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HIMACHAL PRADESH POWER TRANSMISSION CORPORATION LTD.

(A State Govt. Undertaking)

Regd. Office: Himfed Bhawan, New ISBT Road, Panjari, Shimla-171005

Ph.: 0177-2831283, 2831284 FAX:-0177-2831284

(CIN): U40101HP2008SGC030950

(GSTIN): 02AACCH1548M1ZP

HPPTCL /F&A/REC/Karian & Phojal/ 2019-20-

Dated: 19/06/2019.

To

The Chief Project Manager,
M/S Rural Electrification Corporation Ltd.
Pt. Padam Dev Complex, Ph-2, the Ridge,
Shimla-1(H.P.)

Subject: CONSTRUCTION OF 220/33 KV GIS SUBSTATION AT KARIAN AND PHOJAL ALONG WITH ASSOCIATED LINES.

Ref: 1. Scheme Code REC/PO/HP-TD-TRM-295-210-3781.
2. No. REC/PO/HP-TD-TRM-295-210-3781/2013-14/1385-91 Dated: 11.03.2014.

Dear Sir,

Refer to above, the revised scheme for the construction of 220 KV D/C Transmission Line from Phozal to Patlikul along with 220/33 kV 80/100 MVA GIS Sub-station Phozal, Distt. Kullu and construction of 220kV D/C Transmission Line from Karian-Rajera and 220/33 kV GIS Substation at Karian against the original scheme code: 3781 is enclosed herewith for seeking the additional loan of Rs 40 Cr. from M/S REC Ltd.

This is for kind information and necessary action in the matter, please.

Yours faithfully

Dy. General Manager (Finance)
HPPTCL, Shimla-05

CC:

1. P.S. to the Managing Director, HPPTCL, Himfed Bhawan Shimla-05.
2. P.S to the Director (Projects), HPPTCL, Himfed Bhawan Shimla-05.
3. General Manager (Projects), HPPTCL, Himfed Bhawan Shimla-05.
4. Dy. General Manger (Projects), HPPTCL, Kullu & Chamba Zone.

Dy. General Manager (Finance)
HPPTCL, Shimla-05



H.P Power Transmission Corporation Limited

(A State Govt. Undertaking)

Regd. Office: Himfed Bhawan, New ISBT Road, Panjari, Shimla-171005
Phone-0177-2831283, 2831284 FAX:-0177-2831284 Web:-www.hpptcl.com
(CIN): U40101HP2008SGC030950
(GSTIN):02AACCH1548M1ZP

NO:-HPPTCL/Revised Scheme/Phozal/F-44/2018-5346-50 Dated:- 27-07-18

15-01-19

To

✓ The Rural Electrification Corporation Ltd.
Pt. Padam Dev Complex, Ph-2, The Ridge,
Shimla-1(H.P.)

Subject:- Revised Scheme for the C/O 220 KV D/C Transmission Line from Phozal to Patlikul amounting to Rs.16.81 Crore and C/o 33/220 kV 80/100 MVA GIS Sub-station Phozal, Distt. Kullu amounting to Rs. 76.82 Crore: Scheme Code REC/PO/HP-TD-TRM-295-210-3781.

Reff: No. REC/PO/HP-TD-TRM-295-210-3781/2013-14/1385-91 Dated: 11.03.2014.

Sir,

Revised scheme for the construction of 220 KV D/C Transmission Line from Phozal to Patlikul along with C/o 33/220 kV 80/100 MVA GIS Sub-station Phozal, Distt. Kullu against the original scheme code : 3781 is enclosed for obtaining the revised sanction of the competent authority please.

D.A. - Two No. Schemes.

Yours faithfully,


G.M. (Projects),
HPPTCL, Himfed Bhawan,
Panjari, Below old MLA Quarters,
Shimla-05, (H.P.) 

Copy forwarded to the following for information:-

1. The P.S. to Managing Director HPPTCL, Himfed Bhawan, Shimla -05 for kind information of worthy Managing Director please.
2. The PS to Director (Projects), HPPTCL, Himfed Bhawan, Shimla-05 for kind information of worthy Director (Projects) Please.
3. The AGM, HPPTCL Transmission Line Design Office, Anu, Distt. Hamirpur, H.P.
4. The DGM HPPTCL, Chamba & Kullu for information.


G.M. (Projects),
HPPTCL, Himfed Bhawan,
Panjari, Below old MLA Quarters,
Shimla-05, (H.P.)

Deviation of Scheme CODE No. 3781

S.No.	Particulars	Unit	As per Original Sanction			Proposed deviation approved		Final Amount For Approval		Deviation
			Qty	Rate (in Rs. Lakhs)	Am't (in Rs. Lakhs)	Qty	Rate as Per award (in Rs. Lakhs)	Am't (in Rs. Lakhs)	Am't (in Rs. Lakhs)	
1	Construction of 220/33 kV GIS Pooling Substation Fozal	No.	1	5535.19	5535.19	-	-	-	-	-
1(a)	Construction of 220/33 kV GIS Pooling Substation Fozal	No.	0	-	-	1	4185.73	4185.73	7681.88	3492.15
2	Construction of 220/33 kV GIS Pooling Substation Karian	No.	1	4797.17	4797.17	1	2829.48	2829.48	3656.36	826.88
3	Construction of 220 kV S/C Line on D/C towers from Palchan to Allian Dhungan (Prin, AD Hydro Switchyard)	Km	10.384	203.043	2108.40	-	-	-	-	-
3(a)	Construction of 220 kV S/C Line on D/C towers from Fozal to Allian Dhungan (Prin, AD Hydro Switchyard)	Km	-	-	-	6.0	115.248	691.488	1691.49	990.002
4	Construction of 220 kV D/C Line from Karian to Rajera (PGCIL Switchyard)	Km	3.5	111.88	391.83	3.5	158.59	555.07	876.5	321.435
5	Extra Civil Works in 220/33 kV GIS Karian and 220 kV S/C transmission line from Karian-Rajera	Jobs	-	-	-	-	-	-	703.83	703.83
	G.Total			5112.193	7297.498512		7293.048	8255.763	14600.06	6334.297



H.P. Power Transmission Corporation Ltd.

(A State Govt. Undertaking)

HPPTCL Zone Sarabai, (Bhunter), Distt. Kullu. (H.P). 175125.

Telefax: 01902- 265157, Email: dgm.kullu.hpptcl@gmail.com.

Head Office: Himfed Building Panjari (New ISBT Road) Shimla-171005

www.hpptcl.com, Telefax: 0177-2831227 & 2853271.

No. HPPTCL/DGMS/DB-1/2017-498-99

Dated. 3-11-2017

To

✓ The General Manager (Project)
HPPTCL, Himfed Building, Panjari,
Shimla-5.

Subject: Revised schemes.

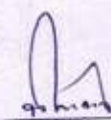
Sir,

Jai Hind.

Following two number revised schemes are sent herewith for further necessary action at your end please.

- a) C/O 220 kV D/C Transmission line from Phozal to Patlikul amounting to Rs. 16.81 crore.
- b) C/O 33/220 kV 80/100 MVA GIS sub-station Phozal Distt Kullu amounting to Rs. 76.82 Crore.

Encls. As Stated in Duplicate.


(Er. K. K. Kapil)
AGM (P)

CC: The Sr. Manager PIU Sarabai Bhunter Distt. Kullu w. r. t. the details as received from his office please.


(Er. K. K. Kapil)
AGM (P)

M.D.	
Dir. (Plg & C)	✓
Dir. (Proj)	✓
G.M. (S&O)	✓
G.M. (Proj)	✓
A.S. (P)	
Sr. Asst. (P)	



DGM (P)
15/11/17
Sr. Manager

HIMACHAL PRADESH POWER TRANSMISSION CORPORATION LIMITED

Name of Scheme: Revised Scheme for the Construction of 220/ 33kV, 80/100 MVA GIS Substation Phoajal.

Report

History: - A&A and ES of the Scheme for the Construction of 33/220 kV Substation at Phoajal, under HPPTCL Division Sarabai, was accorded vide A&A ES No- HPPTCL/ PRJ/ Estimate/ 2010-229-31, dated 10-04-2012 to the tune of Rs. 62.25 Crore.

