Nos. 36kV Line Feeder bays 1.2.2.2.2						
	Three phase busbars		03 Sets				
	Three phase busbar disconnector with earth switch		03 Nos.				
	Three phase circuit breaker		03 Nos.				
	Current transformers		09 Nos.				
	Single phase VT		09 Nos.				

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8
	Cable termination and accessories specified		03 Lots				
	Set of miscellaneous items		03 Lots				
3	01 No. 36kV Generator Feeder bay 1.2.2.2.3						
	Three phase busbars		1 Set				
	Three phase busbar disconnecter with earth switch		1 No.				
	Three phase circuit breaker		1 No.				
	Current transformers		3 Nos.				
	Single phase VT		3 Nos.				
	Cable termination and accessories specified		1 Lot				
	Set of miscellaneous items		1 Lot				
4	01 No. 36kV Bus Section bay 1.2.2.2.4						
	Three phase busbars		1 Set				
	Three phase circuit breaker		1 No.				
	Three phase disconnecter with earth switch		2 Nos.				
	Current transformers		3 Nos.				
	Single phase VT		3 Nos.				
	Set of miscellaneous items		1 Lot				
C	MODIFICATION OF LVAC SWITCH BOARDS 1.2.2.3						
1	400V Distribution panel modification 1.2.2.3.1						
	Necessary items for modification		1 Lot				
D	BATTERIES, CHARGERS, DISTRIBUTION BOARDS & INVERTER EQUIPMENT 1.2.2.4						
	Necessary modification for the existing battery bank		1 Lot				
	Set of miscellaneous items		1 Lot				
E	PROTECTION, METERING, MONITORING AND CONTROL 2.2.1.5						
1	Modifications to Substation Automation System 1.2.2.5.1 (each individual item shall be priced)						
	Connecting New control & protection IEDs to existing IEC 61850 SAS communication network using fiber optic cables		1 Lot				
	Industrial Ethernet Switches used for IEC 61850 with fiber interfaces		1 Lot				
	Fiber optic cables, Ethernet cables and other accessories		1 Lot				

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8
	Necessary configurations of SAS (<i>Subjected to the approval of the employer</i>)		1 Lot				
2	145kV Protection & Control facilities 1.2.2.5.2						
	145kV Transformer bay 1.2.2.5.2.1		1 No.				
3	36kV Protection & Control facilities 1.2.2.5.3						
	Ethernet switch and necessary accessories		2 Nos.				
	36kV Line Feeder bays 1.2.2.5.3.1		3 Nos.				
	36kV Generator Feeder bay 1.2.2.5.3.2		1 No.				
	36kV Transformer bays 1.2.2.5.3.3		1 No.				
	36kV Bus Section bay 1.2.2.5.3.4		1 No.				
	36kV frequency & voltage relays to install in Bus Section bay 1.2.2.5.3.5		1 Lot				
	Auxiliary LVAC Control 1.2.2.5.3.6		1 Lot				
4	Energy Metering Panel 1.2.2.5.4		1 Lot				
F	MODIFICATION OF COMMUNICATION SYSTEM AND SCADA GATEWAYS 1.2.2.6						
	Modules for fiber optic multiplexer of FOX 515 type 1.2.2.6.1		1 Lot				
	Required SCADA for Chunnakam Grid Substation 1.2.2.6.2.		1 Lot				
	Integration work of new control and protection IEDs, Ethernet switches and AVR to existing gateway (<i>subjected to the approval of the employer</i>) 1.2.2.6.3		1 Lot				
G	SUBSTATION EARTHING MODIFICATION 1.2.2.7		1 Lot				
H	LIGHTNING PROTECTION SYSTEM MODIFICATION 1.2.2.8		1 Lot				
I	GROUNDING SYSTEM MODIFICATION 1.2.2.9		1 Lot				
J	POWER AND CONTROL CABLES 1.2.2.10						
1	36kV Power cables and terminations 1.2.2.10.1						

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8
	Between Power transformer and 36kV indoor switchgear		1 Lot				
	From switchgear panels to outdoor gantries for Line feeders.		3 Lots				
	From switchgear panels to outdoor gantries for Generator feeders.		1 Lot				
2	All LVAC power cables and terminations. 1.2.2.10.2		1 Lot				
3	All DC power and control cables and terminations. 1.2.2.10.3		1 Lot				
4	All cables required for Protection, Control, Instrumentation, Communication, SCADA and termination. 1.2.2.10.4		1 Lot				
5	All cables required for station lighting, small power, fire protection, ventilation equipment. 1.2.2.10.5		1 Lot				
K	TRANSFORMERS 1.2.2.11						
	Power Transformer		1 No.				
	Earthing Transformer		1 No.				
L	SUPPORTING STRUCTURES INCLUDING GANTRIES 1.2.2.12		1 Lot				
M	MARSHALLING KIOSK 1.2.2.13		1 Lot				
N	SITE CLEARING AND HANDING OVER REMOVED ITEMS 1.2.2.14		1 Lot				
O	MISCELLANEOUS WORKS 1.2.2.14		1 Lot				
P	SPARE PARTS 1.2.2.15 *						
Q	TOOLS AND INSTRUMENTS 1.2.2.16 *						
1.2.3 NADUKUDA GRID SUBSTATION							
A	Outdoor Switchgear 1.2.3.1						
1	01 No. 245kV Transformer bay 1.2.3.1.1						

