Nepal Electricity Authority
Amendment to Bids
(Amendment-II)

Date of Publication: 30 May, 2025

Project No. and title:- 4520-NEP: South Asia Subregional Economic Cooperation (SASEC) Electricity Transmission & Distribution Strengthening Project

OCB No. and title:- **PMD/ETDSP/NBKSEP-081/82-01:** Design, Supply, Installation, Testing and Commissioning of Transformer & Bays (220kV, 132 kV, 33 kV & 11 kV) for the Expansion of New Butwal & Kushma Substation (ADB-Package 8)

Sr. No	Clause Ref.	Existing	Amended As
1.	VOI-I /IFB	Deadline for Submission of Bids: 08 June, 2025 at 12:00 Hours (Nepal Standard Time)	Deadline for Submission of Bids: 22 June, 2025 at 12:00 Hours (Nepal Standard Time)
		7. Deliver your bid: • To the address above on or before the deadline: 08 June 2025 at 12:00 Hours (Nepal Standard Time).	7. Deliver your bid: • To the address above on or before the deadline: 22 June 2025 at 12:00 Hours (Nepal Standard Time).
2.	VOI-I / Section 2: BDS: ITB 24.1	The deadline for bid submission is Date: 08 June 2025 Time: 12:00 Noon (Local Time)	The deadline for bid submission is Date: 22 June 2025 Time: 12:00 Noon (Local Time)
3.	Section 2: BDS: ITB 27.1	The bid opening of Technical Bids shall take place at: Date: 8 June 2025 Time: 14:00 Hours (Local Time)	The bid opening of Technical Bids shall take place at: Date: 22 June 2025 Time: 14:00 Hours (Local Time)
4.	Volume I, Section 2: BDS: ITB 17.4	"Technical Proposal shall also include a Health and Safety COVID-19 Plan (HS C19 Plan), in accordance with the relevant government regulations and guidelines on COVID-19 prevention and ..... a request shall cause the rejection of the bid"	Deleted
5.	Wherever Applicable (for Auxiliary Supply)	110V DC	220V DC
6.	Wherever Applicable (Replace all existing by amended one)	220/132/11 kV, 315 MVA Three Phase ONAN/ONAF Auto (or Power) transformer	220/132/11 kV, 189/315 MVA Three Phase ONAN/ONAF Auto transformer
7.	Wherever Applicable (Replace all existing by amended one)	132/33 kV, Three Phase 63 MVA, ONAN/ONAF Power Transformer	132/33 kV, Three Phase 40/51.5/63 MVA, ONAN/ONAF1/ONAF2 Power Transformer
8.	Wherever Applicable (Replace all existing by amended one)	132/33 kV, Three Phase 24/30 MVA, ONAN/ONAF Power Transformer	132/33 kV, Three Phase 24/27/30 MVA, ONAN/ONAF1/ONAF2 Power Transformer

