

# NATIONAL TRANSMISSION AND DESPATCH COMPANY LIMITED

## BIDDING DOCUMENT NO. NOR-ADB-70R-A-2016

### PROCUREMENT OF 220 KV GRID STATION EQUIPMENT/MATERIALS UNDER ADB LOAN NO.3203 FOR POWER TRANSMISSION ENHANCEMENT INVESTMENT PROGRAM TRANCHE-IV

#### AMENDMENT NO. 04

1). Following Para may be added after Clause 4.2, Section-III, Page 3-3 of bidding document:

“4.3 For the purpose of bid evaluation the quoted price of different types of batteries shall be multiplied with the following factors for their comparison with Plante Type Batteries (having positive plate of pure lead lamellae with plant formation). For the said purpose the prices considered shall be without sales Tax for local manufacturers and for imported batteries CIF price shall be considered.

Type of Battery	Multiplying Factor
Plante	1
Tubular	1.4
Pasted	1.7

”

- 2). The Price Schedule For Goods To be Offered From Outside The Purchaser’s Country (LOT-III), Section-VI, Page # 55 to 63 is hereby replaced with the Pages attached herewith..
- 3). Item 2 & 3 of **Delivery and Completion Schedule**, Section-VI, Page# 6-3 may be replaced as following:

Item No.	Description of Goods or Related Services	Location	Delivery Schedule (Required)	Delivery Schedule (offered)
2.	a) Lot-II (220&132 kV Control Panels, Relay Panels, metering panels, Auxiliary Services Panels, testing equipment, spare parts etc. as per Price Schedule for Goods)	NTDC Warehouse Multan	180 days	

	<b>b) Lot-II</b> (Related services to be offered from outside & within the Purchaser's country)	At respective 220/132kV Substations	60 days(30 days for each substation) from the issuance of Notice of commencement of services from employer	
3.	<b>a) Lot-III</b> (220&132 kV Control Panels, Relay Panels, metering panels, Auxiliary Services Panels, testing equipment, spare parts etc. as per Price Schedule for Goods)	NTDC Warehouse Multan	180 days	
	<b>b) Lot-III</b> (Related services to be offered from outside & within the Purchaser's country)	At respective 220/132kV Substations	60 days(30 days for each substation) from the issuance of Notice of commencement of services from employer	

4). The following para may be added after Clause-4.15, Section-VI of bidding document:

“4.16- The existing clauses 4.1 and 5.2.1 of NTDC specification P-132:88 may be read/replaced as following:

5.2.1 The positive plates of the cells shall be either plante type or pasted type or tubular type or better. The plante type battery shall conform to B.S.6290 Part-2 (latest version). For pasted type batteries the weight of active material on positive plate shall neither be less than 12 grams/ampere-hour nor shall constitute more than 35%(by weight) of the finished dry plate. The grid weight shall be approximately 52% of the total weight of the plate. The characteristics of tubular type shall be better than pasted type.”

**Price Schedule For Goods**  
**To Be Offered From Outside The Purchaser's Country**  
 (LOT-III)<sup>1</sup>

(220&132 kV Control Panels, Relay Panels and Auxiliary Services Panels)

Name of Bidder \_\_\_\_\_ IFB Number \_\_\_\_\_ Page 1 of 19

1	2	3	4	5	6	7	8	9
Item	Description	Country of Origin	Unit of Measurement	Quantity	Unit Price FOB	Unit Price CIF (Karachi)	Unit Price CIP (to NTDC Warehouse Multan)	Total Price CIP
								<b>5 x 8</b>
<b>A</b>	<b><u>220 / 132kV Grid Station D.I.Khan</u></b>							
<b>1</b>	<b>220kV Control Panels as per NTDC Specification P-191:2007</b>							
i)	Line and Auto transformer control panel type C1		Nos.	2				
ii)	Synchronizing Panel type C6 (including manual synchronizing closing of 132kV bus coupler circuit breaker)		Nos.	1				
<b>2</b>	<b>220kV Relay Panels as per NTDC Specification P-191:2007</b>							
i)	Line protection relay panel (Set-I) type R1		Nos.	2				
ii)	Line protection relay panel (Set-II) type R2		Nos.	2				
iii)	Transformer protection relay panel (Set-I) type R3		Nos.	2				
iv)	Transformer protection relay panel (Set-II) type R4		Nos.	2				
v)	Breaker failure protection relay panel type R5 (without 132kV Breaker failure relay)		Nos.	2				
vi)	Trip circuit supervision relay panel type R6 (with trip circuit supervision relays for 132kV Circuit Breaker)		Nos.	2				
viii)	220kV relay panel R7 for Bus-I & Bus-II protection , decentralized low impedance type (consist of Central Units		Set	1				