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8
	Single phase surge arresters with counters		3 Nos.				
	Neutral current transformer		1 No.				
	Set of cable connection between indoor switchgear and power transformer outdoor equipment including set of connections, connectors, clamps, structures, access ladders, cable sealing end or terminal arrangement suitable for incoming 245kV cables etc. to terminate the 245kV cable and connect to the Transformer.		1 Lot				
	Connections, connectors, clamps, and access ladders etc. including connections to transformer 245kV bushings		1 Lot				
2	01 No. 36kV Transformer Bay 1.2.3.1.2						
	Single phase surge arresters with counters		3 Nos.				
	Set of cable connection between indoor switchgear and outdoor equipment		1 Lot				
	Connections, connectors, clamps, and access ladders etc. including connections to transformer 36kV bushings.		1 Lot				
3	01 No. of 36kV, 300A/30s Earthing Transformer bay 1.2.3.1.3						
	Neutral current transformer		1 No.				
	Outdoor equipment including set of connections, connectors, clamps, structures, access ladders etc. to connect 36kV outdoor busbars and neutral current transformers.		1 Lot				
A	MODIFICATION OF LVAC SWITCH BOARDS 1.2.3.2						
	Necessary items for modification		1 Lot				
B	BATTERIES, CHARGERS, DISTRIBUTION BOARDS & INVERTER EQUIPMENT 1.2.3.3						
	Necessary items for modification		1 Lot				
C	PROTECTION, METERING, MONITORING AND CONTROL 1.2.3.4						

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8
1	Modifications to Substation Automation System 1.2.3.4.1 (each individual item shall be priced)						
	Connecting New control & protection IEDs to existing IEC 61850 SAS communication network using fiber optic cables		1 Lot				
	Industrial Ethernet Switches used for IEC 61850 with fiber interfaces		1 Lot				
	Fiber optic cables, Ethernet cables and other accessories		1 Lot				
	Necessary configurations of SAS (<i>Subjected to the approval of the employer</i>)		1 Lot				
2	245kV Protection & Control facilities 1.2.3.4.2						
	245kV Transformer bay 1.2.3.4.2.1		1 No.				
D	MODIFICATION OF COMMUNICATION SYSTEM AND SCADA GATEWAYS 1.2.3.5						
	Modules for fiber optic multiplexer of type FOX 515 1.2.3.5.1		1 Lot				
	Required SCADA for Nadukuda Grid Substation 1.2.3.5.2		1 Lot				
	Integration work of new control and protection IEDs, Ethernet switches and AVR to existing gateway (<i>subjected to the approval of the employer</i>) 1.2.1.5.3		1 Lot				
E	LIGHTNING PROTECTION SYSTEM MODIFICATION 1.2.3.6		1 Lot				
F	GROUNDING SYSTEM MODIFICATION 1.2.3.7		1 Lot				
G	POWER AND CONTROL CABLES 1.2.3.8						
1	245kV Power cables, joints and terminations 1.2.3.8.1						
	Cable between Power transformer and 245kV indoor switchgear		1 Lot				
	Cable terminations		2 Lots				
2	36kV Power cables, joints and terminations 1.2.3.8.2						
	Between Power transformer and 36kV indoor switchgear and termination accessories		1 Lot				

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8
	Between earthing transformer and power transformer and termination accessories		1 Lot				
3	All LVAC power cables and terminations. 1.2.3.8.3		1 Lot				
4	All DC power and control cables and terminations. 1.2.3.8.4		1 Lot				
5	All cables required for Protection, Control, Instrumentation, Communication, SCADA and termination. 1.2.3.8.5		1 Lot				
6	All cables required for station lighting, small power, fire protection, ventilation equipment. 1.2.3.8.6		1 Lot				
H	TRANSFORMERS 1.2.3.9						
	Power Transformer		1 No.				
	Earthing Transformer		1 No.				
I	SUPPORTING STRUCTURES INCLUDING GANTRIES 1.2.3.9		1 Lot				
J	MARSHALLING KIOSK 1.2.3.10		1 Lot				
K	SITE CLEARING AND HANDING OVER REMOVED ITEMS 1.2.3.12		1 Lot				
L	MISCELLANEOUS WORKS 1.2.3.11		1 Lot				
M	SPARE PARTS 1.2.3.12 *		1 Lot				
N	TOOLS AND INSTRUMENTS 1.2.3.13 *						
MANDATORY SPARE PARTS, TOOLS AND INSTRUMENTS 1.2.1.16, 1.2.1.17, 1.2.2.16, 1.2.2.17, 1.2.3.14, 1.2.3.15							
A	Aniyakanda GSS						
1	145kV OUTDOOR SWITCHGEAR						
	1250A, 145kV, 31.5kA three-phase circuit breaker operating mechanism		1 No.				

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8
	1250A. 145kV, 31.5kA Circuit Breaker Pole		1 No.				
	145kV, 31.5kA Current Transformer 400-200/1(5P20), 400-200/1(5P20), 400.200/1(0.2), 2000/1(5P20)		1 No.				
	Circuit Breaker Open Coils		4 Nos.				
	Circuit Breaker Closing Coils		4 Nos.				
	145 kV , 1250 A ,31.5 kA three-phase busbar disconnecter with hand and motor operating mechanism & connecting clamps.(Excluding the mounting structure)		1 No.				
2	36kV OUTDOOR SWITCHGEAR						
	36 kV Neutral Current Transformer 800/1(5P20) , 800/1(5P20)		1 No.				
3	36kV SF₆ INSULATED INDOOR SWITCHGEAR						
	36 kV Current transformers for outgoing line feeder bays (GIS Type) 800/1 (5P20), 800/1 (0.2)		3 Nos.				
4	PROTECTION IEDs						
	Complete IED for 36 kV Tr. Bay		1 No.				
	Trip Circuit Supervision Relay		3 Nos.				
5	MISCELLANEOUS						
	Automatic Voltage Regulator (AVR) complete unit		1 No.				
	SF6 Gas filling/handling unit suitable for the offered outdoor compact SF6 Switchgear unit		1 No.				
	SF6 Gas filling kit for outdoor circuit breakers		1 No.				
	Set of Dehydrating Breathers for 132/33kV 31.5MVA Power Transformers (Main Tank & OLTC)		1 No.				
	Ni- Cd Cells for 110VDC system (In dry state without electrolyte)		20 Nos.				