New Butwal Kushma Substation Expansion Project

9. Volume II, **Section- 3: Power Transformer/6.0: Technical Parameters**						
Clause Ref.	**Clause No.**	**Description**	**Original Value**		**Amended Value**	
6.1 Technical Particulars / Parameters of Transformers (220/132/11) kV 3-Phase Auto Transformer)	1.1	Rated Capacity - LV (Tertiary: Active Loading)	315	189	315	189
			6	8	as per IEC	
	1.2	Voltage ratio (HV/IV/LV) (Line to Line)	(220/√3)/ (132/√3)/11		220/132/11	
	1.6	Cooling	ONAN/ONAF/(OFAF or ODAF) OR ONAN/ONAF1/ONAF2		ONAN/ONAF	
	1.7	Rating at different cooling	60% / 80% / 100%		60% / 100%	
	1.9 (i)	HV-IV Impedance - Max Voltage Tap	9.6%		Removed	
	1.9 (ii)	HV-IV Impedance - Principal Tap	11.7%		12.5%	
	1.9 (iii)	HV-IV Impedance - Min Voltage Tap	13.3%		Removed	
	1.14	Windings				
	1.14(i)	System Fault level				
	1.14(i)	HV	40 kA		50 kA	
	1.14(i)	IV	31.5 kA		40 kA	
	1.14(i)	LV	25 kA		25 kA	
	1.14 (ii)	Lightning Impulse Withstand Voltage – HV	950 kVp		1050 kVp	
	1.14 (ii)	Lightning Impulse Withstand Voltage - IV	550 kVp		650 kVp	
	1.14 (ii)	Lightning Impulse Withstand Voltage - LV	250 (or 170*) kVp		95 kVp	
	1.14 (ii)	Lightning Impulse Withstand Voltage - Neutral	95 kVp		Removed	
	1.14 (iii)	Switching Impulse Withstand Voltage - HV	750 kVp		1050 kVp	
	1.14 (iv)	1-min Power Frequency Withstand Voltage - HV	395 kVrms		460 kVrms	
	1.14 (iv)	1-min Power Frequency Withstand Voltage - IV	230 kVrms		275 kVrms	
	1.14 (iv)	1-min Power Frequency Withstand Voltage - LV	95 (or 70*) kVrms		28 kVrms	
	1.14 (iv)	1-min Power Frequency Withstand Voltage - N	38 kVrms		Removed	
	1.16 (i)	Tap Changer -Tap Range & Number of Steps	–5% to +10% of HV variation in the step of 1.25%, 12 Steps		–10% to +10% of HV variation in the step of 1.25%, 16 Steps	
	1.17	Bushings				
	1.17 (i)	Rated Voltage - LV	52 kV		12 kV	
	1.17 (i)	Rated Voltage - Neutral	12 kV		-	
	1.17 (ii)	Rated Current (Min.)- HV	800 A		1000 A	
	1.17 (ii)	Rated Current (Min.) - IV	1250 A		1600 A	
	1.17 (ii)	Rated Current (Min.)- LV	800 A		800 A	
	1.17 (ii)	Rated Current (Min.) - Neutral	1000 A		1000 A or as reqd	
	1.17 (iii)	Lightning Impulse Withstand Voltage - HV	1050 kVp		1050 kVp	
	1.17 (iii)	Lightning Impulse Withstand Voltage - IV	650 kVp		as required	
	1.17 (iii)	Lightning Impulse Withstand Voltage - LV	250 (or 170*) kVp		95 kVp	
	1.17 (iii)	Lightning Impulse Withstand Voltage - Neutral	170 kVp		as required	
	1.17 (iv)	Switching Impulse Withstand Voltage - HV	850 kVp		1050 kVp	
	1.17 (v)	1-min Power Frequency Withstand Voltage - LV	105 (or 77*) kVrms		28 kVrms	
	1.17 (v)	1-min Power Frequency Withstand Voltage - N	77 kVrms		as required	
	1.17 (vi)	Minimum Creepage Distance - LV	1300 (or 900*) mm		300 mm	
	1.17 (vi)	Minimum Creepage Distance - Neutral	900 mm		as required	
	1.18	Max Partial Discharge Level at 1.5Um/√3	100 pC		10 pC	

6.3 Technical Particulars / Parameters of Transformers (132/33kV, 3-Phase Power	Cl. No.	Description	Original Value		Amended Value	
	1.45	Rating at different cooling (%)	KSS	NBSS	KSS	NBSS
			60 / 100		60/90/100	60/80/100
	1.47(i)	HV-LV Impedance at 75 Deg C -Max Voltage Tap	KSS	NBSS	KSS	NBSS
			10.3%		-	11.76%
	1.47(ii)	HV-LV Impedance at 75 Deg C -Principal Tap	12.5%		>11%/ as per IEC	11.2%
	1.47(iii)	HV-LV Impedance at 75 Deg C –Min Voltage Tap	15.4%		-	10.64%
	1.52 (i)	Windings- System Fault level- HV	31.5 kA		40 kA	
	1.52 (i)	Windings- System Fault level- HV	25 kA		31.5 kA	
	1.52(ii)	Windings-Lightning Impulse withstand Voltage -HV	550 kVp		750 kVp	
	1.52(ii)	Windings-Lightning Impulse withstand Voltage -LV	170 kVp		170 kVp	
	1.52(ii)	Windings-Lightning Impulse withstand Voltage - Neutral	95 kVp		-	
	1.52(iii)	Windings-Switching Impulse withstand Voltage -HV	460 kVp		275 kVp	
	1.52(iv)	Windings-One Minute Power Frequency withstand Voltage - HV	230 kVrms		275 kVrms	
	1.55(ii)	Bushings-Rated current - HV	800 A		800 A	
	1.55(ii)	Bushings-Rated current - LV	1250 A		1250 A	
	1.55(ii)	Bushings-Rated current - Neutral	1250 A		1250 A	
	1.55(iii)	Bushings-Lightning Impulse withstand Voltage - HV	650 kVp		750 kVp	
	1.55(iv)	Bushings-One Minute Power Frequency withstand Voltage - HV	305 kVrms		275 kVrms	
	1.55(iv)	Bushings-One Minute Power Frequency withstand Voltage - LV	77 kVrms		70 kVrms	
	1.55(iv)	Bushings-One Minute Power Frequency withstand Voltage - Neutral	77 kVrms		70 kVrms	
	1.56	Max Partial discharge level at 1.5Um/√3	100 pC		10 pC	