Date of Energisation of the different Components of the Substation are as under:

S.No	Name of the Component	Date of Energisation	Remarks
1	33kV GIS (Bay No-302,303,304,305,306,307,308,309 and 33 kV Double Bus Bar), 33kV Line bay Terminal equipment and 250 kVA, 33/.433 kV Station Transformer	06-10-2015	
2	33 kV GIS (Bay No-301), 33/220 kV Single Phase Power Transformer Bank and 220 kV GIS (Bay No-202, 203 and 220 kV DoubleBus bar)	21-10-2015	Power Transformers were Energised from LV Side.
3	220 kV GIS (bay No. 201 and bay No-205) and 220 kV Line bay Terminal equipments	23-10-2015	
4	33/220 kV , 26.66/33.33MVA Single Phase Power Transformer ad 220 kV GIS bay No-204	24-10-2015.	
5	220 kV D/C LILO Transmission Line and 220 kV GIS Substation Phoajal	05-06-2016	Power Transformers were Energised from HV Side.

This Revised scheme has been made as per the actual expenditure and also covers Cost of Residential Complex Proposed at Phoajal, 3% office contingency charges and 11% of Departmental Charges, Service tax on the Departmental Charges.

Method: -Departmentally/ through Contractors.

Rates: - As per Award

Cost: Rs. 76.82 Crore (Seventy-Six Crore and Eighty-two lakh only)


(Sr. S. Kaushal)
Sr. Manager (Projects)



HIMACHAL PRADESH POWER TRANSMISSION CORPORATION LTD.

Name of
SchemeRevised Scheme for the Construction of 220/ 33 kV, 80/100 MVA Gas
Insulated Sub Station at Phoajal**MAIN ABSTRACT OF COST of Sub Station**

S. No	Description	Amount As per Sanctioned Scheme (Lakh)	Amount Revised Scheme (Lakh)	Remarks
1	Cost of Pvt. Land acquisition as per the Annexure-A	₹203.76	₹203.69	
2	Cost of tree cutting, Afforestation and forest land Diversion as per the Annexure-B	₹31.86	₹10.14	
3	Preliminary Works as per the Annexure-C	₹192.93	₹379.49	Paid As per actual site Conditions and detailed Engineering.
4.a	Cost of supply as per Annexure : D+D1	₹4,356.42	₹4,553.52	Paid As per quantities finalised in detailed Engineering
4.b	Entry tax Reimbursement: D+D1		₹186.44	Paid As per Award T & C
4.c	PV paid on supply Annexure: D1		₹96.77	Paid As per Award T & C
5-a	Cost of civil works and erection of equipments as per Annexure-E1+Annexure-E2	₹604.51	₹1,157.74	As per actual site Conditions and detailed Engineering
5-b	Price variation paid on the Civil works and Erection of equipments Annexure-E3		₹63.36	As per Award
6	Sub Total	₹5,389.47	₹6,651.15	
7	contingency charges@3%	₹161.68	₹199.53	
8	Sub Total	₹5,551.16	₹6,850.69	
9	Add 11 % Departmental charges	₹610.63	₹753.58	
10	Add 10.30 % service charges on DC	₹62.89	₹77.62	
11	G. Total	₹6,224.68	₹7,681.88	
	Say	₹62.25	₹76.82	Crоре

Excess

Rs. 14.57

23.41%

Er. Sanjay Kumar, J.E. (E)
H.P.P.T.C. Ltd. Sarabai,
Bhuntar, Kullu -H.P

Dy. Manager (Projects)
HPPTCL Division Sarabai
Bhuntar Distt. Kullu (H.P.)-175125

Er. Sanjay Kaushal
Sr. Manager (Project)
HPPTCL Division Sarabai
Bhuntar Distt. Kullu (H.P.)-175125

Er. K.K. Kapil
AGM (Projects)
HPPTCL Sarabai Zone
Distt. Kullu (175125)



HIMACHAL PRADESH POWER TRANSMISSION CORPORATION LTD.

Cost of Pvt. Land acquisition

S.NO	Description	Unit	As per Sanctioned Scheme			Amount As per Revised Scheme
			Rate	Qty	Amount	
1	Cost of the Pvt. land	Hect.	₹1,97,70,464.90	0.9762	₹ 1,92,99,928	₹ 2,03,69,372
2	Stamp Duty @ 5 %				₹ 9,65,100	
3	Registration fee	No	₹25,002.00	3	₹ 75,006	
4	Service charges	LS			₹ 1,050	
5	Counsellor fee i/c document writing , witness and attestation fee etc.	LS			₹ 21,000	
6	Misc. Charges	LS			₹ 13,916	₹ 2,03,69,372
Total					₹ 2,03,76,000	

Sanjay
Er. Sanjay Kumar, J.E. (E)
H.P.P.T.C. Ltd. Sarabai,
Bhuntar, Kullu -H.P

Sanjay
Dy. Manager (Projects)
HPPTCL Division Sarabai
Bhuntar Distt. Kullu (H.P.)-175125

Sanjay
Er. Sanjay Kaushal
Sr. Manager (Project)
HPPTCL Division Sarabai
Bhuntar Distt. Kullu (H.P.)-175125



HIMACHAL PRADESH POWER TRANSMISSION CORPORATION LTD.

Cost of tree cutting ,Afforstation and forest land Diversion

S.No	Description	Unit	As per Senctioned Scheme			As per Revised Scheme
			Qty	rate	Amount	Amount.
1	Cost of tree Cutting	LS	1	₹ 21,00,000	₹ 21,00,000	₹ 10,13,675
2	Cost of of forest land Diversion	Hect.	0.8859	₹ 10,00,000	₹ 8,85,900	
3	Cost of Aforstation	LS	1	₹ 2,00,000	₹ 2,00,000	
Total					₹31,85,900.00	₹10,13,675.00

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Er. Sanjay Kumar, J.E. (E)
 H.P.P.T.C. Ltd. Sarabai,
 Bhunter, Kullu -H.P

Wan
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 HPPTCL Division Sarabai
 Bhunter Distt. Kullu (H.P.)-175125

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 Bhunter Distt. Kullu (H.P.)-175125



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Cost of Preliminary Works

S.No.	Description	As per Sanctioned Scheme				As per Revised Scheme
		Unit	Qty	Rate	Amount	
1	Periphery fencing	Job	1	₹5,00,000.00	₹5,00,000.00	₹ 3,79,49,252
2	Detailed survey/ contouring of the site including X-sections of the sub station site	Hect.	1.85	₹50,000.00	₹92,500.00	
3	Construction of the temporary approach / stairs to the sub station site, cutting of the vegetation at site, demolition of huts etc.	LS	1	₹2,00,000.00	₹2,00,000.00	
4	construction of the site office	LS	1	₹20,00,000.00	₹20,00,000.00	
5	Construction of approach and link roads	LS	1	₹75,00,000.00	₹75,00,000.00	
6	Bench Protection works	LS	1	₹55,00,000.00	₹55,00,000.00	
7	Site Development	LS	1	₹35,00,000.00	₹35,00,000.00	
total					₹1,92,92,500.00	₹ 3,79,49,252

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 H.P.P.T.C. Ltd. Sarabai,
 Bhuntar, Kullu -H.P

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 HPPTCL Division Sarabai
 Bhuntar Distt. Kullu (H.P.)-175125

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Sr. Manager (Project)
 HPPTCL Division Sarabai
 Bhuntar Distt. Kullu (H.P.)-175125



HIMACHAL PRADESH POWER TRANSMISSION CORPORATION LTD.