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8
	Pressure Relief Disc		1 No.				
	Dessicant Containers		2 Nos.				
	GIS End Termination Kits		1 No.				
	Outdoor 36 kV SF6 Compact Switchgear Cable Termination kits		1 No.				
	Complete set of primary connecting clamps comprising of 06 nos. each of all types of clamps and connectors used		1 Set				
B	CHUNNAKAM GSS						
1	145kV OUTDOOR SWITCHGEAR						
	1250A, 145kV, 31.5kA three-phase circuit breaker operating mechanism		1 No.				
	1250A, 145kV, 31.5kA Circuit Breaker Pole		1 No.				
	145kV, 31.5kA Current Transformer 400/1(5P20), 400/1(5P20), 400/1 (0.2), 2000/1(5P20)		1 No.				
	Circuit Breaker Open Coils		3 Nos.				
	Circuit Breaker Closing Coils		3 Nos.				
	120kV, 10kA, Class 2 Surge arrestors with counters		1 No.				
	Blower fans for main transformer		2 Nos.				
	HV Bushing		1 No.				
	LV Bushing		1 No.				
2	PROTECTION IEDs						
	Complete IED for 36 kV Tr. Bay		1 No.				
	Trip Circuit Supervision Relay		3 Nos.				
3	MISCELLANEOUS						
	Automatic Voltage Regulator (AVR) complete unit		1 No.				
	SF6 Gas filling/handling unit suitable for the offered indoor compact SF6 Switchgear unit		1 No.				
	SF6 Gas filling kit for outdoor circuit breakers		1 Set				

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8
	Set of Dehydrating Breathers for 132/33kV 31.5MVA Power Transformers (Main Tank & OLTC)		1 Set				
	Set of Dehydrating Breathers for Earthing Transformer		1 No.				
	Cells for 110VDC system (In dry state without electrolyte)		10 Nos.				
	Pressure Relief Disc		1 No.				
	Dessicant Containers		2 Nos.				
	Outdoor 36 kV Cable Termination kits complete set		2 Nos.				
	Clip-on meters		2 Nos.				
	Complete set of primary connecting clamps comprising of 06 nos. each of all types of clamps and connectors used		1 No.				
C	NADUKUDA GSS						
1	MISCELLANEOUS						
	MCBs of similar rating for LVAC switch board		3 Nos.				
	Indicator lamps		1 Set				
	Outdoor 36kV cable Termination kits		1 No.				
	Blower fan for 220/33kV 63 MVA power transformer		3 Nos.				
	HV bushing for 220/33kV 63 MVA power transformer		1 No.				
	LV bushing 220/33kV 63 MVA power transformer		1 No.				
	Cable termination kit for 245kV, XLPE cable		1 Set				
TOTAL Column 7 to be carried forward to Schedule No. 5. Grand Summary							

Name of Bidder

Signature of Bidder

Item	Description ¹	Country of Origin	Qty.	Unit Price ²		Total Price ²	Taxes and Duties
				Foreign Currency	CIP	Foreign Currency	Local Currency
1	2	3	4	5	6	7 = 4 x 6	8

¹ The sub-clause numbers indicated in the table are related to Section 6 (Employer's Requirements), Part A - Scope of Work.

² Specify currencies in accordance with Bid Data Sheet 19.1. Create additional columns for foreign currencies up to a maximum number of 3 foreign currencies if so required.

* To be quoted under Table 1 (a) - Mandatory Spare Parts, Tools and Instruments

Information Copy-Not for Bidding

Country of Origin Declaration Form

Item	Description	Country

Summary Table

Item	Description	Total Price
1	Aniyakanda Grid Substation	
2	Chunnakam Grid Substation	
3	Nadukuda Grid Substation	
4	Mandatory Spare Parts	

Schedule No. 2 - Plant and Mandatory Spare Parts Supplied from within the Employer's Country

Item	Description	Qty	EXW Unit Price ¹	Total EXW Price ¹	Sales Tax	Total Price
1	2	3	4	5 = 3 x 4	6	7 = 5 + 6
TOTAL Column 5 to be carried forward to Schedule No. 5. Grand Summary						

Name of Bidder _____

Signature of Bidder _____

¹ Specify currency in accordance with Bid Data Sheet 19.1.

Schedule No. 3 - Design Services

Item	Description ¹	Qty.	Unit Price ¹			Total Price ¹	
			Local Currency Portion	Foreign Currency	Foreign Currency Portion	Local Currency Portion	Local Currency Portion
1	2	3	4	5	6	7 = 3 x 4	8 = 3 x 6
A	ANIYAKANDA GRID SUBSTATION						
a)	Electrical Works						
	Design and Liaison of Electrical Works	1 Lot					
	Drawing and Documentation required for the Electrical Works	1 Lot					
b)	Mechanical Works						
	Design and Liaison of Mechanical Works	1 Lot					
	Drawing and Documentation required for the Electrical Works	1 Lot					
c)	Civil Works						
	Design and Liaison of Civil Works	1 Lot					
	Drawing and Documentation required for the Electrical Works	1 Lot					
B	CHUNNAKAM GRID SUBSTATION						
a)	Electrical Works						
	Design and Liaison of Electrical Works	1 Lot					
	Drawing and Documentation required for the Electrical Works	1 Lot					
b)	Mechanical Works						
	Design and Liaison of Mechanical Works	1 Lot					
	Drawing and Documentation required for the Electrical Works	1 Lot					
c)	Civil Works						
	Design and Liaison of Civil Works	1 Lot					
	Drawing and Documentation required for the Electrical Works	1 Lot					
C	NADUKUDA GRID SUBSTATION						
a)	Electrical Works						