6.4 Technical Particulars / Parameters of Transformers (33/11 kV, 3-Phase Power Transformer)	Cl. No.	Description	Original Value	Amended Value
	1.14 (i)	Windings- System Fault level- HV	25 kA	31.5 kA
	1.14 (ii)	Windings-Lightning Impulse withstand Voltage – Neutral	-	75 kVp
	1.16 (i)	Tap Changer-Tap Range & No. of steps	17 steps	16 steps
	1.17 (ii)	Bushings-Rated current (Min.) – HV	100 A	800 A
	1.17 (ii)	Bushings-Rated current (Min.) – LV	1200 A	1600 A
	1.17 (iv)	Bushings-One Minute Power Frequency withstand Voltage – HV	75 kVrms	70 kVrms
	1.18	Max Partial discharge level at 1.5Um/√3	100 pC	10 pC

Volume II, Section- 3: Power Transformer/**7.5: Technical Parameters for Bushing CT**

10	Clause	Existing	Amended As
	7.5.1 Technical Parameters of Current Transformers	**7.5.1 Technical Parameters of Current Transformers (for 160MVA, 100MVA & 50MVA 220/132kV 3-Ph Transformers and 53.33, 33.33 & 10 MVA 220/132kV 1-ph Transformer) (NOT APPLICABLE)**	**7.5.1 Technical Parameters of Current Transformers (for 189/315 MVA 220/132kV 3-Ph Transformer)**

Existing

Description	Current Transformer Parameters (Transformer)		
	HV Side	IV Side	Neutral Side
(a) Ratio			
CORE 1	1000/1	1000/1	1000/1
CORE 2	600/1	1000/1	-
(b) Minimum knee point voltage or burden and accuracy class			
CORE 1	600V, TPS	600V, TPS	600V, TPS
CORE 2	0.5 Class 15VA ISF ≤ 5	0.5 Class 15VA ISF ≤ 5	-
(c) Maximum CT Secondary Resistance			
CORE 1	1.5 Ohm	1.5 Ohm	1.5 Ohm
CORE 2	-	-	-
(d) Application			
CORE 1	Restricted Earth Fault	Restricted Earth Fault	Restricted Earth Fault
CORE 2	Metering	Metering	-
(e) Maximum magnetization current (at knee point voltage)			
CORE 1	100 mA	100 mA	100 mA
CORE 2	-	-	-

NOTE:

i) For TPS class CT's, Dimensioning parameter "K", Secondary VA shall be considered 1.5 and 20 respectively. Class (for the relevant protection and duties) as per IEC 60185.
ii) Rated continuous thermal current rating shall be 200% of rated primary current.
iii) Parameters of WTI CT for each winding shall be provided by the contractor.
iv) For estimation of spares, one set of CTs shall mean one CT of each type used in transformer.
v) The CT used for REF protection must have the identical parameters in order to limit the circulating current under normal condition for stability of protection.