Name of Scheme:	Construction of 220/ 33 kV, 80/100 MVA Sub Station at Phosal
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Cost of Supply

As per HPPTCL Award No. HPPTCL/DGM/C/L&T Supply/2010-S107-12, dated 23.12.2010

Sr. No.	DESCRIPTION	UNIT	QTY.	UNIT					TOTAL F. O. R. COST
				EX - WORKS PRICE	EXCISE DUTY & CESS	SALES TAX / VAT	FREIGHT	INSURANCE	
1	2	3	4	5	6	7	8	9	10
A	250 kVA, 33 / 0.433 kV Three Phase Transformer including Bushings, Accessories and First Filling of Oil	No.	1	₹3,85,790.00	Included		₹5,114.00	₹6,480.00	₹3,97,384.00
B	245 kV GIS EQUIPMENT 245 kV, 1,600 A, 50 kA SF6 Gas Insulated Transformer Bay Module comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two Bus Bar Disconnectors with Grounding Switch, Surge Arrestors, SF6 Gas Monitoring System for complete Bay, LCC, Three 1 - Phase SF6 Ducts and SF6 / Oil Bushing to connect to 220 / 33 kV, 25 / 31.5 MVA Transformer and Accessories with GIS etc to complete Transformer Bay Module	No.	1	₹4,07,37,899.00	Included		₹28,40,909.00	₹6,84,263.00	₹4,42,63,071.00
2	245 kV, 2000 A, 50 kA SF6 Gas Insulated Feeder Bay Module comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two Bus Bar Disconnectors with	No.	2	₹3,88,08,181.00	Included		₹28,40,909.00	₹6,51,850.00	₹4,23,00,940.00
									₹8,46,01,880.00

Day

Dr. Sanjay Kumar, J.E. (E)
HPPTCL Division Sarabai
Bhunter Distt. Kullu (H.P.)-175125

Dy. Manager (Projects)
HPPTCL Division Sarabai
Bhunter Distt. Kullu (H.P.)-175125

Er. Sanjay Kaushal
Sr. Manager (Project)
HPPTCL Division Sarabai
Bhunter Distt. Kullu (H.P.)-175125

Sr. No.	DESCRIPTION	UNIT	QTY.	UNIT					TOTAL F. O. R. COST
				EX - WORKS PRICE	EXCISE DUTY & CESS	SALES TAX / VAT	FREIGHT	INSURANCE	
3	Grounding Switch, Line Disconnector with Safety Grounding Switch, High Speed Fault Making Grounding Switch SF6 Gas Monitoring System for complete Bay, LCC, GIS Duct and Air / SF6 Bushing Termination Enclosure and Accessories with GIS etc to complete Feeder Bay Module.	No.	2		Included in Items B -1, 2 & 4		₹28,40,909.00		₹56,81,818.00
4	245 kV, 4000 A, 50 kA, 3 Single Phase (Isolated) Units SF6 Gas Insulated, Metal Enclosed BUSBAR, each Unit enclosed in Bus Enclosure running along the length of the Switchgear to interconnect each of Circuit Breaker Bay Module. Each Busbar Set shall be complete with Voltage Transformer complete with Safety Grounding Switch.	No.	1	₹22,27,95,514.00	Included		₹28,40,909.00	₹3,72,814.00	₹2,54,01,337.00
5	245 kV, 4000 A, 50 kA SF6 Gas Insulated Bus Coupler Bay Module comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two Disconnectors with Safety Grounding Switches, SF6 Gas Monitoring System for complete Bay LCC etc.	No.	6	₹4,05,079.00	Included		₹14,205.00	₹6,804.00	₹25,56,528.00
6	245 kV CVT with Junction Box	No.	6	₹81,016.00	Included		₹710.00	₹1,361.00	₹4,98,522.00
C	36 kV, 2000 A, 40 kA for 3 sec SF6 Gas Insulated, Metal Enclosed BUSBARs each Unit Enclosed in Bus Enclosures running along the Length of the Switchgear to interconnect each of Circuit Breaker Bay Module. Each Busbar Set shall be complete with Voltage Transformers complete with	No.							

Er. Sanjay Kumar, J.E. (E)
H.P.P.T.C. Ltd. Sarabai
Bhantar, Kullu - H.P.

Dy. Manager (Projects)
HPPTCL Division Sarabai
Bhantar Distt. Kullu (H.P.)-175125

Er. Sanjay Kaulthai
Sr. Manager (Project)
HPPTCL Division Sarabai
Bhantar Distt. Kullu (H.P.)-175125

Sr. No.	DESCRIPTION	UNIT	QTY.	UNIT					TOTAL F. O. R. COST
				EX - WORKS PRICE	EXCISE DUTY & CESS	SALES TAX / VAT	FREIGHT	INSURANCE	
1	Safety Grounding Switch 36 kV, 1600 A SF6 Gas Insulated Feeder Bay Module each comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two Busbar Disconnectors with Grounding Switch Line Disconnector with Safety Grounding Switch, High Speed Fault Making Grounding Switch, SF6 Gas Monitoring System for complete Bay LCC Enclosure and Accessories with with GIS etc to complete Feeder Bay Module.	No.	6	₹37,58,824.00	Included		₹14,205.00	₹63,136.00	₹38,36,165.00
2	36 kV, 2000 A SF6 Gas Insulated Bus Coupler Bay comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two numbers of Busbar Disconnectors with Earthing Switch, SF6 Gas Monitoring System for complete Bus Coupler Panel	No.	1	₹32,09,563.00	Included		₹14,205.00	₹53,910.00	₹32,77,678.00
3	36 kV, 1600 A SF6 Gas Insulated Power Transformer Panel comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two numbers of Busbar Disconnectors with Earthing Switch, Surge Arrestor (30 kV), SF6 Gas Monitoring System for complete Power Transformer Panel	No.	2	₹32,43,776.00	Included		₹14,205.00	₹54,485.00	₹33,12,466.00
4	36 kV, 630 A SF6 Gas Insulated 250 KVA L. T. Transformer Panel comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two numbers of Busbar Disconnectors with Earthing Switch, Surge Arrestor (30 kV), 5r's Gas Monitoring System for complete L. T. Transformer Panel	No.	1	₹27,88,332.00	Included		₹14,205.00	₹46,835.00	₹28,49,372.00

Sanjay
Er. Sanjay Kumar, J.E. (E)
 H.P.P.T.C. Ltd. Sarabai,
 Bhunter Distt. Kullu -H.P.

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Dy. Manager (Projects)
 HPPTCL Division Sarabai
 Bhunter Distt. Kullu (H.P.)-175125

Sanjay
Er. Sanjay Koushal
Sr. Manager (Project)
 HPPTCL Division Sarabai
 Bhunter Distt. Kullu (H.P.)-175125

Sr. No.	DESCRIPTION	UNIT	QTY.	UNIT					TOTAL F. O. R. COST
				EX - WORKS PRICE	EXCISE DUTY & CESS	SALES TAX / VAT	FREIGHT	INSURANCE	
D	SUBSTATION AUTOMATION SYSTEM	LOT	1	₹93,61,825.00	Included		₹82,727.00	₹1,57,248.00	₹96,01,800.00
	Complete Sub Station Automation System including Hardware & Software for the Sub Station and Remote Control Station alongwith Associated Equipment as per Technical Specification								
1	BAY CONTROL UNITS	Nos.	5				Included above in D		
2	220 kV Bays	Nos.	9				Included above in D		
E1	220 kV CONTROL AND RELAY PANEL								
1	Circuit Breaker Control Panel								
a)	With Auto Reclose	Nos.	2	₹5,40,105.00	Included		₹4,77.00	₹9,072.00	₹5,53,950.00
b)	With out Auto Reclose	Nos.	3	₹5,14,386.00	Included		₹4,545.00	₹8,840.00	₹5,27,571.00
2	Line Protection Panel (Main - I + Main - II)	Nos.	2	₹12,85,965.00	Included		₹11,364.00	₹21,600.00	₹13,18,929.00
3	Bus Bar Protection Panel 220 kV (Double Bus Bar Protection)	Set	1	₹24,94,772.00	Included		₹22,045.00	₹41,904.00	₹25,58,721.00
4	Transformer Protection Panel H. V. Side	Nos.	2	₹8,07,586.00	Included		₹7,136.00	₹13,565.00	₹8,28,287.00
E2	33 kV CONTROL AND RELAY PANEL								
1	Circuit Breaker Control Panel								
a)	With Auto Reclose	Nos.	6	₹4,88,667.00	Included		₹4,318.00	₹8,208.00	₹5,01,193.00
b)	With out Auto Reclose	Nos.	4	₹4,88,667.00	Included		₹4,318.00	₹8,208.00	₹5,01,193.00
2	Line Protection Panel	Nos.	6				Included above in Item E2 - 1		
3	Transformer Protection Panel - L. V. Side	Nos.	2				Included above in Item E2 - 1		
4	Transformer Protection Panel - Station Transformer	Nos.	2				Included above in Item E2 - 1		

Er. Sanjay Kumar, J.E. (E)
H.P.P.T.C. Ltd. Sarabai,
Bhunter, Kullu - H.P.