<sup>1</sup> Bidder has also to fill in form provided herein for **Price Schedule for Related Services to Be Offered from outside & within the Purchaser's Country for Lot-III** only. The bid of bidder, who fail to provide the said Schedule of price, will be considered incomplete and declared as non-responsive.

1	2	3	4	5	6	7	8	9
Item	Description	Country of Origin	Unit of Measurement	Quantity	Unit Price FOB	Unit Price CIF (Karachi)	Unit Price CIP (to NTDC Warehouse Multan)	Total Price CIP
								<b>5 x 8</b>
	& Bay Units) or high impedance bus bar protection type(if all CTs are of same ratio and characteristics)							
<b>3</b>	<b>220kV Marshaling Kiosks per NTDC Specification P-191:2007</b>							
i)	Marshaling Kiosks Type S1 (for Bus-I side CBs)		Nos.	2				
ii)	Marshaling Kiosks Type S2 (for Bus-II side CBs)		Nos.	2				
iii)	Marshaling Kiosks Type S3(for Mid side CBs)		Nos.	2				
<b>4</b>	<b>132kV Control Panels as per NTDC Specification P-191:2007</b>							
i)	Line Control Panel CP-31 with Energy Meter of accuracy class 0.5S (P-202:2012 for energy meters)		Nos.	6				
ii)	Transformer Control Panel CP-51		Nos.	1				
iii)	Bus Coupler Control Panel CP-40		Nos.	1				
<b>5.</b>	<b>132kV Relay Panels as per NTDC Specification P-191:2007</b>							
i)	Bus Coupler Relay Panel RP-1		Nos.	1				
ii)	Line Relay Panel RP-3		Nos.	6				
iii)	Transformer Relay Panel RP-4		Nos.	1				
iv)	132 kV Relay Panel RP6 for Bus-I & Bus-II Protection, decentralized Low Impedance type (consist of Central Units & Bay Units) with built-in breaker failure & end zone fault protections.		Set	1				
<b>6.</b>	<b>132kV Marshaling Kiosk as per NTDC Specification P-191:2007</b>							
i)	Type S0 (for 220/132kV Auto-Transformer)		Nos.	2				
ii)	Type S1 (for 132kV Lines)		Nos.	6				
iii)	Type S2 (for 132/11kV Power Transformer)		Nos.	1				
iv)	Type S3 (for Bus Coupler)		Nos.	1				

1	2	3	4	5	6	7	8	9
Item	Description	Country of Origin	Unit of Measurement	Quantity	Unit Price FOB	Unit Price CIF (Karachi)	Unit Price CIP (to NTDC Warehouse Multan)	Total Price CIP
								<b>5 x 8</b>
<b>7.</b>	<b>Metering Panels P-199:08 &amp; P-202:12</b>							
i)	220kV Energy Meter Panel (without AC Power Transducers and paperless recorder) alongwith Energy meters (accuracy class 0.2S) for 220kV Line metering.							
a)	4-Line metering panel with 2 meters only (Panel should be wired for 4 meters).		Nos.	01				
ii)	132kV Revenue Energy Metering Panel (without AC Power Transducers and paperless recorder) with energy meters(accuracy class 0.2S) for Energy transfer metering							
a)	4-Line metering Panel with 2 meters only (Panel should be wired for 4 meters).		Nos.	01				
b)	Data Communication cubicle including but not limited to Optical Probe, RS232 lead, RS485 to Ethernet Converter, RS485 to RS232 Converter, RS485 to PSTN Converter/Modem, RS485 to GSM/GPRS Converter/Modem with GSM Antenna.		Nos.	01				
8	<b>AC/DC Auxiliary Supply Panels (As per requirement laid down in the bidding document, concept /logic diagrams &amp; technical schedule for AC/DC Auxiliary Supply System attached with the Tender document and NTDC Specification P-48:81)</b>							
i)	220V DC-I & II Auxiliary Supply Panels with both manual & automatic change over facility for 220kV system alongwith DC Emergency Bus Bars I & II.		Completer sets of panels	01				
ii)	110V DC-I & II Auxiliary Supply Panels with both manual & automatic change over facility for 132kV system alongwith DC Emergency Bus bars I & II.		Completer sets of panels	01				
iii)	415/240V AC-I & II Auxiliary Supply Panels with both manual & automatic change over facility utilizing two 11kV sources and one 300KVA Diesel Generator Set.		Completer sets of panels	02				
9.	<b>Miscellaneous Panels as per NTDC Specification P-191:2007</b>							
i)	Event Recorder Panel		Set	01				