Amended As

Description	Current Transformer Parameters (Transformer)		
	HV Side	LV Side	Neutral Side
(a) Ratio			
CORE 1	1000/1	2000/1	2000/1
CORE 2	1000/1	2000/1	-
(b) Minimum knee point voltage or burden and accuracy class			
CORE 1	250V, TPS	100V, TPS	100V, TPS
CORE 2	0.2 Class 15VA ISF ≤ 5	0.2 Class 15VA ISF ≤ 5	-
(c) Maximum CT Secondary Resistance			
CORE 1	1.5 Ohm	1.5 Ohm	1.5 Ohm
CORE 2	-	-	-
(d) Application			
CORE 1	Restricted Earth Fault	Restricted Earth Fault	Restricted Earth Fault
CORE 2	Metering	Metering	-
(e) Maximum magnetization current (at knee point voltage)			
CORE 1	100 mA	100 mA	100 mA
CORE 2	-	-	-

NOTE:

i) For TPS class CT's, Dimensioning parameter "K", Secondary VA shall be considered 1.5 and 20 respectively. Class (for the relevant protection and duties) as per IEC 60185.
ii) Rated continuous thermal current rating shall be 200% of rated primary current.
iii) Parameters of WTI CT for each winding shall be provided by the contractor.
iv) For estimation of spares, one set of CTs shall mean one CT of each type used in transformer.
v) The CT used for REF protection must have the identical parameters in order to limit the circulating current under normal condition for stability of protection.
vi) The contractor should submit the detail CT sizing calculation during design for approval

Volume II, Section- 3: Power Transformer/**7.5: Technical Parameters for Bushing CT**

11

Clause	Existing	Amended As
7.5.2 Technical Parameters of Current Transformers	**7.5.2 Technical Parameters of Current Transformers (for 63 MVA, 51.5MVA, 40 MVA, 132/33kV 3-Ph Transformers)**	**7.5.2 Technical Parameters of Current Transformers (for 63 MVA, 51.5MVA, 40 MVA, 132/33kV 3-Ph Transformers)**

Existing

Description	Current Transformer Parameters (Transformer)			
	HV Side	HV Neutral Side	LV Side	LV Neutral Side
(a) Ratio				
CORE 1	200/1	200/1	600/1	600/1
CORE 2	200/1	-	600/1	-
(b) Minimum knee point voltage or burden and accuracy class				
CORE 1	400V, TPS	400V, TPS	600V, TPS	600V, TPS
CORE 2	0.2 Class 15V ISF ≤ 5		0.2 Class 15VA ISF ≤ 5	-
(c) Maximum CT Secondary Resistance				
CORE 1	1.5 Ohm	1.5 Ohm	1.5 Ohm	1.5 Ohm
CORE 2	-	-	-	-
(d) Application				
CORE 1	Restricted Earth Fault	Restricted Earth Fault	Metering	Restricted Earth Fault
CORE 2	Metering			-
(e Maximum magnetization current (at knee point voltage)				
CORE 1	100 mA	100 mA	100 mA	100 mA
CORE 2	-	-	-	-

NOTE:

i) For TPS class CT's, Dimensioning parameter "K", Secondary VA shall be considered 1.5 and 20 respectively. Class (for the relevant protection and duties) as per IEC 60185.
ii) Rated continuous thermal current rating shall be 200% of rated primary current.
iii) Parameters of WTI CT for each winding shall be provided by the contractor.
iv) For estimation of spares, one set of CTs shall mean one CT of each type used in transformer.
v) The CT used for REF protection must have the identical parameters in order to limit the circulating current under normal condition for stability of protection.

Amended As

Description	Current Transformer Parameters (Transformer)			
	HV Side	HV Neutral Side	LV Side	LV Neutral Side
(a) Ratio				
CORE 1	(150-300)/1	(150-300)/1	(600-1200)/1	(600-1200)/1
CORE 2	(150-300)/1	-	(600-1200)/1	-
(b) Minimum knee point voltage or burden and accuracy class				
CORE 1	427V, TPS	427V,TPS	685V, TPS	685V, TPS
CORE 2	0.2 Class 15VA ISF ≤ 5		0.2 Class 15VA ISF ≤ 5	-
(c) Maximum CT Secondary Resistance				
CORE 1	1.5 Ohm	1.5 Ohm	1.5 Ohm	1.5Ohm
CORE 2	-	-	-	-
(d) Application				
CORE 1	Restricted Earth Fault	Restricted Earth Fault	Metering	Restricted Earth Fault
CORE 2	Metering	-	-	-
(e) Maximum magnetization current (at knee point voltage)				
CORE 1	100 mA	100 mA	100 mA	100 mA
CORE 2	-	-	-	-

NOTE:

i) For TPS class CT's, Dimensioning parameter "K", Secondary VA shall be considered 1.5 and 20 respectively. Class (for the relevant protection and duties) as per IEC 60185.
ii) Rated continuous thermal current rating shall be 200% of rated primary current.
iii) Parameters of WTI CT for each winding shall be provided by the contractor.
iv) For estimation of spares, one set of CTs shall mean one CT of each type used in transformer.
v) The CT used for REF protection must have the identical parameters in order to limit the circulating current under normal condition for stability of protection.
vi) The contractor should submit the detail CT sizing calculation during design for approval.

