



RURAL ELECTRIFICATION
IN
NORTH-CENTRAL STATE OF NIGERIA
INDIVIDUAL SPECIFICATION
ON
DIESEL POWER STATION
AND
DISTRIBUTION SYSTEM

1975 JUNE

524
63.3
EX

JAPAN INTERNATIONAL COOPERATION AGENCY
GOVERNMENT OF JAPAN

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GOVERNMENT OF JAPAN

国際協力事業団	
受入 月日 '84. 3. 27	524
登録No. 02069	63.3
	EX

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	MAIADUA	
	KANKARA	
	SOBA	
	HUNKUYI	
	KUDAN	
	SHIKA	

I. GENERALE

- a) This Individual Specification is to describe town by town the quantity of such equipment and device as shall be delivered and installed for electrification of rural towns. Contractor shall deliver and install the equipment and device in conformity with the provisions specified herein.

With regard to the requirements common to all the towns, such as special conditions, technical specifications, characteristics, components and unit price, Contractor shall read carefully the "General Specification" separately made available. He shall also quote his total price in SCHEDULE OF TOTAL PRICE attached hereto and make all necessary entries in SCHEDULE OF CHARACTERISTICS and SCHEDULE OF COMPONENTS AND UNIT PRICE attached to the "General Specification".

II. SCOPE OF WORKS

Location of each and every town as well as the power station and distribution system to be constructed and installed there are given in outline in Table 1.

Table 1. SCOPE OF WORKS

Name of Town	Position of Town			Diesel Power Station			Distribution System			
	Distance approxi- mate (km)	From Town	Nature of Approach Road	Diesel Electric Generator (kW)	Step Up Trans- former (kVA)	Substation	Length of H. V. Lines (km)	Length of H. V.-L. V. Lines (km)	Length of L. V. Lines (kVA)	Length of Street Light- ing Lines (km)
Kachia	150	Kaduna	tarred road	229x3	700x1	100x4	1.0	2.3	4.6	0.8
Makarfi	45	Zaria	tarred road	229x2	500x1	100x3	2.5	1.3	3.8	0.7
Jibiya	46	Katsina	tarred road	229x2	500x1	100x4	4.2	0.7	11.1	0.6
Musawa	91	Funtua	tarred road	115x2	300x1	100x2	3.0	0.4	5.0	0.7
Zonkwa	177	Kaduna	tarred road	229x3	700x1	100x7	2.9	2.6	5.3	0.8
Maiadua	23	Daura	tarred road partly un- tarred road	115x2	300x1	100x2	-	0.6	4.4	0.6
Kankara	70	Funtua	tarred road	229x2	500x1	100x3	1.4	1.0	4.1	0.8
Soba	80	Zaria	tarred road	229x3	700x1	100x4	0.4	1.1	3.8	0.5
Hunkuyi	17	Zaria	tarred road	75x2	200x1	100x1	-	0.3	3.4	0.3
Kudan	28	Zaria	tarred road	75x2	200x1	100x1	-	0.4	5.0	0.8
Shika	15	Zaria	tarred road	75x2	200x1	100x1	0.2	0.2	2.6	0.5

III. SCHEDULE OF TOTAL PRICE

Total price shall be quoted through addition of all the unit prices quoted in SCHEDULE OF COMPONENTS AND UNIT PRICE attached to the "General Specification".

SCHEDULE NO. III
ITEM NO. III-1
TOTAL PRICES OF
TOWN ELECTRIFICATION

Description	See ITEM No.	Quantity										Total Unit Price (₹)	Total Price (₹)				
		Kachia	Makarfi	Jibiya	Musawa	Zonkwa	Maidua	Kankara	Soba	Hunkuyi	Kudan			Shika			
1) Power Station																	
Diesel electric generator 75 kW	II-1	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	4
" " 115 kW	II-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
" " 229 kW	II-3	3	2	2	-	3	-	2	-	-	-	-	3	-	-	-	15
Fuel storage tank 5000 L	II-4	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	4
" " 10000 L	II-5	-	2	2	-	2	-	2	-	-	-	-	2	-	-	-	12
" " 15000 L	II-6	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	4
Compressed air supply	II-7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10
Water softening equipment	II-8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10
Step up transformer 200 kVA	II-9	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	2
" " 300 kVA	II-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
" " 500 kVA	II-11	-	1	1	-	-	-	1	-	-	-	-	-	-	-	-	3
" " 700 kVA	II-12	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
11kV switchgear box - 11kV arrester box	II-13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10
Power station L. V. distribution board	II-14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10
Supervisory panel	II-15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10
D. C. supply	II-16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10
Overhead travelling crane 4 ton	II-17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
" " 5 ton	II-18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
" " 6 ton	II-19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6
Power station: Lighting	II-20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10
Power station: Earthing and Lightning protection	II-21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10
Power station: Civil works type I	II-22	1	1	1	-	1	-	1	-	1	-	1	-	-	-	-	6
II	II-23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
III	II-24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Survey for power station site	II-25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10