Item	Description ¹	Qty.	Unit Price ¹			Total Price ¹	
			Local Currency Portion	Foreign Currency	Foreign Currency Portion	Local Currency Portion	Local Currency Portion
1	2	3	4	5	6	7 = 3 x 4	8 = 3 x 6
	Design and Liaison of Electrical Works	1 Lot					
	Drawing and Documentation required for the Electrical Works	1 Lot					
b)	Mechanical Works						
	Design and Liaison of Mechanical Works	1 Lot					
	Drawing and Documentation required for the Electrical Works	1 Lot					
c)	Civil Works						
	Design and Liaison of Civil Works	1 Lot					
	Drawing and Documentation required for the Electrical Works	1 Lot					
TOTAL Column 7 and 8 to be carried forward to Schedule No. 5. Grand Summary							

Name of Bidder

Signature of Bidder

¹ Specify currencies in accordance with Bid Data Sheet 19.1.

Schedule No. 4 – Civil Works, Installation, Other Services and Training

Item	Description ¹	Qty.	Unit Price ²			Total Price ²	
			Local Currency Portion	Foreign Currency	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion
1	2	3	4	5	6	7 = 3x4	8 = 3x6
	CIVIL WORKS 1.3.1						
A	ANIYAKANDA GRID SUBSTATION 1.3.1.1						
1	Preliminary Works 1.3.1.1.1						
	Site Survey	Item					
	Sub Soil Investigation	Item					
2	Site Clearing 1.3.1.1.2						
	Removing surface chipping	Item					
3	Site formation and up keeping 1.3.1.1.3						
	Fill up Surface Chipping	Item					
4	Cable Trenches & Ducts 1.3.1.1.4						
		Item					
5	Foundations 1.3.1.1.5						
	For take-off structures & switchgear	Item					
	For Main Power Transformer & firewall	Item					
	For Earthing Transformer	Item					
6	Modifications of Lightning protection system 1.3.1.1.6						
		Item					
7	Water Supply & Drainage System 1.3.1.1.7						
	Modifications of Surface water drainage system	Item					
8	Maintenance of Roads 1.3.1.1.8						
		Item					
9	Construction of Control & Other Buildings 1.3.1.1.9						
	Site Office at Aniyakanda	Item					

Item	Description ¹	Qty.	Unit Price ²			Total Price ²	
			Local Currency Portion	Foreign Currency	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion
1	2	3	4	5	6	7 = 3x4	8 = 3x6
	Temporary Works (Stores, access, contractor's offices etc)	Item					
9	Miscellaneous Work 1.3.1.1.10	Item					
B	CHUNNAKAM GRID SUBSTATION 1.3.1.2						
1	Preliminary Works 1.3.1.2.1						
	Site Survey	Item					
	Sub Soil Investigation	Item					
2	Site Clearing 1.3.1.2.2						
	Removing surface chipping	Item					
3	Site formation and up keeping 1.3.1.2.3						
	Fill up Surface Chipping	Item					
4	Cable Trenches & Ducts 1.3.1.2.4						
		Item					
5	Foundations 1.3.1.2.5						
	For take-off structures & switchgear	Item					
	For Main Power Transformer	Item					
	For Earthing Transformer	Item					
6	Modifications of Lightning protection system 1.3.1.2.6						
		Item					
7	Water Supply & Drainage System 1.3.1.2.7						
	Modifications of Surface water drainage system	Item					
8	Construction of Control & Other Buildings 1.3.1.2.8						
	Site Office at Chunnakam	Item					
	Temporary Works (Stores, access, contractor's offices etc)	Item					
9	Maintenance of Roads 1.3.1.1.9						
		Item					

Item	Description ¹	Qty.	Unit Price ²			Total Price ²	
			Local Currency Portion	Foreign Currency	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion
1	2	3	4	5	6	7 = 3x4	8 = 3x6
10	Miscellaneous Work 1.3.1.2.10	Item					
C	NADUKUDA GRID SUBSTATION 1.3.1.3						
1	Cable Trenches & Ducts 1.3.1.3.1	Item					
2	Foundations 1.3.1.3.2						
	For take-off structures & switchgear	Item					
	For Main Power Transformer & concrete firewall	Item					
	For Earthing Transformer	Item					
3	Lightning protection system 1.3.1.3.3	Item					
4	Construction of Control & Other Buildings 1.3.1.1.4						
	Control Building modification	Item					
	Site Office at Nadukuda, Temporary building site container type, rented building etc	Item					
5	Construction of Building Services 1.3.1.3.5						
	Internal Lighting & small power supply services.	Item					
6	Maintenance of Roads 1.3.1.3.6	Item					
7	Miscellaneous Work 1.3.1.3.7	Item					

TOTAL Column 7 & 8 to be carried forward to Schedule No. 5, Summary Table

Name of the Bidder

Signature of the Bidder

Item	Description ¹	Qty.	Unit Price ²			Total Price ²	
			Local Currency Portion	Foreign Currency	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion
1	2	3	4	5	6	7 = 3x4	8 = 3x6
A	ANIYAKANDA GRID SUBSTATION (Installation)						
	Erection, installation & commissioning	Item					
B	CHUNNAKAM GRID SUBSTATION (Installation)						
	Erection, installation & commissioning	Item					
C	NADUKUDA GRID SUBSTATION (Installation)						
	Erection, installation & commissioning	Item					
TOTAL Column 7 & 8 to be carried forward to Schedule No. 5, Grand Summary Table							