Dy. Manager (Projects)
HPPTCL Division Sarabai
Bhunter Distt. Kullu (H.P.)-175125

Er. Sanjay Kaushal
Sr. Manager (Project)
HPPTCL Division Sarabai
Bhunter Distt. Kullu (H.P.)-175125

Sr. No.	DESCRIPTION	UNIT	QTY.	UNIT					TOTAL F. O. R. COST
				EX - WORKS PRICE	EXCISE DUTY & CESS	SALES TAX / VAT	FREIGHT	INSURANCE	
5	Bus Coupler Protection Panel	Nos.	1						
6	DR Evaluation Unit	Nos.	1						
F	PLCC for 220 kV LINE FEEDER								
1	2000 A, 0.5 mH / 1.0 mH, 50 kA Line Traps	Nos.	4	₹4,52,660.00	Included		₹6,000.00	₹7,603.00	₹18,65,052.00
2	Coupling Device (Phase to Phase)	Nos.	4	₹75,615.00	Included		₹1,002.00	₹1,370.00	₹3,11,548.00
3	HF Cable	LS	2	₹12,602.00	Included		₹167.00	₹212.00	₹25,962.00
4	Carrier Equipment (for Speech + Protection and for Speech + Data)	Nos.	6	₹3,21,491.00	Included		₹4,261.00	₹5,400.00	₹19,86,912.00
5	Protection Coupler	Nos.	4	₹1,37,367.00	Included		₹1,821.00	₹2,307.00	₹5,65,980.00
6	Print Testing Kit	Set	1	₹1,09,307.00	Included		₹1,449.00	₹1,836.00	₹1,12,592.00
7	EPbAX (24 / 8) with Telephone Set	Set	1	₹2,82,295.00	Included		₹3,742.00	₹4,742.00	₹2,90,779.00
F.1	FOTE Equipment	Set	1	₹98,37,632.00	Included		₹1,30,398.00	₹1,65,240.00	₹1,01,33,270.00
G	AIR CONDITIONER AND VENTILATION								
1	Split AC (Capacity - 2T)	Nos.	10	₹30,863.00	Included		₹409.00	₹518.00	₹3,17,900.00
2	Ventilation System for 220 kV & 33 kV GIS Hall	LS	1	₹20,95,752.00	Included		₹30,068.00	₹38,102.00	₹21,63,922.00
H	LT SWITCHBOARD								
1	415 V Main Switchboard	Nos.	1	₹32,14,913.00	Included		₹42,614.00	₹54,000.00	₹33,11,527.00
2	415 V A. C. Distribution Board	Nos.	1	₹14,80,345.00	Included		₹19,622.00	₹24,845.00	₹15,24,832.00
3	220 V, DCDB	Nos.	2	₹5,76,485.00	Included		₹7,641.00	₹9,683.00	₹11,87,618.00
4	48 V, DCDB	Nos.	2	₹3,67,709.00	Included		₹4,874.00	₹6,176.00	₹7,57,518.00
I	BATTERIES								

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Sr. No.	DESCRIPTION	UNIT	QTY.	UNIT					TOTAL F. O. R. COST
				EX - WORKS PRICE	EXCISE DUTY & CESS	SALES TAX / VAT	FREIGHT	INSURANCE	
1	220 V, 400 AH	Set	2	₹6,62,015.00	Included		₹8,775.00	₹11,120.00	₹6,81,910.00
2	48 V, 400 AH	Set	2	₹1,44,440.00	Included		₹1,915.00	₹2,426.00	₹1,48,781.00
J BATTERY CHARGER SYSTEM									
1	220 V	Set	2	₹4,97,668.00	Included		₹6,597.00	₹8,359.00	₹5,12,624.00
2	48 V	Set	2	₹3,70,358.00	Included		₹4,909.00	₹6,221.00	₹3,81,488.00
K DG SET ALONGWITH CONTROL PANEL (100 KVA, 440 V for 220 kV Sub Station)									
		Set	1	₹19,28,948.00	Included		₹25,568.00	₹32,400.00	₹19,86,916.00
L FIRE PREVENTION AND EXTINGUISHING									
1	Nitrogen Injection Fire Prevention & Extinguishing System for Transformer	Set	1	₹6,36,553.00	Included		₹8,438.00	₹10,692.00	₹6,55,683.00
2	Fire Protection for GIS cum Control Room Building etc (Portable type the Extinguishers System)	Lot	1	₹7,02,704.00	Included		₹10,082.00	₹12,776.00	₹7,25,562.00
M ILLUMINATION SYSTEM									
1	Control Room / GIS Building	Lot	1	₹38,97,186.00	Included		₹51,657.00	₹65,460.00	₹40,14,303.00
2	Switchyard Lighting	LS	1				Included in Item - M		
3	Solar Light System for Street Light	LS	1				Included in Item - M		
N Power Cables and Copper Conductor Armoured Control Cables alongwith Lugs, Glands and straight Joints.									
		LS	1	₹27,70,729.00	Included		₹36,726.00	₹46,539.00	₹28,53,994.00
O	33 kV XLPE POWER CABLE AND ACCESSORIES								

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Sr. No.	DESCRIPTION	UNIT	QTY.	UNIT					TOTAL F. O. R. COST
				EX - WORKS PRICE	EXCISE DUTY & CESS	SALES TAX / VAT	FREIGHT	INSURANCE	
1	XLPE POWER CABLE 3.5 c X 300 sq. mm	km	1.00	₹6,33,981.00	Included		₹8,403.00	₹10,649.00	₹6,53,033.00
2	PVC POWER CABLE 3.5 c X 90 sq. mm	km	0.40	₹3,13,081.00	Included		₹4,150.00	₹5,259.00	₹1,28,996.00
	3.5 c X 70 sq. mm	km	1.00	₹2,53,978.00	Included		₹3,366.00	₹4,266.00	₹2,61,610.00
	3.5 c X 35 sq. mm	km	0.40	₹1,46,729.00	Included		₹1,945.00	₹2,465.00	₹1,51,139.00
	4 c X 16 sq. mm	km	0.50	₹1,01,334.00	Included		₹1,343.00	₹1,702.00	₹1,04,379.00
	4 c X 4 sq. mm	km	2.00	₹50,153.00	Included		₹665.00	₹842.00	₹51,660.00
3	HR - FRLS CONTROL CABLE 2 c X 2.5 sq. mm	km	2.50	₹46,899.00	Included		₹622.00	₹788.00	₹1,20,772.50
	4 c X 2.5 sq. mm	km	3.00	₹80,000.00	Included		₹1,060.00	₹1,344.00	₹2,47,212.00
	7 c X 2.5 sq. mm	km	2.00	₹1,33,059.00	Included		₹1,764.00	₹2,235.00	₹2,74,116.00
	10 c X 2.5 sq. mm	km	1.50	₹1,86,401.00	Included		₹2,471.00	₹3,131.00	₹2,88,004.50
	12 c X 2.5 sq. mm	km	1.00	₹2,21,507.00	Included		₹2,936.00	₹3,721.00	₹2,28,164.00
	16 c X 2.5 sq. mm	km	1.00	₹2,92,338.00	Included		₹3,875.00	₹4,910.00	₹3,01,123.00
	19 c X 2.5 sq. mm	km	0.40	₹3,43,738.00	Included		₹4,556.00	₹5,774.00	₹3,54,068.00
	2 c X 4 sq. mm	km	1.60	₹63,192.00	Included		₹838.00	₹1,061.00	₹1,41,627.20
	4 c X 4 sq. mm	km	1.60	₹1,15,647.00	Included		₹1,533.00	₹1,942.00	₹1,04,145.60
	7 c X 4 sq. mm	km	1.60	₹2,06,179.00	Included		₹2,733.00	₹3,463.00	₹1,90,595.20
4	36 kV XLPE CABLE								₹3,39,800.00
a)	33 kV XLPE Cable for connecting Transformer to 33 kV GIS of size 1 x 630 sq. mm. (Three Cables with one Spare Cable in each Circuit)	km	2.00	₹9,32,917.00	Included		₹12,613.00	₹15,983.00	₹9,61,513.00
b)	33 kV Indoor Termination suitable for above Cable	Nos.	6.00	₹5,015.00	Included		₹66.00	₹84.00	₹5,165.00
c)	33 kV Outdoor Termination suitable for above Cable	Nos.	6.00	₹3,163.00	Included		₹42.00	₹53.00	₹3,258.00