* Power Station Sub-Total Price

SCHEDULE NO. III
ITEM NO. III-2
TOTAL PRICES OF
TOWN ELECTRIFICATION

See ITEM No.	Description	Quantity											Total Unit Price (₦)	Total Price (₦)								
		Kachia	Makarfi	Jibya	Musawa	Zonkwa	Matadua	Kankara	Soba	Hunkuyi	Kudan	Shika										
II-26	2) Distribution System	7	9	16	0	8	4	10	8	5	0	6	5	3	3	7	5	4	3	0	79	6
II-27	Survey for distribution line route Pole Type (H. V. only)	19	24	39	30	26	-	13	9	-	-	-	-	-	-	-	-	-	-	-	5	155
	Intermediate	5	5	6	7	4	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-	32
	Angle (1) (5° - 20°)	-	1	3	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
	Angle (2) (20° - 45°)	1	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
	Section (1) - Intermediate	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	Section (2) - Angle (45° - 90°)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11
	Section (3) - H pole special Tee off	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	3
II-28	Pole Type (H. V. and L. V. common used)	33	18	9	6	47	8	12	14	5	6	3	161									
	Intermediate	8	4	2	2	8	2	3	4	1	2	1	37									
	Angle (1) (5° - 20°)	3	-	-	1	4	-	-	-	-	-	-	8									
	Angle (2) (20° - 45°)	-	-	-	-	-	3	-	-	-	-	-	3									
	Section (1) - Intermediate	-	-	-	-	-	-	-	-	-	-	-	0									
	Section (2) - Angle (45° - 90°)	-	-	-	-	-	-	-	-	-	-	-	0									
	Intermediate with L. V. Tee Off (3 ways)	8	5	2	1	3	-	1	6	1	1	2	30									
	Intermediate with L. V. Tee Off (4 ways)	1	-	1	-	-	1	2	-	1	1	-	7									
	Intermediate - H pole H. V. Section	2	-	-	-	2	1	1	-	-	-	-	6									
	Tee off (1) - H. V., L. V. Tee Off	1	1	-	-	-	-	5	-	1	1	-	9									
	Tee off (2) - H pole L. V. three or four ways	2	3	3	2	3	1	2	3	1	1	1	22									
	Tee off (3) - H pole L. V. three or four ways	1	2	2	-	3	-	-	1	-	-	-	9									

SCHEDULE NO. III
ITEM NO. III-3

TOTAL PRICES OF
TOWN ELECTRIFICATION

See ITEM No.	Description	Quantity										Total Unit Price (₹)	Total Price (₹)	
		Kachia	Makarfi	Jibiya	Musawa	Zonkwa	Maiadua	Kankara	Soba	Hunkuyi	Kudan			Shika
II-29	Pole Type (L. V. Only)	48	32	125	55	55	44	40	36	39	52	24	550	
	Intermediate	16	6	-	-	-	-	-	-	-	-	-	22	
	Intermediate (special)	25	28	58	24	32	19	17	27	27	30	14	301	
	Angle (1) (5° - 90°)	9	3	-	-	-	-	-	-	-	-	-	12	
	Angle (2) (5° - 90°) (special)	1	1	8	2	2	4	3	1	-	2	-	24	
	Section (1) Intermediate	-	1	-	-	-	-	-	-	-	-	-	1	
	Section (2) Intermediate (special)	2	6	18	12	15	7	10	11	6	8	7	102	
	Intermediate with Tee Off (Three Ways)	1	1	28	7	5	12	6	1	1	13	4	78	
	Intermediate with Tee Off (Four Ways)	15	19	68	27	28	29	32	21	15	33	19	296	
	Terminal	8.9	10.9	13.7	9.7	16.0	1.3	6.7	4.0	0.4	0.7	0.7	73.0	
II-30	A.A.C. (km) H. V.	-	-	-	-	-	-	-	-	-	-	-	0	
	L. V.	19.6	19.9	46.2	21.1	31.1	19.5	19.9	19.1	14.3	21.1	10.7	242.5	
	50 mm ²	2.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	13.0	
	100 mm ²	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	1.2	
	50 mm ²	50	50	50	50	50	50	50	50	50	50	0	500	
II-31	L. V.	50	50	50	50	50	50	50	50	50	50	0	500	
	Transformer Substation with Cable and Pole Parts	-	-	-	-	-	-	-	-	-	-	-	0	
II-32	100 kVA L. V. 2 Ways	-	-	1	-	2	-	-	-	-	-	-	3	
	L. V. 3 Ways	4	3	3	2	5	2	3	4	1	1	1	29	
II-33	200 kVA L. V. 2 Ways	-	-	-	-	-	-	-	-	-	-	-	0	
	L. V. 3 Ways	-	-	-	-	-	-	-	-	-	-	-	0	
	Cable Head with Pole Parts	1	1	1	1	1	1	1	1	1	1	-	10	
	H. V. (Diesel Power Station) L. V.	1	1	1	1	1	1	1	1	1	1	-	10	

SCHEDULE NO. III
ITEM NO. III-4

TOTAL PRICES OF
TOWN ELECTRIFICATION: North Central State

Description	See ITEM No.	Quantity											Total Unit Price (₦)	Total Price (₦)		
		Kachia	Makarfi	Jibiya	Musawa	Zonkwa	Matadua	Kankara	Soba	Hunkuyi	Kudan	Shika				
Lightning Arresters with Parts	II-34	6	12	21	15	15	-	-	-	-	-	-	-	-	69	
Street Lighting	II-35	20	20	17	19	22	16	21	14	10	20	13	192			
Street Lightings with parts		2	4	2	2	1	3	3	2	1	1	1	22			
Street Lighting Panel		0.8	0.7	0.6	0.7	0.8	0.6	0.8	0.5	0.3	0.8	0.5	7.1			
Conductors (km) A.A.C. 50 mm ²		40	40	34	38	44	32	42	28	20	40	26	384			
Insulated Cable (m)		148	114	247	147	289	204	153	216	144	131	36	1829			
Service Connections (small)		4	1	2	1	4	0	1	2	0	0	0	15			
Service Connections (big)																
*Distribution System Sub-Total Price																
3) Others																
Accessories	II-37	1	1	1	1	1	1	1	1	1	1	1	11			
Spare Parts	II-38	1	1	1	1	1	1	1	1	1	1	1	11			
Personal Training	II-39	1	1	1	1	1	11	1	1	1	1	1	11			
*Others Sub-Total Price																
TOTAL PRICE																