1	2	3	4	5	6	7	8	9
Item	Description	Country of Origin	Unit of Measurement	Quantity	Unit Price FOB	Unit Price CIF (Karachi)	Unit Price CIP (to NTDC Warehouse Multan)	Total Price CIP
								<b>5 x 8</b>
ii)	Fault Recorder / Automatic Transient Recording Oscillograph for complete 220kV & 132kV system of Grid Station		Set	01				
10	Design & preparation of all schematic & interconnection drawings and installation, testing and commissioning of control, protection & metering panels as per <b>Item A of Price Schedule for Related Services to be offered from outside &amp; within the Purchaser's country(Lot-III).</b>		Lot	1				
<b>B</b>	<b><u>220 / 132kV Grid Station Chakdara</u></b>							
<b>1</b>	<b>220kV Control Panels as per NTDC Specification P-191:2007</b>							
i)	Line and Auto transformer control panel type C1		Nos.	2				
ii)	Synchronizing Panel type C6 (including manual synchronizing closing of 132kV bus coupler circuit breaker)		Nos.	1				
<b>2</b>	<b>220kV Relay Panels as per NTDC Specification P-191:2007</b>							
i)	Line protection relay panel (Set-I) type R1		Nos.	2				
ii)	Line protection relay panel (Set-II) type R2		Nos.	2				
iii)	Transformer protection relay panel (Set-I) type R3		Nos.	2				
iv)	Transformer protection relay panel (Set-II) type R4		Nos.	2				
v)	Breaker failure protection relay panel type R5 (without 132kV Breaker failure relay)		Nos.	2				
vi)	Trip circuit supervision relay panel type R6 (with trip circuit supervision relays for 132kV Circuit Breaker)		Nos.	2				
viii)	220kV relay panel R7 for Bus-I & Bus-II Protection, decentralized Low impedance type (consist of Central Units & Bay Units) or high impedance bus bar protection type(if all CTs are of same ratio & characteristics).		Set	1				
<b>3</b>	<b>220kV Marshaling Kioskas per NTDC Specification P-191:2007</b>							

1	2	3	4	5	6	7	8	9
Item	Description	Country of Origin	Unit of Measurement	Quantity	Unit Price FOB	Unit Price CIF (Karachi)	Unit Price CIP (to NTDC Warehouse Multan)	Total Price CIP
								<b>5 x 8</b>
i)	Marshaling Kiosks Type S1 (for Bus-I side CBs)		Nos.	2				
ii)	Marshaling Kiosks Type S2 (for Bus-II side CBs)		Nos.	2				
iii)	Marshaling Kiosks Type S3(for Mid side CBs)		Nos.	2				
<b>4</b>	<b>132kV Control Panels as per NTDC Specification P-191:2007</b>							
i)	Line Control Panel CP-31 with Energy Meter of accuracy class 0.5S (P-202:2012 for energy meters)		Nos.	6				
ii)	Transformer Control Panel CP-51		Nos.	1				
iii)	Bus Coupler Control Panel CP-40		Nos.	1				
<b>5.</b>	<b>132kV Relay Panels as per NTDC Specification P-191:2007</b>							
i)	Bus Coupler Relay Panel RP-1		Nos.	1				
ii)	Line Relay Panel RP-3		Nos.	6				
iii)	Transformer Relay Panel RP-4		Nos.	1				
iv)	132 kV Relay Panel RP6 for Bus-I & Bus-II Protection, decentralized Low Impedance type (consist of Central Units & Bay Units) with built-in breaker failure & end zone fault protections.		Set	1				
<b>6.</b>	<b>132kV Marshaling Kiosk as per NTDC Specification P-191:2007</b>							
i)	Type S0 (for 220/132kV Auto-Transformer)		Nos.	2				
ii)	Type S1 (for 132kV Lines)		Nos.	6				
iii)	Type S2 (for 132/11kV Power Transformer)		Nos.	1				
iv)	Type S3 (for Bus Coupler)		Nos.	1				
<b>7.</b>	<b>Metering Panels P-199:08 &amp; P-202:12</b>							
i)	220kV Energy Meter Panel (without AC Power Transducers and paperless recorder) alongwith Energy meters (accuracy class 0.2S) for 220kV Line metering.							