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Sr. No.	DESCRIPTION	UNIT	QTY.	UNIT					TOTAL F. O. R. COST
				EX - WORKS PRICE	EXCISE DUTY & CESS	SALES TAX / VAT	FREIGHT	INSURANCE F. O. R. COST	
P	GROUNDING / EARTHING SYSTEM								
	a) 40 mm MS Rod for Earthing	LS	1	₹32,24,233.50	Included		₹75,977.00	₹36,104.00	₹33,36,314.50
	b) GS / MS Flats	LS	1				Included in Item P - a)		
	c) Electrodes	LS	1				Included in Item P - a)		
Q	Lightning Mast / GS Shield Wire	LS	1				Included in Item P - a)		
	STEEL STRUCTURES FOR TOWERS, BEAMS AND EQUIPMENT	LS	1	₹15,45,592.00	Included		₹68,289.00	₹25,961.00	₹16,39,842.00
R	EOT CRANE								
	a) 3.5 T for 220 LV GIS ROOM	Set	1	₹6,90,553.00	Included		₹9,153.00	₹11,599.00	₹7,11,305.00
	b) 2.5 T for 33 KV GIS ROOM	Set	1	₹4,63,529.00	Included		₹6,144.00	₹7,786.00	₹4,77,459.00
S	Moveable Ladder of suitable Capacity for 220 KV & 33 KV GIS Room	Nos.	2	₹1,28,597.00	Included		₹1,705.00	₹2,160.00	₹2,64,924.00
	Insulator Strings / D'sc Insulators,	LS	1	₹12,96,736.00	Included		₹17,188.00	₹21,781.00	₹13,35,705.00
T	Hardware, Conductor, Bus Bar								
	Material, Cable Trays, Clamps, Connectors, including Equipment								
	Connectors, Pipes for Equipment & Lighting, all Accessories etc								
T	TESTING AND MAINTENANCE								
	1 Meggar 5 kV (Motorized)	No	1	₹70,096.00	Included		₹1,006.00	₹1,274.00	₹72,376.00
	2 Meggar 1 kV (Motorized)	No	1	₹7,138.00	Included		₹102.00	₹130.00	₹7,360.00

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Sr. No.	DESCRIPTION	UNIT	QTY.	UNIT					TOTAL F. O. R. COST
				EX - WORKS PRICE	EXCISE DUTY & CESS	SALES TAX / VAT	FREIGHT	INSURANCE F. O. R. COST	
3	Digital Multimeter	Nos.	2	₹10,099.00	Included		₹145.00	₹1184.00	₹20,854.00
4	D - Spanner Set (Insulated)	Nos.	2	₹683.00	Included		₹10.00	₹12.00	₹1,410.00
5	Ring - Spanner Set (Insulated)	Nos.	2	₹713.00	Included		₹10.00	₹13.00	₹1,472.00
6	Torque Wrench Set	Nos.	2	₹11,881.00	Included		₹170.00	₹216.00	₹24,534.00
7	Insulating Gloves	Set	5	₹1,485.00	Included		₹21.00	₹27.00	₹7,665.00
8	Helmets	Set	5	₹535.00	Included		₹8.00	₹10.00	₹2,765.00
9	Gas Evacuating and Refilling Device	Set	1	₹33,97,875.00	Included		₹48,750.00	₹61,776.00	₹35,08,401.00
10	Gas Leakage Monitor	Nos.	2	₹71,384.00	Included		₹1,023.00	₹1,296.00	₹1,47,206.00
11	Relay Test Kit	Nos.	1	₹26,13,750.00	Included		₹37,500.00	₹47,520.00	₹26,98,770.00
12	Synchronizing Trolley	Set	1	₹1,47,886.00	Included		₹1,960.00	₹2,484.00	₹1,52,330.00
13	Time Synchronisation Equipment	Lot	1						
U	POWER Transformer 26,671/33.33 MVA, 220/ 33 kV , Single phase, outdoor type, oil immersed , copper wound Power Transformer with 220 kV oil to Air Bushing and 33 kV Cable box for XLPE cable.	Nos.	4	₹2,95,00,000.00	₹30,38,500.00	₹6,50,770.00	₹16,00,000.00	₹3,47,89,270.00	₹13,91,57,080.00
0.2	Unloading Charges at the destination	Job	4						₹2,00,000.00
V	MANDATORY SPARES								
a)	220 KV GIS Circuit Breaker								
(i)	245 KV, 3 Phase Circuit Breaker with Interrupting Chamber complete with all necessary Apparatus (1 no. of each Rating)	No.	1					₹45,92,127.13	₹45,92,127.13
(ii)	Rubber Gasket, 'O' Rings and Seal	Set	1					₹28,916.00	₹28,916.00
(iii)	Trip Coil with Resistor	No.	3					₹9,638.03	₹28,914.09
(iv)	Closing Coil with Resistor	No.	3					₹9,638.03	₹28,914.09
(v)	Molecular Filter	Set	3					₹28,916.00	₹86,748.01
(vi)	Density / Pressure Monitoring System	No.	1					₹48,193.02	₹48,193.02
(vii)	Relays, Power Contactors, Push Buttons-Timers & MCB etc	Set	1					₹1,15,664.02	₹1,15,664.02

Included in Sub Station Automation System

Jay

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Sr. No.	DESCRIPTION	UNIT	QTY.	UNIT					TOTAL F. O. R. COST
				EX - WORKS PRICE	EXCISE DUTY & CESS	SALES TAX / VAT	FREIGHT	INSURANCE	
(viii)	Pressure Switches	Set	1						₹48,193.02
(ix)	Auxiliary Switch Assembly	No.	1						₹47,228.55
(x)	Operation Counter	No.	1						₹38,554.99
(xi)	Rupture Disc / Diaphragm	No.	1						₹1,15,664.02
(xii)	245 kV, 3 Phase Circuit Breaker	No.	1						Included in A(ii)
	Operating Mechanism complete with all necessary connecting Apparatus								
(xiii)	All type of Coupling for SF6) Each Rating	Set	1						₹57,832.01
b)	220 kV Current Transformer	Set	1						₹21,29,834.02
(i)	Multi Ratio Single Phase Current Transformers of each Rating (3 Nos. of each Rating)								
c)	220 kV Potential Transformer	Set	1						₹10,70,578.75
(i)	Single Phase Potential Transformer complete with all Gaskets and Mounting Hardware								
d)	198 kV Surge Arrestor	No.	1						₹85,101.73
(i)	Complete Surge Arrestor (for 1 Phase)								
(ii)	GIS Type Surge Counter / Monitor	No.	1						₹570.09
e)	245 kV Isolators & Earth Switch	Set	1						₹10,75,742.01
(i)	245 kV, Single Phase Disconnecting Switch Internal Parts complete with all necessary Gaskets, Mounting								

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Sr. No.	DESCRIPTION	UNIT	QTY.	UNIT					TOTAL F. O. R. COST
				EX - WORKS PRICE	EXCISE DUTY & CESS	SALES TAX / VAT	FREIGHT	INSURANCE F. O. R. COST	
	Hardware etc.								
(ii)	245 kV, Single Phase Grounding Switch Internal Parts complete with all necessary Gaskets, Mounting Hardware etc.	Set	1					₹8,91,575.68	₹8,91,575.68
(iii)	245 kV, Single Phase High Speed Fault Making Grounding Switch Internal Parts complete with all necessary Gaskets, Mounting Hardware etc.	Set	1					₹10,75,742.01	₹10,75,742.01
f) 33 kV GIS Circuit Breaker									
(i)	Rubber Gasket 'O' Rings and Seal	Set	1					₹1,330.10	₹21,330.10
(ii)	Trip Coils	No.	3					₹8,379.44	₹25,136.33
(iii)	Closing Coils	No.	3					₹8,379.44	₹25,136.33
(iv)	Molecular Filter	Set	3					₹3,047.16	₹9,141.47
(v)	Density / Pressure Monitoring System	No.	1					₹22,853.20	₹22,853.20
(vi)	Relays, Power Contactors, Push Buttons, Timers & MCB etc.	Set	1					₹4,57,065.00	₹4,57,065.00
(vii)	Closing Assembly / Valve	No.	1					₹2,285.13	₹2,285.13
(viii)	Pressure Switches	Set	1					₹2,285.13	₹2,285.13
(ix)	Auxiliary Switch Assembly (for CB)	No.	1					₹29,709.54	₹29,709.54
(x)	Rupture Disc / Diaphragm	No.	1					₹15,996.86	₹15,996.86
(xi)	36 kV, 3 Phase Circuit Breaker Operating Mechanism complete with all necessary connecting Apparatus (each Rating)	No.	1					₹7,45,015.15	₹7,45,015.15
g) 33 kV Current Transformer									
(i)	Multi Ratio Single Phase Current	Set	1					₹2,52,528.27	₹2,52,528.27