12	Volume II, **Section- 23: Technical Schedule/1.2: Guaranteed Technnical Particular for Power Transformer**				
	Clause Ref.	**Clause No.**	**Description**	**Original Value**	**Amended Value**
	1.2.1 Technical Particulars for 220/132/11 kV Power Transformer	5	Type of cooling	ONAN/ONAF1	ONAN/ONAF
		6	Rating- a) rated capacity	- ONAF1	- ONAF
		8.a	Temperature rise	a)Temperature rise above 40°C ambient	a) Temperature rise above 50°C ambient
		8.b	Hottest spot temperature in winding limited to	55°C	68°C
		11.b	Tap steps	12	16
		12	Cooling equipment	(for ONAF1/ONAF2)	(for ONAF)
		14.b.iv	OLTC-Rating-Number of steps	17	16
		16	Impedance at rated current and frequency at 75 deg.C winding temperature and normal taping - b) on maximum MVA base in ONAF	11.7%	12.5%
		20.a	Insulation level-Power frequency withstand voltage (1 min rms) - Primary	395 kV	450 kV
		20.a	- Secondary	230 kV	275 kV
		20.a	- Tertiary	95 kV	28 kV
		20.b	Impulse withstand voltage - Primary	950 kV (crest)	1050 kV (crest)
		20.b	Impulse withstand voltage - Secondary	550 kV (crest)	650 kV (crest)
		20.b	Impulse withstand voltage - Tertiary	250 kV (crest)	95 kV (crest)
		22.d	Details of bushings HV/LV/ HV neutral -Creepage distance	4650/1300/1300 mm	6125/3625/300 mm
	1.2.2 Technical Particulars for 132/33 kV Power Transformer	6.a	Rated capacity- ONAN/ONAF1/ONAF2	20/24/30 MVA	24/27/30 MVA
		8.a	Temperature rise	a)Temperature rise above 40°C ambient	a) Temperature rise above 50°C ambient
		8.b	Hottest spot temperature in winding limited to	55°C	68°C
		11.b	Taps-Tap steps	17	16
		14.b	OLTC-Rating-Rated voltage	72 kV	as required
		14.b	OLTC-Rating-Rated current (Normal)	150 A	as required
		14.b	OLTC-Rating-Number of steps	17 Nos	16 Nos
		16	Impedance at rated current and frequency - b) on maximum MVA base in ONAF	11.7%	12.5% for 63 MVA & >11% for 30 MVA
		20.a	Insulation level-Power frequency withstand voltage (1 min rms) - Primary	325 kV	275 kV
		20.a	-Secondary	95 kV	70 kV
		20.b	Impulse withstand voltage - Primary	750 kV (crest)	750 kV (crest)
		20.b	Impulse withstand voltage - Secondary	250 kV (crest)	170 kV (crest)
		22.d	Details of bushings HV/LV/ HV neutral -Creepage distance	4650/1300/1300 mm	3625/900/900 mm (or as per IEC)
		22.h	Impulse withstand voltage	750/250 kV peak	750/170 kV peak
	1.2.3 Technical Particulars for 33/11 kV Distribution Transformer	8.b	Hottest spot temperature in winding limited to	55°C	68°C
		11.b	Taps-Tap steps	17	16
		17.b	Impedance at rated current and frequency - b) on maximum MVA base in ONAF	8%	>8%
		21.a	Insulation level-Power frequency withstand voltage (1 min rms) - Primary	95 kV	75 kV
		21.a	-Secondary	28 kV	28 kV
		21.b	Impulse withstand voltage - Primary	250 kV (crest)	170 kV (crest)
		21.b	Impulse withstand voltage - Secondary	95 kV (crest)	75 kV (crest)

13. Volume II, Section- 1: Project Specific Requirement/4.0: DETAILED SCOPE OF WORK/ **4.1: New Butwal Substation:.**

F. Substation Automation System (SAS) & Communication system:

Substation Automation System (SAS) including .....the contractor shall also supply necessary BCUs (Bay Control Units) for monitoring & control of Auxiliary System.