Name of the Bidder _____

Signature of the Bidder _____

Item	Description ¹	Qty.	Unit Price ²			Total Price ²	
			Local Currency Portion	Foreign Currency	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion
1	2	3	4	5	6	7 = 3x4	8 = 3x6
	OTHER SERVICES 1.3.3						
A	Transport 1.3.3.1						
	Transport for Engineer's Personnel (Engineers)						
	4 WD Double Cabs	4 Nos.					
	Running and maintenance cost for 4 Nos. 4WD double cabs	216,000 km					
B	Engineers' Living Accommodation 1.3.3.2						
	Aniyakanda GSS	1 Lot					
	Chunnakam GSS	1 Lot					
	Nadukuda GSS	1 Lot					
C	Training 1.3.4	1 Lot					
	Training Module given in 14.2.14: Operators Training	1 Lot					
D	Price for Environment Mitigation Measures as per clause 1.1.5 of Part A of Section 6 Employers Requirements	1 Lot					
TOTAL Column 7 & 8 to be carried forward to Schedule No. 5, Grand Summary Table							

Name of the Bidder _____

Signature of the Bidder _____

¹ The sub-clause numbers indicated in the table are related to Section 6 (Employer's Requirements), Part A - Scope of Work.

² Specify currency in accordance with Bid Data Sheet 19.1.

Schedule No. 5 - Grand Summary

Schedule No.	Title	Total Price ¹	
		Foreign	Local
1	Plant and Mandatory Spare Parts Supplied from Abroad		
2	Plant and Mandatory Spare Parts Supplied from within the Employer's Country		
3	Design Services		
4	Civil Works, Installation and Other Services		
GRAND TOTAL to be carried forward to Letter of Bid			

Name of Bidder

Signature of Bidder

¹ Specify currencies in accordance with Bid Data Sheet 19.1.

Item	Description	Qty	Unit Price ¹		Total Price ¹	
			EXW Local Parts Local Currency	CIP Imported Parts Foreign Currency	Local Currency Portion	Foreign Currency Portion
1	2	3	4	5	6 = 3 x 4	7 = 3 x 5
TOTAL						

Name of Bidder

Signature of Bidder

¹ Specify currency in accordance with Bid Data Sheet 19.1.

Schedule No. 7 - Day Works (Provisional)

No works whatsoever may be executed as day works, nor will payment be made for any Day works, except in such works necessary are brought to the notice of the employer and his agreement is received.

LABOUR

- 1 The contractor shall be entitled to the following payments in respect of labour employed on Day works:
 - a) The aggregate amount of wages for such labour calculated on the actual hours worked at the wage rates set out in this Schedule up to the grade of charge hand or overseer working with the men (time for foremen is to be included in the percentage under 2(b) below).
 - b) 10 Percent of aggregate amount of wages calculated according to sub paragraph 2(a) above.
- 2 The percentage addition provided in sub paragraph 2(b) above shall cover Contractor's profit, on cost, superintendence, insurance and all allowances to labour, time keeping and all clerical and office work as well as the use of tools, timber, light equipment and non-mechanical equipment and
- 3 The "Normal working Day" as hereinafter referred to shall be taken to be of eight hours excluding meal breaks and rest periods.
- 4 In calculating the sums due to the Contractor for the execution of Day works, the hours for which payment shall be made for all personnel and the hire of all equipment shall be reckoned from the time of starting the particular item of day work, either at the beginning of or during the course of a normal working day to the end of the normal working day or the time of completion of the particular item of Day work, whichever may be sooner. No payment shall be made for personnel or plant for hours outside the normal working day unless the said personnel and plant are employed on Day works outside the Normal Working Day on the written instruction of the Employer's Representative. The same Day work rate shall apply for works done both during and outside the Normal Working Day.
- 5 On completion of any authorised Day works, a written statement shall be issued by the Employer's Representative who shall sign it together with the Contractor and which shall state the number of workmen and their grades involved in the Day work, the number of hours worked and a detailed description of the Material used and the work carried out. A copy of this signed statement shall be retained by the Employer's Representative and the Contractor and shall be the sole basis upon which payment for Day works will be made.

6 Day Work Rate For Labour

Class of Labour	Normal working Day of 8 Hours
<u>Local Labour</u>	
Unskilled Labourer	
Skilled Labourer	
Driver	
Steel Erector	
Linesman / Foreman	
Chargehand/Overseer	
Surveyor (on survey work only)	
Engineer	
	Average :
	Foreign Currency (...../Day) Average
<u>Expatriate Labour</u>	
Linesman / Foreman	
Chargehand / Overseer	
Steel Erector	
Surveyor (on survey work only)	
Junior Engineer	
Senior Engineer	
	Average :

- 7 Any other class of labour envisaged by Contractors for the execution of any Dayworks, except that covered by Paragraph 3 above, i.e. superintendence, etc., shall be entered above together with the appropriate labour rates, and such rates shall be the only rates considered in any Dayworks claim.
- 8 The labour rates to be entered above shall include all other benefits or contributions made by the employer such as contributions to Social Insurance Schemes, Annual Leave, Termination of Employment and Redundancy Law, Provident Fund, Health Schemes, etc., which are imposed either by Law or by agreement with Trade Unions.

EQUIPMENT AND TRANSPORT

- 9 The rates for hire of equipment and transport shall apply only to equipment, which the Contractor has on site, and are to apply for the actual running hours for which the equipment is employed on work.

- 10 The rates shall include service, operators and necessary attendants, fuel, lubricants and other consumable.
- 11 The contractor may insert additional items and quantities provided that such are extended and added into the total of the Schedule.