1	2	3	4	5	6	7	8	9
Item	Description	Country of Origin	Unit of Measurement	Quantity	Unit Price FOB	Unit Price CIF (Karachi)	Unit Price CIP (to NTDC Warehouse Multan)	Total Price CIP
								<b>5 x 8</b>
	a) 4-Line metering Panel with 2 meters only (Panel should be wired for 4 meters).		Nos.	01				
ii)	132kV Revenue Energy Metering Panel (without AC Power Transducers and paperless recorder) with energy meters(accuracy class 0.2S) for Energy transfer metering							
	a) 4-Line metering Panel with 2 meters only (Panel should be wired for 4 meters).		Nos.	01				
	b) Data Communication cubicle including but not limited to Optical Probe, RS232 lead, RS485 to Ethernet Converter, RS485 to RS232 Converter, RS485 to PSTN Converter/Modem, RS485 to GSM/GPRS Converter/Modem with GSM Antenna.		Nos.	01				
8	<b>AC/DC Auxiliary Supply Panels (As per requirement laid down in the bidding document, concept /logic diagrams &amp; technical schedule for AC/DC Auxiliary Supply System attached with the Tender document and NTDC Specification P-48:81)</b>							
i)	220V DC-I & II Auxiliary Supply Panels with both manual & automatic change over facility for 220kV system alongwith DC Emergency Bus Bars I & II.		Completer sets of panels	01				
ii)	110V DC-I & II Auxiliary Supply Panels with both manual & automatic change over facility for 132kV system alongwith DC Emergency Bus bars I & II.		Completer sets of panels	01				
iii)	415/240V AC-I & II Auxiliary Supply Panels with both manual & automatic change over facility utilizing two 11kV sources and one 300KVA Diesel Generator Set.		Completer sets of panels	02				
9.	<b>Miscellaneous Panels as per NTDC Specification P-191:2007</b>							
i)	Event Recorder Panel		Set	01				
ii)	Fault Recorder / Automatic Transient Recording Oscillograph for complete 220kV & 132kV system of Grid Station		Set	01				



1	2	3	4	5	6	7	8	9
Item	Description	Country of Origin	Unit of Measurement	Quantity	Unit Price FOB	Unit Price CIF (Karachi)	Unit Price CIP (to NTDC Warehouse Multan)	Total Price CIP
								<b>5 x 8</b>
10	Design & preparation of all schematic & interconnection drawings and installation, testing and commissioning of control, protection & metering panels as per <b>Item B of Price Schedule for Related Services to be offered from outside &amp; within the Purchaser's country(Lot-III).</b>		Lot	01				
<b>C</b>	<b><u>Mandatory Spare Parts:</u></b>							
1	<b>Mandatory Spare Parts</b>							
i)	Event Recorder:							
	a. Plug-in modules at least one of each type used		Set	02				
ii)	Oscillograph:							
	a. Plug-in modules at least one of each type used		Set	02				
iii)	Relay Boards and Relays:							
	<b>Line Protection Relays:</b>							
	a. 220kV Distance or Line Differential Relay Set-I relay of each type used		No.	02				
	b. 220kV Distance or Line Differential Relay Set-II relay of each type used		No.	02				
	c. 132kV Distance or Line Differential Relay of each type used		No.	02				
	d. 220kV O/C & E/F relay of each type used		No.	02				
	e. 132kV O/C & E/F relay of each type used		No.	02				
	f. All other auxiliary relays, miscellaneous relays, test blocks and accessories of each type used. (minimum 10% of installed quantity).		Lot	02				
	<b>Transformer Protection Relays:</b>							
	a. Transformer differential relays of each type used		No.	02				
	b. REF relay of each type used		No.	02				