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Sr. No.	DESCRIPTION	UNIT	QTY.	UNIT					TOTAL F. O. R. COST
				EX - WORKS PRICE	EXCISE DUTY & CESS	SALES TAX / VAT	FREIGHT	INSURANCE F. O. R. COST	
	Transformers of each rating (3 nos. of each rating)								
h)	33 kV Potential Transformer	Set	1					₹1,89,681.96	₹1,89,681.96
	(i) Single Phase Potential Transformer complete with all Gaskets and Mounting Hardware								
i)	30 kV Surge Arrestor	No.	1					₹15,699.88	₹15,699.88
	(i) Complete Surge Arrestor including Base with Surge Counter & Accessories: AIS Type								
	(ii) Surge Counter / Monitor	No.	1					₹8,722.26	₹8,722.26
j)	33 kV Isolators & Earth Switch	Set	1					₹92,174.84	₹92,174.84
	(i) 36 kV, 3 Phase, 1250 Amperes Disconnecting Switch Operating Mechanism complete with all necessary Connecting Apparatus							Part of Three Position Switch	
	(ii) 36 kV, 3 Phase, 1250 Amperes Grounding Switch Operating Mechanism complete with all necessary Connecting Apparatus	Set	1						
k)	Battery	No.	10					₹2,83,678.79	₹2,83,678.79
	220 Volt / 48 Volt Batteries								
	(i) Spare Battery Cell without Electrolyte	No.	10					₹4,364.00	₹43,639.95
	(ii) Terminal Connectors with Bolts & Nuts (each type)	No.	10					₹1,362.67	₹13,626.74
	(iii) Float Level Indicators (each type)	No.	10					₹1,635.78	₹16,357.82
	(iv) Vent Plugs (each type)	No.	10						
l)	Battery Charger								


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Sr. No.	DESCRIPTION	UNIT	QTY.	UNIT					TOTAL F. O. R. COST
				EX - WORKS PRICE	EXCISE DUTY & CESS	SALES TAX / VAT	FREIGHT	INSURANCE	
	220 Volt / 48 Volt Batteries								
(i)	Set of Control Cards (of each type)	Set	1						₹69,904.14
(ii)	Set of Relays	Set	1						₹6,388.99
(iii)	Set of Contactor	Set	1						₹35,166.02
(iv)	Filter Capacitors	Set	1						₹8,388.99
(v)	Thyristor / Diode	Set	1						₹11,185.01
(vi)	Set of Switches	Set	1						₹22,929.60
(vii)	Set of Wound Resistors	Set	1						₹4,193.06
(viii)	Potentiometers	Set	1						₹4,193.06
(ix)	Fuses of Thyristor with Indicators	Set	6						₹3,634.43
m)	LT Switchgear								
(i)	Relays (Auxiliary)	Set	1						₹95,374.78
(ii)	CTs and PTs	Set	1						₹8,226.66
(iii)	Switches / P.u.s, Buttons and Meters	Set	1						₹27,500.81
(iv)	TPN Switches / MCB	Set	1						₹93,996.83
(v)	LT Breaker Spares								
	Spring Charging Motor	No.	1						₹27,503.67
	Auxiliary Contacts Sets	Set	2						₹1,260.50
	Busbar Seal off Insulators	No.	5						₹458.36
	Arc Chutes	Set	2						₹3,781.49
	Moving Contacts	Set	1						₹3,208.54
	Arcing Contacts (Fixed / Moving)	Set	1						₹3,208.54
	Springs (Closing / Opening)	No.	1						₹572.95
	Closing Coil	No.	1						₹1,717.91
	Tripping Coil	No.	1						₹1,260.50
	Auxiliary Finger Contact	Set	1						₹1,203.20
	Limit Switches	Set	1						₹5,155.63
	Jaw Contacts	Set	1						₹372.42
(vi)	BUSBAR								
	Busbar Insulators	No.	5						₹143.24
	Interphase Barrier	No.	2						₹716.19
	Busbar Strip 1 mm (Aluminium)	metres	5						₹1,074.29

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				EX - WORKS PRICE	EXCISE DUTY & CESS	SALES TAX / VAT	FREIGHT	INSURANCE	
n)	DG Set								
(i)	Set of Filters 1 set (Lubeoil / Fuel / Air Circuit)	Set	1						₹6,603.29
(ii)	Solenoid Coil Assembly	No.	1						₹2,934.48
(iii)	Self Starter Assembly	No.	1						₹54,930.00
(iv)	Lub - Oil Pressure Safety Control	No.	1						₹13,881.71
(v)	High Water Temperature Safety Control	No.	1						₹2,197.28
(vi)	Diode	No.	2						₹1,504.96
-i)	Optic Fibre Cable	metres	500						₹47.76.12
-p)	220 KV CVT	No.	1						₹3,95,452.45

Grand Total

₹43,56,41,740.60

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Sanjay
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HIMACHAL PRADESH POWER TRANSMISSION CORPORATION LTD.

Total Revised supply cost of the Material excluding the Power Transformer and accessories

Sr. No.	Description of Material	Unit	Unit Price	TOTAL COST OF Material	
				Total Quantity	Total Amount
A	POWER TRANSFORMER				
1	26 / 33.33 MVA, 33/220 kV Single Phase Transformer including Bushing, Accessories and First Filling of Oil	Annexure-D1		-	-
2	Oil Storage Tank			-	-
3	Oil Sampling Bottle			-	-
4	Micro Gas Analyzer / On-line DGA / PPM Meter			-	-
5	250 kVA; 33 / 0.433 kV Three Phase Transformer including Bushing, Accessories and First Filling of Oil	Nos.	3,77,674	1	3,77,674
	Subtotal A				3,77,674
B	245 KV GIS EQUIPMENT				
1	245 kV, 1600 A, 50 kA SF6 Gas Insulated TRANSFORMER BAY MODULE each comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two Bus Bar Disconnectors with Grounding Switch, Surge Arresters (198 kV), SF6 Gas Monitoring System for complete Bay, LCC, Three 1 - Phase SF6 Ducts and SF6 Bushing to connect to 33/220 kV, 26.66 / 33.33 MVA Transformer and Accessories with GIS etc to complete Transformer Bay Module	Nos.	4,20,67,623	1	4,20,67,623
2	245 kV, 2000 A, 50 kA SF6 Gas Insulated FEEDER BAY MODULE each comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two Bus Bar Disconnectors with Grounding Switch, Line Disconnector with Safety Grounding Switch, High Speed Fault Making Grounding Switch, SF6 Gas Monitoring System for complete Bay, LCC, GIS Duct and Air / SF6 Bushing Termination Enclosure and Accessories with GIS etc to complete Feeder Bay Module	Nos.	4,02,02,813	2	8,04,05,626
3	245kV, 4000 A, 50 kA, 3 Single Phase (isolated) Units SF6 Gas Insulated, Metal Enclosed BUS BARS each Unit, enclosed in Bus Enclosures running along the Length of the Switchgear to interconnect each the Circuit Breaker Bay Module Each Bus Bar Set shall be complete with Voltage Transformer complete with Safety Grounding Switch	Nos.	27,00,000	2	54,00,000
4	245 kV, 4000 A, 50 kA SF6 Gas Insulated BUS COUPLER BAY MODULE comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two Disconnectors with Safety Grounding Switches SF6 Gas Monitoring System for complete Bay, LCC etc	Nos.	2,41,49,034	1	2,41,49,034
5	245 kV-CVT with Junction Box	Nos.	4,04,954	6	24,29,724
6	198 kV Lightning Arrester with Counter and Leakage Meter	Nos.	78,966	7	5,52,762
	Subtotal B				15,30,04,769
C	36 kV, 2000 A, 40 kA for 3 sec., SF6 Gas Insulated, Metal Enclosed BUS BARS each Unit, enclosed in Bus Enclosures running along the Length of the Switchgear to interconnect each of Circuit Breaker Bay Module. Each Bus Bar Set shall be complete with Voltage Transformer complete with Safety Grounding Switch				
1	36 kV 1600A SF6 Gas Insulated FEEDER BAY MODULE each comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two Bus Bar Disconnectors with Grounding Switch, Line Disconnector with Safety Grounding Switch, High Speed Fault Making Grounding Switch, SF6 Gas Monitoring System for complete Bay, LCC, Enclosure and Accessories with GIS etc to complete Feeder Bay Module	Nos.	36,45,891	6	2,18,75,346
2	36kV 2000 A SF6 Gas Insulated BUS COUPLER BAY comprising of SF6 Gas Insulated Circuit Breaker Current Transformers, Two numbers of Bus Bar Disconnectors with Earthing Switch, SF6 Gas Monitoring System for complete Bus Coupler Panel	Nos.	31,15,105	1	31,15,105
3	36 kV, 1600 A SF6 Gas Insulated POWER TRANSFORMER PANEL each comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two numbers of Bus Bar Disconnectors with Earthing Switch, Surge Arrester (30 kV), SF6 Gas Monitoring System for complete Power Transformer Panel	Nos.	31,48,162	1	31,48,162