MATERIALS

- 12 The rates for materials shall apply to the net amount of materials actually provided, erected and forming part of the works and shall include for delivery to the site of operations
- 13 The contractor may insert additional items and quantities provided that such are extended and added into the total of the schedule.

Item	Qty	Description	Unit	Local Transport & Erection				
				Foreign			Local	
				Foreign Currency	Rates	Total	Rates	Total
1	-	<u>LABOUR</u>						
1.01	10	Local	Days					
1.02	10	Expatriate	Days					
2	-	<u>EQUIPMENT</u>						
2.01	25	Welding set for two welders	Hours					
2.02	25	Acetylene cutting equipment	Hours					
2.03	25	Air compressor (180 m3/hr. at 7 atmospheres) complete with hoses and tools	Hours					
2.04	20	Live line scaffolding complete for 1 existing line (excluding labour element)	Hours					
2.05	25	Tractor with winch	Hours					
2.06	25	Tractor without winch	Hours					
2.07	25	5-tonne lorry	Hours					
2.08	25	2-tonne lorry	Hours					

2.09	10	5-seater saloon car (or similar)	Hours					
Item	Qty	Description	Unit	Local Transport & Erection				
				Foreign			Local	
				Foreign Currency	Rates	Total	Rates	Total
2.1	20	Bulldozer (D6 or similar)	Hours					
2.11	50	2 wheel trailer (for use with tractor or lorry).	Hours					
2.12	10	Unimong	Hours					
2.13	50	Landrover, jeep or similar	Hours					
2.14	50	Pick-up Truck	Hours					
2.15	10	Mobile crane up to 6 tonne lift	Hours					
3		<u>MATERIAL</u>						
3.01	20	Cement	ton					
3.02	50	Sand	m ³					
3.03	50	Crushed stone	m ³					
3.04	10	Reinforcing steel	m ³					
3.05	10	Structural ungalvanised mild steel sections	m ³					
3.06	30	Welding rods	kg					
3.07	20	Sawn timber	m ²					
3.08	100	Imported material for backfill	m ³					
3.09	150	Rubble stones for foundation work (150-300mm dia.)						
4		<u>Works</u>						
4.01	200	Rock blasting (controlled) or rock excavation and carting away	m ³					
		Total						

The following rates shall apply where, by agreement with the Employer's Representative, supervisory staff are employed on day works in a direct capacity, i.e. other in their normal supervisory capacity.

The rates also be used as a basis for assessing any legitimate claims for extra costs in accordance with the provisions of the Conditions of Contract, where these have not been claimed as dayworks.

No payment shall be made without the prior written authority of the Employer's Representative, and the provisions of the conditions of Contract shall apply to any claim for payment.

The Contractor shall insert in the following Schedule descriptions and rates for any clause of supervisory staff envisaged which are not already included.

Class of supervisory staff	Normal working Day of 8 Hours
	Foreign
Expatriate	Currency / Day
Senior Engineer	
Junior Engineer	
Surveyor	
Foreman	
Local	LKR./Day
Surveyor	
Foreman	

Information Copy-Not for Bidding

Schedule No. 8 - Rates for Variations**PART I – CIVIL WORKS**

The Tenderer is reminded that this is a Turnkey Contract. No additional costs will be considered for any items, which the Tender has overlooked.

The Tenderer shall insert rates against each of the items listed in the Schedule. The rates shall be analogous to those used in calculating the Tender Price, and shall be used to evaluate modifications omissions and or additions to the Works where these are instructed by the Employer's Representative before the commencement of the Maintenance Period.

The rates shall be the fully inclusive value of the work described including the cost of any temporary work associated therewith. They shall also include all overheads profit supervision accommodation insurance transport duties risks liabilities obligations and the like but shall exclude design cost which are included as a separate item. Design costs shall only be applied for the work, which necessitates the approval of calculations and/or drawings, by the Employer's Representative.

Rates for items not included in the Schedule shall be based on those quoted where appropriate. Where no suitable rates are existing a new rate based on invoices and other cost records may be agreed. In the event of disagreement, the Employer's Representative shall fix such rates or prices as shall, in his opinion, be reasonable and proper having regard to the circumstances.

The Contract Price shall be adjusted on the basis of the value of the Employer's Representative's instructions priced as described in the foregoing paragraphs

Item	Description	Unit	Rate
			LKR
1	Foundation Piling		
1.1	Mobilisation & Demobilisation	Item	
1.2	Type and size of pile :		
1.2.1	Type : Cast in situ		
	Size : 460 mm Dia Pile	lin.m	
1.2.2	Type : Precast		
	Size: 350 mm x 350 mm square	lin.m	
2	Excavation		
2.1	Excavated to reduced level and remove and deposit where directed on site-include of timbering, de-watering, etc. (measured net sized as drawing)	cu.m	
2.2	Excavated to form pit, base, or trench as previously described	cu.m	
2.3	Additional excavation beyond net sizes for working space to fix and remove form work and to backfill	cu.m	
2.4	Extra Over excavation rates for excavation in rock and carting away	cu.m	
2.5	Approved hard-core well rammed and consolidated in layers of various thickness up to 300 mm and blinded to concrete		
3	Concrete		
3.1	Grade C10 in weak fill	cu.m	

