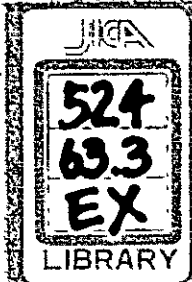


RURAL ELECTRIFICATION
IN
NORTH-EASTERN STATE OF NIGERIA

INDIVIDUAL SPECIFICATION
ON
DIESEL POWER STATION
AND
DISTRIBUTION SYSTEM

1975 JUNE

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY
GOVERNMENT OF JAPAN



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国際協力事業団	
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	JAMA'ARE	
	NINGI	
	MONGUNO	
	MICHIKA	
	DADIN KOWA	
	SHIRA	
	TAFAWA BALEWA	

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 (kVA)	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)
Damaturu	123	Maiduguri	tarred road	229x3	700x1	200x1 100x3	-	2.3	10.6	1.7
Darazo	130	Bauchi	tarred road	229x3	700x1	100x5	2.8	1.6	4.3	0.7
Jama'are	80	Azare	tarred road partly un- tarred road	229x3	700x1	100x3	-	1.0	5.1	1.2
Ningi	120	Azare	tarred road partly un- tarred road	229x2	500x1	200x1 100x3	0.7	2.0	9.0	1.2
Monguno	140	Maiduguri	tarred road	229x2	500x1	100x3	0.6	1.8	8.5	1.1
Michika	185	Maiduguri	tarred road	229x2	500x1	100x4	1.6	2.0	9.2	0.9
D. Kowa	40	Gombe	tarred road	115x2	300x1	100x3	0.5	1.4	8.0	1.2
Shira	30	Azare	tarred road	75x2	200x1	100x1	-	0.3	4.6	0.6
T. Balewa	85	Bauchi	untarred road partly seasonal truck	115x2	300x1	100x1	-	0.5	4.2	0.3

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 (₹)				
		Darnature	Darazo	Jannare	Ningl	Monguno	Michika	Dadin	Kowa	Shira	Tafara			Baleya			
1) Power Station																	
Diesel electric generator 75 kW	II-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
" " 115 kW	II-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
" " 229 kW	II-3	3	3	3	2	2	2	-	-	-	-	-	-	-	-	-	15
Fuel strage tank 5000 L	II-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
" " 10000 L	II-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
" " 15000 L	II-6	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	6
Compressed air supply	II-7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Water softening equipment	II-8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Step up transformer 200 kVA	II-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
" " 300 kVA	II-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
" " 500 kVA	II-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
" " 700 kVA	II-12	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	3
11 kV switchgear box - 11 kV arrester box	II-13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Power station L.V. distribution board	II-14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Supervisonary panel	II-15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9
D. C. supply	II-16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Overhead travelling crane 4 ton	II-17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
" " 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	9
Power station: Earthing and Lighting protection	II-21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Power station: Civil works Type I	II-22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6
Type II	II-23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Type III	II-24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Survey for power station site	II-25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9
*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 (₹)
		Damaturu	Darazo	Jama'are	Ningi	Monguno	Michika	Dadin	Kowa	Shira	Tafara		
II-26	2) Distribution System Survey for distribution line route km Pole Type (H. V. Only)	12.9	8.7	6.1	11.7	10.9	12.8	9.9	4.9	4.7	82.6		
II-27	Intermediate Angle (1) (5° - 20°) Angle (2) (20° - 45°) Section (1) - Intermediate Section (2) - Angle (45° - 90°) Section (3) - H pole special Tee off	27	6	7	7	15	5	-	-	-	67		
		6	1	2	2	3	1	-	-	-	15		
		1	-	-	-	1	-	-	-	-	2		
		-	1	-	-	-	-	-	-	-	1		
		-	-	-	-	-	-	-	-	-	0		
		1	1	1	1	1	1	1	1	1	9		
		-	-	-	-	3	1	-	-	-	4		
II-28	Pole Type (H. V. and L. V. common used) Intermediate Angle (1) (5° - 20°) Angle (2) (20° - 45°) Section (1) - Intermediate Section (2) - Angle (45° - 90°) Intermediate with L. V. Tee off (3 ways) Intermediate with L. V. Tee off (4 ways) Intermediate - H pole H. V. Section Tee Off (1) - H. V., L. T. Tee off Tee Off (2) - H pole-L. V. three or four ways Tee Off (3) - H pole-L. V. three or four ways	34	20	16	31	29	26	22	6	7	191		
		6	4	3	6	6	6	5	1	2	39		
		2	1	1	2	1	1	1	-	-	9		
		-	1	-	-	-	-	-	-	-	1		
		-	-	-	-	-	-	-	-	-	0		
		9	7	1	2	5	12	2	1	2	41		
		2	3	3	4	2	2	4	-	1	21		
		2	3	-	1	-	-	-	-	1	7		
		-	-	-	1	-	-	-	-	-	1		
		3	5	2	3	2	2	3	1	1	22		
		1	-	1	1	1	2	-	-	-	6		