1	2	3	4	5	6	7	8	9
Item	Description	Country of Origin	Unit of Measurement	Quantity	Unit Price FOB	Unit Price CIF (Karachi)	Unit Price CIP (to NTDC Warehouse Multan)	Total Price CIP
								<b>5 x 8</b>
	c. Overall %age Biased Differential Protection relay of each type used		No.	02				
	d. HV Connection protection relay of each type used		No.	02				
	e. LV Connection protection relay of each type used		No.	02				
	f. HV O/C & E/F relay of each type used		Lot	02				
	g. LV O/C & E/F relay of each type used		No.	02				
	h. Neutral O/C relay of each type used		No.	02				
	i. Tertiary O/C relay of each type used		No.	02				
	j. Thermal Over Load relay of each type used		No.	02				
	k. Over fluxing relay of each type used		No.	02				
	l. All other auxiliary relays, miscellaneous relays, test blocks and accessories of each type used. (minimum 10% of installed quantity).		Lot	02				
	<b>Miscellaneous Relays/Equipment/Material:</b>							
	a. 220kV Breaker Failure relay of each type used		No.	04				
	b. 220kV BB Protection relay of each type used		No.	02				
	c. 132kV BB Protection relay of each type used		No.	02				
	d. Synchronism check relay of each type used		No.	02				
	e. Trip circuit supervision relay (220VDC) of each type used		No.	8				
	f. Trip circuit supervision relay (110VDC) of each type used		No.	6				
	g. High speed, high burden self reset trip relay (220VDC) of each type used (8 NO + 2 NC)		No.	8				
	h. High speed, high burden self reset trip relay (110VDC) of each type used (8 NO + 2 NC)		No.	02				
	i. High speed, high burden Trip & Lock out relay (220VDC) of each type used (8 NO + 2 NC) or (18 NO + 2 NC)		No.	24 or 12				

1	2	3	4	5	6	7	8	9
Item	Description	Country of Origin	Unit of Measurement	Quantity	Unit Price FOB	Unit Price CIF (Karachi)	Unit Price CIP (to NTDC Warehouse Multan)	Total Price CIP
								<b>5 x 8</b>
	j. High speed, high burden Trip & Lock out relay (110VDC) of each type used (8 NO + 2 NC)		No.	04				
	k. All other auxiliary relays, miscellaneous relays, test blocks and accessories of each type used. (minimum 10% of installed quantity).		Lot	02				
	l. Test plug for protection relays and meters.		Nos.	10				
	m. Supervision relays for DC supply (220VDC) one of each type used		No.	02				
	n. Supervision relays for DC supply (110VDC) one of each type used		No.	02				
	o. Over current and ground fault relay for 132kV bus coupler one of each type used		No.	02				
	p. Laptop computer alongwith accessories		No.	02				
	q. Desktop computer alongwith accessories		No.	02				
	r. Laser Jet Printer alongwith accessories		No.	02				
<b>Total Amount</b>								

## Notes:

Column 6, 7 & 8: Incoterm in accordance with ITB Clause 14  
 Currency in accordance with ITB Clause 15

Column 6 & 7: Only to be used if the Purchaser wishes to reserve transportation and insurance to domestic companies or other designated sources. Identification of the lowest evaluated bid must be on the basis of the CIP price, but the Purchaser may sign the contract on FOB terms and make its own arrangement for transportation and/or insurance.

Name \_\_\_\_\_  
 In the capacity of \_\_\_\_\_  
 Signed \_\_\_\_\_  
 Duly authorized to sign the Bid for and on behalf of \_\_\_\_\_  
 Date \_\_\_\_\_