Item	Description	Unit	Rate
			LKR
3.2	Grade C10 in 50 mm thick blinding	sq.m	
3.3	Grade C20 in foundations and bases	cu.m	
3.4	Grade C25 in foundations and bases		
4	Reinforced Concrete		
4.1	Grade C30 concrete in foundations bases, plinths, etc.	cu.m	
4.2	Grade 20 concrete, ditto	cu.m	
4.3	Grade C25 concrete, ditto	cu.m	
4.4	Grade C25 concrete in columns	cu.m	
4.5	Grade C25 concrete in beams	cu.m	
4.6	Grade C25 concrete in walls	cu.m.	
4.7	Extra over all concrete rates for sulphate resisting cement	cu.m	
5	Reinforcement		
5.1	16 mm Diameter and upwards mild steel bar or round reinforcement hooked, bent and fixed including all necessary typing wire	Kg	
5.2	12 mm Diameter as previously described	Kg	
5.3	10 mm Diameter as previously described	Kg	
5.4	Fabric reinforcement weighing 4 kg per square meter, including fixing	Sq.m	
5.5	Extra over mild steel rates for high tensile reinforcement (as sizes)	Kg	
6	Formwork		
6.1	To foundations	sq.m	
6.2	To columns	sq.m	
6.3	To soffits of beam	sq.m	
6.4	To walls	sq.m	
6.5	To soffits of slabs	sq.m	
6.6	Extra over straight formwork for in any position	sq.m	
7	Pre-cast Concrete		
7.1	Including reinforcement and hoisting		
7.2	1 meter wide x 130 mm thick plant with ditto and ditto	lin.m	
7.3	50 mm thick paving slabs size 600 mm square on and including bed of sand	sq.m	
7.4	Duct or cable trench covers	sq.m	
8	Sundries		
8.1	Damp proof membrane under floor slab	sq.m	
8.2	Form pocket in concrete 150 mm square x 450 mm deep	No.	
8.3	Form pocket in concrete 100 mm square x 225 mm deep	No.	
8.4	Form anti-vibration joint 18 mm wide x 200 mm deep and seal with approved sealant	lin.m	
8.5	Concrete contraction joint s	lin.m	
9	Block-work		
9.1	100 mm thick hollow cement block walling in mortar, left rough for plaster both sides and include for all labour, cutting and waste	Sq.m	
9.2	150 mm thick solid cement block walling as before described	Sq.m	
9.3	200 mm thick hollow cement block walling in mortar and left rough for plaster both sides and include for all labour cutting and waste	sq.m	
9.4	Extra over 200 mm block walling as before described or reinforcing every second horizontal bed joint with approved reinforcement	sq.m	

Item	Description	Unit	Rate
			LKR
9.5	Form 300 mm square opening in 200 mm thick concrete block walling	No.	
9.6	Bituminous felt damp proof course and bed and point in walling	sq.m	
9.7	Brick masonry in wall panel in concrete framed building	sq.m	
9.8	R/R/ Masonary walls	cu.m	
10	Roofing		
10.1	Lightweight screed of pumice aggregate or similar, laid to falls	sq.m	
10.2	Asphalt covering in two layers total 20 mm thickness, laid to falls on sheathing felt, including for dressing over edges and round pipes, etc. and for white spar chipping.	sq.m	
10.3	Asbestos cement corrugated sheets fixed to and including steel purlins, to include labour, fixing, laps, cutting and waste	sq.m	
11	Joinery		
11.1	50 mm plywood faced, solid core, flush door size 85 x 200 cm hung complete, including door frame, door fittings' locks and decoration as specified		
11.2	Adjustable louvred ventilators, at high or low level, fixed complete, including for hardwood and metal framing and glassing louvers complete	sq.m	
11.3	Double leaf smoke-stop door 16=70 cm. Side x 200 cm high, opening in direction indicated, fully glazed with wired glass		
12	Structural Steelwork		
12.1	Galvanised mild steel structural steelwork fabricated, and erected	Tonne	
12.2	Galvanised mild steel support structures for sub station equipment and take off structures fabricated and erected in sub station	Tonne	
13	Metalwork		
13.1	Galvanised steel louvers, fixed complete	sq.m	
13.2	60 x 60 m mild steel angle with lugs welded on and stop to support chequered plate (measured elsewhere) cover to cable trench include for forming rebate for angle bedding, grouting and fixing	lin.m	
13.3	8 mm thick galvanised mild steel chequered plate cover to cable trench and include for fixing	sq.m	
13.4	Supply, bed and fix complete aluminium windows with sliding lights with and including glass and glazing with fittings	sq.m	
13.5	Steel door 850x2000mm		
14	Building Work in Connection with Service and Plant Installation		
14.1	Cut or form hole for pipe through 150 mm thick cement block walling and make good plaster both sides	No.	
14.2	Cut or form hole for pipe through 200 mm thick concrete block wall as described before	No.	
14.3	Cut or form hole for pipe through 250 mm overall thickness cavity block wall as before described	No.	
14.4	Cut or form hole for pipe through 150 mm thick reinforced concrete wall	No.	
14.5	Cut or form hole for pipe through 150 mm thick reinforced concrete slab	No.	
14.6	100 mm thick solid concrete block walling in cement mortar in duct walls finished fair face with flush joint one side	sq.m	
14.7	Concrete Class "C30" in plinth or base including all necessary formwork	cu.m	
14.8	Break-out reinforced concrete exceeding 300 mm thick and remove	sq.m	
14.9	Break-out reinforced concrete exceeding 300 mm thick and remove	cu.m	
14.1	Break-out 200 mm thick rendered/plastered hollow concrete block walling and remove	sq.m	