S.No.	Description	Existing		Amended As	
		Unit	Quantity	Unit	Quantity
1.	**220 kV bays**	Nos.	01	Nos.	01
2.	**132 kV bays**	Nos.	03	Nos.	03
3.	**33 kV bays**	Nos.	12	Nos.	13
4.	**11 kV bays**	Nos.	08	Nos.	09

The contractor shall ..... as required.

14. Volume II, Section- 1: Project Specific Requirement/**6 PHYSICAL AND OTHER PARAMETERS:**

6.3 The fault level of all equipment to be supplied under present scope shall be as indicated below:

S. No.	Existing		Amended As	
	Voltage Level	Fault Level	Voltage Level	Fault Level
1	220 kV	40 kA for 1 Sec	220 kV	50 kA for 1 Sec
2	132 kV	31.5 kA for 1 Sec	132 kV	40 kA for 1 Sec
3	33 kV	25 kA for 3 Sec	33 kV	31.5 kA for 3 Sec
4	11 kV	25 kA for 3 Sec	11 kV	25 kA for 3 Sec

Note:

The insulation and Radio Interference Voltage (RIV) levels of the equipment shall be as per values given in the respective chapter of the equipment.

15. Volume II, Section- 1: Project Specific Requirement/**13.0 SPECIFIC REQUIREMENT:**

Existing

a. The ICT transformers (315 MVA, 220/132/11 kV) should meet all the criteria for parallel operation for New Butwal Substation.

Amended As

a. The ICT transformers (189/315 MVA, 220/132/11 kV) should meet all the criteria for parallel operation for New Butwal Substation. The contractor shall make all necessary arrangements to ensure the successful installation, testing, commissioning, and load energization of one transformer at the new ICT bay **prior to** the dismantling of the existing 100 MVA, 220/132/11 kV ICT. This sequence is to ensure that supply outages on the load side are minimized to the greatest extent possible.

16. Volume II, Section- 1: Project Specific Requirement/**13.0 SPECIFIC REQUIREMENT:**

Existing

d. Augmentation and integration work related to SCADA System

The 220, 132, 33, 11 kV bays under present scope at the substation shall be integrated by the contractor into existing SCADA system of GE T&D make SAS of Existing New Butwal Substation/ ABB make of existing Kushma Substation and Siemens 'SINAUT Spectrum' (version 4.3.2) installed at Master Station i.e. Nepal Electricity Authority Load Dispatch Centre (located at Siuchatar, Kathmandu). The integration shall include all hardware and software required at the Control Centre as well as necessary data base, display generation and upgrades for proposed control and monitoring of station and Network Analysis. The above activities shall be carried out as appropriate, in all of the stations viz. The manufacturers of the existing SCADA system are:

- LDC facilities: Siemens Germany
- RTU facilities: ABB Germany

Amended As

d. Augmentation and integration work related to SCADA System

The 220, 132, 33, 11 kV bays under present scope at the substation shall be integrated by the contractor into existing SCADA system of GE T&D make SAS of Existing New Butwal Substation/ ABB make of existing Kushma Substation and Siemens 'SINAUT Spectrum' (version 4.3.2) installed at Master Station i.e. Nepal Electricity Authority Load Dispatch Centre (located at Siuchatar, Kathmandu). The integration shall include all hardware and software required at the Control Centre as well as necessary data base, display generation and upgrades for proposed control and monitoring of station and Network Analysis. The above activities shall be carried out as appropriate, in all of the stations viz. The manufacturers of the existing SCADA system are:

- LDC facilities: Siemens Germany
- RTU facilities: ABB Germany

Additionally, with respect to the SIEMENS (SINAUT Spectrum) system at the Load Dispatch Centre, Kathmandu, the Contractor may carry out the required work with the assistance of the Load Dispatch Centre, subject to the payment of applicable charges, estimated at approximately NPR 3.2 million (including tax). Bidders are hereby advised to duly account for this cost under the relevant line item in the Bid Price Schedule when preparing their financial proposal.

