

Annexure - I
SCHEDULE/BOQ OF ITEMS

GENERAL	
1	Quantities indicated herein is for deciding the standing of the vendors. The exact quantity to be ordered will be project specific. BHEL does not guarantee for placement of order for the entire quantity and/or any/all items mentioned in this BOQ.
2	The total quantity to be ordered against this rate contract for various projects within the effective period of rate contract (2 years) may vary to any extent. However, the rates quoted/accepted by BHEL against this rate contract shall remain firm within the currency period of the rate contract.
3	The scope of consultant is for complete design of transmission system. Any re-design, modifications, extensions required in tower structure/foundation/route during tower testing or site execution is deemed to be included in above design work.

Sl. No	Item Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
A	<u>DURING TENDER STAGE</u>				
1	Reconnaissance & Preliminary Survey				
(a)	Conducting reconnaissance/walkover & preliminary survey using GPS & topo sheets for three alternative routes, suggesting the best optimum route, identifying/fixing point for crossings such as river, railway, power line, telecom, road forest, fixing of angle points & submission of preliminary survey report all complete as per directions of BHEL including its approval from BHEL.	per km	20		
2	Geo-Technical Investigation				
(a)	Drilling boreholes of 150mm dia. upto 4M depth or refusal at specified locations including performing SPT, collecting disturbed and undisturbed samples, recording water table etc., submission of report all complete as per specification. at various location along the route and when terrain changes, including its approval from BHEL/Customer.	per no.	10		
(b)	Making trial pits 1M x 1M x 3M at specified locations and taking undisturbed samples, etc., & submission of report all complete including its approval from BHEL/Customer	per no.	10		
3	Line BOQ				
	Providing complete Line BOQ including supply, civil works and erection of all items for the purpose of cost estimation including its approval from BHEL.	per project/per voltage level	6		

Sl. No	Item Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
B	DURING CONTRACT STAGE				
1	Reconnaissance & Preliminary Survey				
(a)	Conducting reconnaissance/walkover & preliminary survey using GPS & topo sheets for three alternative routes, suggesting the best optimum route, identifying/fixing point for crossings such as river, railway, power line, telecom, road forest, fixing of angle points & submission of preliminary survey report all complete as per project specific specification & directions of BHEL including its approval from BHEL/Customer .	per kM	30		
2	Detailed Survey				
(a)	Detailed survey including modification in preliminary route alignment, adjustment in section details to achieve better average span, profiling, collecting actual field data along the selected route (enumeration of salient land features like crossing of rivers, nalla, road, railway lines, other transmission / distribution line, nearby habitations, forest land, proximity to airport, etc.), tower spotting & providing tower schedule with detailed land schedule (Plot No/Khata No, etc) for each tower location, estimation of tower quantities with extension and special tower requirement, sag template, marking on Khasra map, tree enumeration, etc. & submission of detailed survey report, all complete as per project specific specification & directions of BHEL including its approval from BHEL/Customer.	per kM	60		
3	Geo-Technical Investigation & Soil Resistively Measurements				
(a)	Conducting detailed soil investigation at various tower locations and at other locations as per instruction of BHEL/Customer including mobilization of necessary equipment, providing necessary engineering supervision and technical personnel, carrying out field investigation and tests, laboratory tests, analysis and interpretation of data and results and working out tentative quantity of foundation work, preparations for the type of foundations and the safe bearing capacity for different sizes of foundations, different foundation strata for the various locations along the transmission lines all complete, submission of report as per project specific specification & directions of BHEL including its approval from BHEL/Customer Boreholes (upto 7M depth or refusal)	per no.	60		
(b)	Performing soil resistivity along the route for each tower location and working out tentative quantity of earthing material all complete as per project specific specification & directions of BHEL including its approval from BHEL/Customer .	per location	20		

Sl. No	Item Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
4	Design/Drawing of Transmission Line Towers (Lattice/Tubular), Pole Structures including Extensions				
(a)	Preparation & submission of design documents, structural drawings for 400 kV Normal Towers including stub, template and tower extension drawings, bill of materials of all members all complete as per project specific specification & directions of BHEL including their approval from BHEL/Customer. (Type - Any Type A, B, C, D)	per type	6		
(b)	Preparation & submission of design documents, structural drawings for 220 kV Normal Towers including stub, template and tower extension drawings, bill of materials of all members all complete as per project specific specification & directions of BHEL including their approval from BHEL/Customer. (Type - Any Type A, B, C, D)	per type	4		
(c)	Preparation & submission of design documents, structural drawings for 66-132 kV Normal Towers including stub, template and tower extension drawings, bill of materials of all members all complete as per project specific specification & directions of BHEL including their approval from BHEL/Customer. (Type - Any Type A, B, C, D)	per type	2		
(d)	Preparation & submission of design documents, structural drawings for upto 33 kV Normal Towers including stub, template and tower extension drawings, bill of materials of all members all complete as per project specific specification & directions of BHEL including their approval from BHEL/Customer. (Type - Any Type A, B, C, D)	per type	6		
(e)	Preparation & submission of design documents structural drawings for Pole Structure (below 66 kV) including bill of materials of all members including their approval from BHEL/Customer all complete as per project specific specification & directions of BHEL.	per type	2		
5	Design/Drawing of Transmission Line Tower Foundations				
(a)	Preparation & submission of design documents & drawing for 220-400 kV Normal Tower based on approved loads on foundations & soil data all complete as per project specific specification & directions of BHEL including their approval from BHEL/Customer.	per type (for each soil type)	30		
(b)	Preparation & submission of design documents & drawing for 33-132 kV Normal Tower based on approved loads on foundations & soil data all complete as per project specific specification & directions of BHEL including their approval from BHEL/Customer.	per type (for each soil type)	15		
(c)	Preparation & submission of design documents & drawing for Pole structure (below 66 kV) based on approved loads on foundations & soil data all complete as per project specific specification & directions of BHEL including their approval from BHEL/Customer.	per type (for each soil type)	2		

Sl. No	Item Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
6	Bill of Quantity for Transmission Line Materials based on the detailed survey				
a)	Preparation & submission of bill of materials (in format as per Annexure II) for all transmission line materials like structures, hardwares, earthwires, earthwire accessories, conductors, conductor accessories, insulators and insulator hardware etc., all complete as per project specific specification & directions of BHEL including their approval from BHEL/Customer.	per project/ per voltage level	6		
7	Stringing Charts of Total Transmission Line				
(a)	Preparation & submission of Stringing Charts of conductor all complete as per project specific specification & directions of BHEL including their approval from BHEL/Customer (Unit is Sheet which is considered as Tension to Tension Location)	per sheet	60		
(b)	Preparation & submission of Stringing Charts of earthwire all complete as per project specific specification & directions of BHEL including their approval from BHEL/Customer. (Unit is Sheet which is considered as Tension to Tension Location).	per sheet	60		
(c)	Preparation & submission of Documentation - Erection Procedure (Stringing Procedure etc) as per project specific specification including their approval from BHEL/Customer.	per project	4		
8	Visit to Site /BHEL's Office/Customer's Office/Supplier's Works.				
(a)	LS Allowance per day including boarding, lodging, local conveyance, etc., all inclusive. (BHEL shall pay to & fro Ist AC fare from Bidder's headquarters to Site/Customer's /Consultant's office for each visit separately).	per day	20		
	Total Amount (Rs.)				