SCHEDULE NO. III
ITEM NO. III-3
TOTAL PRICES OF
TOWN ELECTRIFICATION

Description	See Item No.	Quantity										Total Unit Price (₹)	Total Price (₹)
		Damaturu	Darazo	Jamaare	Ningi	Monguno	Michika	Dadin	Kowa	Shira	Tafara		
Pole Type (L. V. Only)	II-29	134	44	48	110	99	107	84	55	53	634		
Intermediate		-	-	11	-	-	-	-	-	-	11		
Intermediate (special)		59	27	29	56	51	65	42	26	32	387		
Angle (1) (5° - 90°)		-	-	-	-	-	-	-	-	-	0		
Angle (2) (5° - 90°) (special)		3	3	3	3	-	4	3	1	2	22		
Section (1) Intermediate		-	-	-	-	-	-	-	-	-	0		
Section (2) Intermediate (special)		7	11	4	7	22	17	22	13	6	109		
Intermediate with Tee off (three ways)		23	4	6	16	7	4	11	4	2	77		
Intermediate with Tee off (four ways)		63	23	24	49	41	37	50	19	13	319		
Terminal		5.9	12.1	2.5	7.1	6.2	9.8	5.2	0.9	1.0	50.7		
A. A. C. (km)		-	-	-	-	-	24	-	-	-	2.4		
H. V. 50 mm ²		50.6	23.1	23.9	43.0	40.2	43.4	36.6	18.6	18.3	297.7		
L. V. 100 mm ²		2.0	1.0	1.0	2.0	2.0	2.0	1.5	1.0	1.0	13.5		
50 mm ²		0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.0		
Insulated conductors for line		50	50	50	50	50	50	50	50	50	450		
Insulated conductors for pole		50	50	50	50	50	50	50	50	50	450		
Cable (m)		50	50	50	50	50	50	50	50	50	450		
H. V. 70 mm ²		-	-	-	-	-	-	-	-	-	-		
L. V. 70 mm ²		-	-	-	-	-	-	-	-	-	-		
Transformer Substation with Cable and Pole Parts	II-32	1	1	-	1	-	1	1	-	-	5		
100 kVA L. V. 2 ways		2	4	3	2	3	3	2	1	1	21		
L. V. 3 ways		1	-	-	-	-	-	-	-	-	1		
200 kVA L. V. 2 ways		-	-	-	-	-	-	-	-	-	-		
L. V. 3 ways		-	-	-	1	-	-	-	-	-	1		
Cable Head with Pole Parts	II-33	1	1	1	1	1	1	1	1	1	9		
H. V.		1	1	1	1	1	1	1	1	1	9		
L. V.		6	15	-	6	-	6	3	-	-	36		
Lightning Arresters with Parts	II-34												

SCHEDULE NO. III
ITEM NO. III-4

TOTAL PRICES OF
TOWN ELECTRIFICATION

Description	Sec ITEM No.	Quantity										Total Unit Price (\$)	Total Total Price (\$)
		Damaturu	Darazo	Jamaare	Ningi	Monguno	Michika	Dadin	Kowa	Shira	Tafara		
Street Lighting	II-35	44	19	31	31	30	24	31	17	9	236		
Street Lightings with parts		4	4	4	3	3	3	3	2	1	27		
Street Lighting panel		1.7	0.7	1.2	1.2	1.1	0.9	1.2	0.6	0.3	8.9		
Conductors (km) A.A.C. 50 mm ²		88	38	62	62	60	48	62	34	18	472		
Insulated Cable (m)		293	260	267	188	172	287	146	107	120	1,840		
Service Connections (small)	II-36	2	3	4	2	1	1	1	1	1	16		
Service Connections (big)													
*Distribution System Sub-Total Price													
3) Others													
Accessories	II-37	1	1	1	1	1	1	1	1	1	9		
Spare parts	II-38	1	1	1	1	1	1	1	1	1	9		
Personal training	II-39	1	1	1	1	1	1	1	1	1	9		
*Others Sub-Total Price													
TOTAL PRICE													