17. Volume III, Schedule No.1: PART-A/ I: NEW BUTWAL SUBSTATION/2: SUBSTATION AUTOMATION/ COMMUNICATION / SCADA (Based on IEC 61850)

Existing

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Remarks
					FC			
			Unit	Quantity	Currency#	Unit Rate	Amount	
1	2	3	4	5	6	9	10 = (5) x (9)	
PART-A	EMPLOYER ASSESSED QUANTITIES							
I	NEW BUTWAL SUBSTATION							
2	SUBSTATION AUTOMATION/ COMMUNICATION / SCADA (Based on IEC 61850)							
2.1	Hardware, Software, accessories etc. for Integration of five (5) number of transformer bays with protection system under present scope with the GE T&D make SAS of Existing New Butwal Substation & into the SINAUT Spectrum (SIEMENS make) of the Load Dispatch Center, Kathmandu		Bay Nos	5				
2.2	Hardware, Software, accessories etc. for 33kV Bay Integration with GE T&D make SAS of Existing New Butwal Substation		Bay Nos	12				2 nos of spare bays
2.3	Hardware, Software, accessories etc. for 11kV Bay Integration with GE T&D make SAS of Existing New Butwal Substation		Bay Nos	8				
2.4	Provision for Control & Monitoring of 33kV &11kV system at 33kV & 11 kV Switchgear Control Building and master control room of New Butwal Substation, including all necessary hardware & software to complete the scope of work (including workstation, printer, switches & all other accessories)		Lot	1				

नेपाल विद्युत प्राधिकरण NEPAL ELECTRICITY AUTHORITY ESTD. 1985 New Butwal Kushma Substation Expansion Project

Amended As

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Remarks
					FC			
			Unit	Quantity	Currency#	Unit Rate	Amount	
1	2	3	4	5	6	9	10 = (5) x (9)	
PART-A	EMPLOYER ASSESSED QUANTITIES							
I	NEW BUTWAL SUBSTATION							
2	SUBSTATION AUTOMATION/ COMMUNICATION / SCADA (Based on IEC 61850)							
2.1	Hardware, Software, accessories etc. for Integration of bays with protection system under present scope with the GE T&D make SAS of Existing New Butwal Substation & into the SINAUT Spectrum (SIEMENS make) of the Load Dispatch Center, Kathmandu							
2.1.1	for 220 kV Bays		Bay Nos	1				
2.1.2	for 132 kV Bays		Bay Nos	3				
2.1.3	for 33kV Bays		Bay Nos	13				Including 2 nos of spare bays + 1 nos of Bus coupler
2.1.4	For 11 kV Bays		Bay Nos	9				
2.2	Provision for Control & Monitoring of 33kV &11kV system at 33kV & 11 kV Switchgear Control Building , including all necessary hardware & software to complete the scope of work (including workstation, printer, switches & all other accessories)		Lot	1				

नेपाल विद्युत प्राधिकरण
ESTD. 1985
NEPAL ELECTRICITY AUTHORITY
New Butwal Kushma Substation Expansion Project

18. Volume III, Schedule No.4 (a): Installation and Other Services/(a): Installation and Construction Charges: PART-A/ I: NEW BUTWAL SUBSTATION/2: SUBSTATION AUTOMATION/ COMMUNICATION / SCADA (Based on IEC 61850)

Existing

Sl. No.	Item Description	Type & Desig nation	Unit	Qty.	Portion in Nepalese Currency (in LC) #		REARKS
					Unit Rate	Total Charges	
(1)	(2)	(3)	(4)	(5)	(6)	7 = 6 x 5	
PART-A	**EMPLOYER ASSESSED QUANTITIES**						
I	**NEW BUTWAL SUBSTATION**						
2	**SUBSTATION AUTOMATION/ COMMUNICATION / SCADA (Based on IEC 61850)**						
2.1	Integration of five (5) number of transformer bays with protection system under present scope with the GE T&D make SAS of Existing New Butwal Substation & into the SINAUT Spectrum (SIEMENS make) of the Load Dispatch Center, Kathmandu		Bay Nos	5			
2.2	33kV Bay Integration with GE T&D make SAS of Existing New Butwal Substation		Bay Nos	12			
2.3	11kV Bay Integration with GE T&D make SAS of Existing New Butwal Substation		Bay Nos	8			
2.4	Provision for Control & Monitoring of 33kV &11kV system at 33kV & 11 kV Switchgear Control Building and master control room of New Butwal Substation, including all necessary hardware & software to complete the scope of work (including workstation, printer, switches & all other accessories)		Lot	1			