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Sr. No.	Description of Material	Unit	Unit Price	TOTAL COST OF Material	
				Total Quantity	Total Amount
4	36 kV, 630 A SF6 Gas Insulated 250 kVA, LT TRANSFORMER PANEL each comprising of SF6 Gas insulated Circuit Breaker, Current Transformers, Two numbers of Bus Bar Disconnectors with Earthing Switch, SF6 Gas Monitoring System for complete Power Transformer Panel	Nos.	27,08,043	1	27,08,043
	Subtotal C				3,08,46,656
D	SUBSTATION AUTOMATION SYSTEM Complete including Hardware and Software for the 9 Bays and Remote Control Station alongwith Associated Equipments	Lot(9 Bays)	91,25,551	1	91,25,551
	BAY CONTROL UNITS				
1	220kV Bays	Nos			
2	33kV Bays	Nos	Include above		
	Subtotal D				91,25,551
E1	220 kV CONTROL AND RELAY PANEL				
1	Circuit Breaker Control Panel				
a)	With Auto Reclose	Nos.	5,26,474	2	10,52,948
b)	With out Auto Reclose	Nos.	5,01,403	3	15,04,209
2	Line Protection Panel (Main I + Main II)	Nos.	12,53,510	2	25,07,020
3	220 kV(Double Bus Bar Protection)	Set	24,31,808	1	24,31,808
4	Transformer Protection Panel - H. V. Side including one number for Spare Single Phase Transformer	Nos	7,87,204	2	15,74,408
	Subtotal E 1				90,70,393
E2	33 kV CONTROL AND RELAY PANEL				
1	Circuit Breaker Control Panel				
a)	With Auto Reclose	Nos.	4,76,334	6	28,58,004
b)	With out Auto Reclose	Nos.	4,76,334	3	14,29,002
2	Line Protection Panel	Nos.		6	
3	Transformer Protection Panel - L. V. Side Including one number for spare Single phase Transformer	Nos.	Include above	2	
	Subtotal E 2				42,87,006
F	PLCC for 220 kV LINE FEEDER				
1	2000 A, 0.5 mH /1.0 mH, 50 kA Line Traps	Nos.	4,43,136	4	17,72,544
2	Coupling Device (Phase to Phase)	Nos	74,024	4	2,96,096
3	HF Cable	Ls	12,337	2	24,674
4	Carrier Equipment (for Speech + Protection and for Speech + Data)	Nos	3,14,727	6	18,88,362
5	Protection Coupler	Nos	1,34,477	4	5,37,908
6	Print Testing Kit	Set	1,07,007	1	1,07,007
7	EPBAX (24 / 8) with Telephone Sets	Set	2,76,356	1	2,76,356
	Subtotal F				49,02,947
F.1	FOTE Equipment	Set	96,30,660	1	96,30,660
	Subtotal F 1				96,30,660
G	AIR CONDITIONER AND VENTILATION SYSTEM				
1	Split AC (Capacity - 2T)	Nos	30,213	10	3,02,130
2	Ventilation System for 220kV & 33kV GIS Hall	LS	20,56,591	1	20,56,591
	Subtotal G				23,58,721
H	LT SWITCHBOARD				
1	415V Main Switchboard	Nos	31,47,275	1	31,47,275
2	415V A C Distribution Board	Nos	14,49,200	1	14,49,200
3	220V DCDB	Nos	5,64,356	2	11,28,712
4	48V, DC DB	Nos	3,59,973	2	7,19,946
	Subtotal H				64,45,133
I	BATTERIES				
1	220V, 400 AH	Set	6,48,087	2	12,96,174
2	48V, 400 AH	Set	1,41,401	2	2,82,802
	Subtotal I				15,78,976
J	BATTERY CHARGER SYSTEM				
1	220V	Set	4,87,198	2	9,74,396
2	48V	Set	3,62,566	2	7,25,132
	Subtotal J				16,99,528
K	DG SET ALONGWITH CONTROL PANEL (100 kVA, 440 V for 220 kV Sub Station)	Set	18,88,365	1	18,88,365
	Subtotal K				18,88,365
L	FIRE PREVENTION AND EXTINGUISHING SYSTEM				
1	Nitrogen Injection Fire Prevention & Extinguishing System for Transformer	Set	6,23,161	4	24,92,644
2	Fire Protection for GIS cum Control Room Building, etc. (Portable type the Extinguishers System)	Lot	6,89,574	1	6,89,574
	Subtotal L				31,82,218
M	ILLUMINATION SYSTEM				
1	MLDB	Nos	15,55,720	1	15,55,720
2	ELDB	Nos	7,28,643	1	7,28,643
3	GIS cum Control Room Building Illumination with CFL/Metal Halide Lamps				

Bay
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Sr. No.	Description of Material	Unit	Unit Price	TOTAL COST OF Material	
				Total Quantity	Total Amount
	5c X 2.5sq.mm	Nos	455	46	20,932
	7c X 2.5sq.mm	Nos	479	50	23,937
	10c X 2.5sq.mm	Nos	542	62	33,600
	12c X 2.5sq.mm	Nos	668	90	60,151
	14c X 2.5sq.mm	Nos	724	-	-
	16c X 2.5sq.mm	Nos	757	60	45,409
	19c X 2.5sq.mm	Nos	779	4	3,116
	27c X 2.5sq.mm	Nos	946	28	26,500
	4P,0.75	Nos	333	40	13,333
	2c X 4sq.mm	Nos	479	96	45,959
	4c X 4sq.mm	Nos	720	174	1,25,363
	7c X 4sq.mm	Nos	943	8	7,546
	Subtotal N				21,36,569
O	33kV XLPE POWER CABLE AND ACCESSORIES				
1	XLPE POWER CABLE				
	3.5c x 300 Sq.mm	km	6,20,643	0	1,39,645
2	PVC POWER CABLE				
	3.5 c x 90 Sq. mm	km	3,06,494	-	-
	3.5 c x 70 Sq. mm	km	2,48,634	0	31,079
	3.5 c x 35 Sq. mm	km	1,43,643	1	96,959
	4 c x 16 Sq. mm	km	99,202	0	42,161
	4 c x 4 Sq. mm	km	49,098	-	-
3	HR FRLS CONTROL CABLE				
	2c x2.5 Sq.mm	km	45,913	1	49,356
	4 c X 2.5 sq. mm	km	78,317	-	-
	7 cX 2.5 sq. mm	km	1,30,260	2	2,03,206
	10cX2.5sq. mm	km	1,82,480	2	4,50,726
	12cX2.5sq. mm	km	2,16,847	3	6,50,541
	16cX2.5sq. mm	km	2,86,187	2	5,80,960
	19cX2.5sq. mm	km	3,36,506	0	33,651
	2cX4sq.mm	km	61,862	3	1,63,625
	4c X 4 sq.mm	km	1,13,214	5	5,17,954
	7cX4sq. mm	km	2,01,841	0	60,552
4	36 kV XLPE CABLE				
a)	33 kV XLPE Cable for connecting Transformer to 33 kV GIS of size 1 x 630 sq.mm. (Three Cables with one Spare Cable in each Circuit)	km	9,13,822	4	36,91,841
b)	33kV Indoor Termination Suitable for above Cable	Nos	4,909	-	-
c)	33kV Outdoor Termination Suitable for above Cable	Nos	3,096	-	-
	Subtotal O				67,12,255
P	GROUNDING / EARTHING SYSTEM				
a)	40 mm MS Rod for Earthmat(*)				
	40mm MS rod for earthing	km	4,95,112	5	25,69,632
	75x12 G.S Flat	km	4,30,707	1	3,38,097
	50x6 G.S Flat	km	1,43,569	0	21,642
	50x6 M.S Flat	km	1,09,565	0	29,543
	Cleat type clamp to suit 75 x 12 G.S Flat	Nos	192	200	38,479
	3 Mtr long,40mm dia M.S pipe earth electrode with test link and without pit	Nos	2,406	-	-
	3m long, 40 mm dia Earth rod electrode with untreated pit	Nos	1,925	29	55,834
	3m long, 20 mm dia earth rod electrode without pit	Nos	2,406	6	14,438
	3m long, 40 mm dia GI Pipe earth electrode	Nos	2,413	10	24,129
	Lightning Protection				
	7/3.66 mm GS earth wire	km	45,000	0	9,900
	Cleat clamp on structure to suit 7/3.66 mm GS earth wire	No	193	100	19,340
	Pad clamp on structure to suit 7/3.66 mm earth wire and 75 x 12 GS flat	No	1,845	13	23,979
	25x3 GI Flat	km	35,893	0	12,742
	1.5m long GI spike	Nos	723	2	1,445
	2.5m long GI spike	Nos	723	1	723
	Test links	Nos	241	-	-
	Subtotal P				31,59,923
Q	STEEL STRUCTURES FOR TOWERS, BEAMS AND EQUIPMENT				
	Tower and Beams				
	220 kV Tower				
	CA Type	kg	90	11,367	10,24,233
	BG1 (WITH DEV)-16m	kg	90	3,770	3,39,129
	Lighting-cum-lightning Mast	kg	90	5,711	5,13,703
	33 kV Tower				
	Tower-3T	kg	90	9,078	8,16,494
	Girder-3G 1	kg	90	2,539	2,28,397
	Girder-3G 2	kg	90	2,496	2,24,521
	Equipments				
	Standard structures for 220 KV equipments				
	CVT	kg	90	1,080	97,096
	WT	kg	90	892	80,240
	SA	kg	90	98	8,815