Item	Description	Unit	Rate
			LKR
14.1	Ditto but 100 mm overall thickness concrete block-work cavity wall	sq.m	
14.1	Ditto but 250 mm overall thickness concrete block-work cavity wall	sq.m	
14.1	Cut chase for conduit or pipe in brick or block walling and make good	lin.m	
14.1	Cut chase for conduit in concrete and make good	lin.m	
14.2	Supply and fix complete light switch	No.	
14.2	Supply and fix complete power socket outlet 13 AMPS	No.	
14.2	Supply and fix complete light fittings (60 Watt fluorescent)	No.	
15	Plasterwork and other Floor Wall and Ceiling Fishes		
15.1	Plasterwork as specified on concrete block walling inclusive of forming key, narrow widths, small quantities and all labors	sq.m	
15.2	Ditto but on ceilings	sq.m	
15.3	Tyrolean external render as specified on concrete and block walling as previously described	sq.m	
15.4	40 mm thick cement and sand screed finished hard and smooth with surface hardener	sq.m	
15.5	Ceramic tiles laid on screeded floor	sq.m	
15.6	Ditto in walls	sq.m	
16	Glazing		
16.1	3 mm clear sheet glass and glazing in various sizes to wood or metal frames with mastic putty	sq.m	
16.2	4 mm wired cast glass and ditto	sq.m	
17	Paint and Decoration		
	Preparing and Applying the Following Finished Surface All as Specified and Described	sq.m	
17.1	Emulsion on fair face concrete or block walling	Sq.m	
17.3	Emulsion on Tyrolean rendered walls	sq.m	
17.4	Emulsion on plastered soffit	sq.m	
17.5	Paint as specified to wooden frames and doors	sq.m	
17.6	Paint – ditto – to steel surfaces	sq.m	
18	Roads and Fences		
18.1	Constructed complete, including excavation or fill, compacted stone base, sub-based, etc	sq.m	
18.2	2.5 m high 200 mm thick rendered concrete block wall with coping, piers		
	Security barbed wire etc. erected complete as specified including excavation, concrete footings etc.	Lin.m	
18.3	Double leaf gates all as specified	No.	
18.4	Block masonry boundary walls 1.5m high	lin.m	
19	Drainage		
19.1	100 mm pipe laid and jointed complete average depth to invert 1 meter, including excavation and reinstatement	lin.m	
19.2	150 mm ditto and ditto	lin.m	
19.3	Ditto but average depth to invert 2 meters and ditto	lin.m	
19.4	Manhole constructed complete, including excavation, rendered concrete walls, benching, cover and frame, internal size	No.	
	Size 1.3 x 1.0 meter, depth to invert not exceeding 2 meters		
19.5	Ditto but inspection chamber, internal size 600x500 mm not exceeding 500 mm to invert	No.	

Item	Description	Unit	Rate
			LKR
20	Water Supply		
20.1	40 mm diameter UPVC pressure pipe laid complete, depth not exceeding 1 meter	lin.m	
20.2	40 mm diameter sluice valve laid and jointed complete with hatch box and cover	No.	
21	Design Work		
	Percentage to be added to cost of construction, for design and detailing of any part of the work, including architectural, structural including architectural,. Structural	Item	

Information Copy-Not for Bidding

PART II – MECHANICAL AND ELECTRICAL WORKS

The Contractor is reminded that this is a Turnkey Contract in which he is entirely responsible for every aspect. No additional costs will be considered for any items, which the Contractor has overlooked, but which is essential for the proper completion of the project in every respect, so that the works fulfil the purpose for which they are required.

If the Employer or the Engineer requires modifications, additions or omissions to the scope of the Civil Works/services, during the period of construction or maintenance, adjustment to the contract price will be made on the basis of the rates entered in the following schedule.

The rates entered shall include all costs and expenses involved in the proper construction of the work, including overheads, profit, supervision, accommodation, insurance, transport, duties, all risks, liabilities or obligations, etc., but excluding design costs, which are covered by a separate item.

The rate will be used to evaluate Employer's or Engineer's modifications, omissions or additions to the works. Rates for any items not included shall be based on those quoted or analogous thereto.

The tenderer shall price all items, which are relevant to his design and tender.

Item	Description	Unit	Rate Sri – Lanka Rupees
1	Mechanical	each	
1.1	Extract ventilation units	m	
1.2	Ductwork 25 mm	m	
1.3	Ductwork 38 mm	m	
1.4	Ductwork 50 mm		
1.5	Ductwork (weather proof) 50 mm	m	
1.6	Extract air grills complete with internal fittings, gaskets screws, etc. as specified	each	
1.7	External louver for item 6	each	
1.8	Air Conditioning unit (split type)	each	
2	Electrical		
	Switches complete with box, up to 3 m circuit wiring, junction box and glands		
2.1	Surface 15 amp 1 way	per gang	
2.2	Surface 15 amp 2 way	per gang	
2.3	Spur unit complete with box, up to 6m of circuit wiring junction box and glands	per gang	
2.4	Type S1 surface	per gang	
2.5	Type S2 fixed spur box	per gang	
2.6	Time switch	each	
2.7	Photo-electric cell control	each	
2.8	Extra circuit wiring	m	

PART III – EXTRA WORKS**CONTROL AND POWER CABLES**

(See Employer Requirements for details)

Bidder should extend in the table below based on drum lengths of each cable offered.

Item No.	Description	No of cores & cross section		Rate		
		mm ²		Foreign	Local	
1	33kV single phase XLPE cable					
1.1	Cable Supply rate per km					
1.2	Cable Installation rate per km					
1.3	Cable Termination rate per km					

EARTHING SYSTEM

(See Employer Requirements for details)

Earthing Supply and Installation
Rate per m/no.

Item	Supply		Install		Rates per Termination	
	Foreign	Local	Foreign	Local	Foreign	Local
Currency		LKR		LKR		LKR

Details:

Schedule No. 9 - Schedule of Major Items of Constructional Plant

Description (Type, Model, Make)	No. of Each	Year of Manufacture	New or Used	Owned (O) or Leased (L)	CIP Value	Est. Power Rating	Capacity ton or m3
Information Copy-Not for Bidding							