Amended As

Sl. No.	Item Description	Type & Desig nation	Unit	Qty.	Portion in Nepalese Currency (in LC) #		REARKS
					Unit Rate	Total Charges	
(1)	(2)	(3)	(4)	(5)	(6)	7 = 6 x 5	
PART-A	EMPLOYER ASSESSED QUANTITIES						
I	NEW BUTWAL SUBSTATION						
2	**SUBSTATION AUTOMATION/ COMMUNICATION / SCADA (Based on IEC 61850)**						
2.1	Integration of bays with protection system under present scope with the GE T&D make SAS of Existing New Butwal Substation & into the SINAUT Spectrum (SIEMENS make) of the Load Dispatch Center, Kathmandu						
2.1.1	for 220 kV Bays		Bay Nos	1			
2.1.2	for 132 kV Bays		Bay Nos	3			
2.1.3	for 33kV Bays		Bay Nos	13			Including 2 nos of spare bays + 1 nos of Bus coupler
2.1.4	For 11 kV Bays		Bay Nos	9			
2.2	Provision for Control & Monitoring of 33kV &11kV system at 33kV & 11 kV Switchgear Control Building , including all necessary hardware & software to complete the scope of work (including workstation, printer, switches & all other accessories)		Lot	1			

नेपाल विद्युत प्राधिकरण NEPAL ELECTRICITY AUTHORITY ESTD. 1985 New Butwal Kushma Substation Expansion Project

19. Volume III, **Schedule No. 4(e)**

Existing

Schedule No. 4 : Installation and Other Services

(e): Type Test Charges for Type Test to be Conducted Abroad

Sl No	Description of Tests	Testing Location	Test Charges	
			Currency	Amount
1	2	4	5	6
220/132/33 kV 3-Ph, 200 MVA Auto Transformer				
1	Temperature Rise test		USD	
2	Measurement of Harmonic Level in No Load Current		USD	
3	Measurement of Acoustic Noise Level		USD	
4	Measurement of Zero Seq. Reactance		USD	
5	Measurement of Power taken by Fans and Oil Pumps		USD	
	Total for Schedule 4(e) (Total of column 5 to be carried forward to Schedule 5: Grand Summary)			

Amended As

Schedule No. 4 : Installation and Other Services

(e): Type Test Charges for Type Test to be Conducted Abroad

Sl No	Description of Tests	Testing Location	Test Charges	
			Currency	Amount
1	2	4	5	6
I) 220/132/33 kV 3-Ph, 189/315 MVA Auto Transformer				
1	Temperature Rise test		USD	
2	Measurement of Harmonic Level in No Load Current		USD	
3	Measurement of Acoustic Noise Level		USD	
4	Measurement of Zero Seq. Reactance		USD	
5	Measurement of Power taken by Fans and Oil Pumps		USD	
II) 132/33 kV 3-Ph, 40/51.5/63 MVA Power Transformer				
1	Temperature Rise test		USD	
2	Measurement of Harmonic Level in No Load Current		USD	
3	Measurement of Acoustic Noise Level		USD	
4	Measurement of Zero Seq. Reactance		USD	
5	Measurement of Power taken by Fans and Oil Pumps		USD	
III) 33/11 kV 3-Ph, 20/24 MVA Power Transformer				
1	Temperature Rise test		USD	
2	Measurement of Harmonic Level in No Load Current		USD	
3	Measurement of Acoustic Noise Level		USD	
4	Measurement of Zero Seq. Reactance		USD	
5	Measurement of Power taken by Fans and Oil Pumps		USD	
	Total for Schedule 4(e) (Total of column 5 to be carried forward to Schedule 5: Grand Summary)			

For further details, please contact:

Project Manager,
New Butwal & Kushma Substation Expansion Project
Project Management Directorate
Nepal Electricity Authority
Telephone: +977 9851140623
E-mail address: nbksep@nea.org.np