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Sr. No.	Description of Material	Unit	Unit Price	TOTAL COST OF Material	
				Total Quantity	Total Amount
a	2x36 Watts Fluorescent Lamp in Industrial Reflector type Fixtures suitable for surface/ pendant mounting CGL Cat Ref. IBA1424EB	Nos	1,782	-	-
b	230 V, 5/15 A, Indoor Receptacle 3 Pin type-R1	Nos	477	22	10,494
c	15 A, 1-Ph, 3 Pin Industrial Type Switch Socket Outlet	Nos	2,146	-	-
d	32 A, SPN MCB in 2 mm Thick sheet Steel Enclosure with 3 Pin Socket for A.C (Indoor)	Nos	1,348	10	13,480
e	32 A, SPN MCB in 2 mm Thick sheet Steel Enclosure with 3 Pin Socket for A.C (outdoor)	Nos	2,696	-	-
f	450 mm Exhaust Fan	Nos	2,385	7	16,695
g	450 mm Acid Proof Exhaust Fan (for Battery Room)	Nos	9,539	2	19,078
h	1400 mm Ceiling Fans with Electronic Regulator	Nos	2,981	5	14,905
i	Point Wiring	Nos	708	161	1,14,001
j	Indoor Lighting Panel (ACP-1 type) as per Technical Specification	Nos	32,199	4	1,28,794
k	DC Lighting Panel (DCP Type) as per Technical Specification	Nos	46,509	1	46,509
4	220/33 kV GIS Building Illumination			-	-
a	1x250 W- Industrial Metal Halide Luminaire CGL Cat ref. No. FAD 1314	Nos	1,864	-	-
b	1x60 W GLS Bulk Head Light Fixture of CGL tube 1BH 1110 BC or equivalent	Nos	226	-	-
c	230 V, 5/15 A, Indoor Receptacle 3 Pin type-R1	Nos	477	-	-
d	32 A, SPN MCB in 2 mm Thick sheet Steel Enclosure with 3 Pin Socket for A.C (Indoor)	Nos	1,014	2	2,027
e	32 A, SPN MCB in 2 mm Thick sheet Steel Enclosure with 3 Pin Socket (outdoor)	Nos	2,027	-	-
f	1x 11 W Portable Battery operated (3 hrs. Backup) CFL Emergency Lamp(M/S BPL make)	Nos	3,578	4	14,311
g	Point Wiring	Nos	566	44	24,924
h	Indoor Lighting Panel (ACP-1 type) as per Technical Specification	Nos	32,199	6	1,93,191
i	DC Lighting Panel (DCP Type) as per Technical Specification	Nos	46,509	2	93,018
j	32 A, TPN MCB in 2 mm thick Steel Enclosure with 3 Pin Socket (Indoor)	Nos	2,027	2	4,054
5	Switchyard Lightning			-	-
a	Flood light Luminaire with 2x400 W HPSV/T+Lamp-Bajaj cat. BJE22 CA - R0	Nos	7,909	-	-
b	Lighting JB with 5 nos. of Terminal Blocks	Nos	775	8	6,198
c	250 A oil Filtration Socket	Nos	2,981	1	2,981
6	Street Lighting (Solar lighting system)			-	-
a	120W Solar lighting system for Street lighting with 9m height pole, Inbuilt in long life maintenance free batteries (capacity is 12V, 120AH)	Nos	1,19,254	8	9,54,031
7	Transformer Area Lighting as per specification			-	-
a	1x70W HPSV 240V AC industrial well glass fixture for pendant mounting with control gear box G (BJDWI-70SV).	Nos	1,370	-	-
b	Lighting JB	Nos	775	3	2,325
	Subtotal M				39,45,380
N	Power Cables and Copper Conductor Armoured Control Cables alongwith:Lugs, Glands and Straight Joints				
	XLPE POWER CABLE				
	1c X 630sq.mm	km	10,78,001	-	-
	Terminations for the above				
	1c X 630sq.mm	Nos	2,103	48	1,00,944
	3.5c X 300sq.mm	Nos	3,114	16	49,824
	PVC POWER CABLE (Other than those available in the Contract)				
	4c X 6sq.mm	km	96,369	-	-
	2c X 6sq.mm	km	76,601	2	1,49,295
	1c X 150sq.mm	km	3,01,864	0	86,937
	Terminations for the above				
	3.5c X 90sq.mm	nos	1,584	-	-
	3.5c X 70sq.mm	nos	1,107	4	4,428
	3.5c X 35sq.mm	nos	642	22	14,124
	4c X 16sq.mm	nos	560	16	8,952
	4c X 6sq.mm	nos	395	-	-
	2c X 6sq.mm	nos	269	140	37,590
	1c X 150sq.mm	nos	653	32	20,880
	HR- FRLS CONTROL CABLE				
	5c X 2.5sq.mm	km	1,05,698	1	1,08,552
	27c X 2.5sq.mm	km	9,98,720	1	10,28,682
	4P, 0.75	km	1,38,087	1	1,10,470
	Terminations for the above				
	2c X 2.5sq.mm	Nos	295	34	10,046
	4c X 2.5sq.mm	Nos	423	-	-

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Sr. No.	Description of Material	Unit	Unit Price	TOTAL COST OF Material	
				Total Quantity	Total Amount
	BPI	kg	90	-	-
	Subtotal Q				33,32,627
R	EOT CRANE				
a.	3.5T for 220kV GIS ROOM	Set	6,76,024	1	6,76,024
b.	2.5T for 33kV GIS ROOM	Set	4,53,777	-	-
c.	Moveable Ladder of suitable Capacity for 220 kV & 33kV GIS Room	Nos	1,25,892	2	2,51,784
	Subtotal R				9,27,808
S	Insulator Strings / Disc Insulators, Hardware, Conductor, Bus Bar Material, Cable Trays, Clamps, Connectors, including Equipment Connectors, Pipes for Equipment & Lighting, all Accessories etc				
	220kV CLAMPS & CONNECTORS				
	Terminal connector on 26.66/33.33 MVA Transformer SF6 to Oil bushing to suit GIS Bus Duct	Nos	4,458	-	-
	Terminal connector on 198kV LA to suit 1 or 2 x MOOSE / ZEBRA ACSR	Nos	3,450	-	-
	Terminal connector on 245kV CVT to suit 1 or 2 x MOOSE / ZEBRA ACSR	Nos	2,962	-	-
	Terminal connector on Wave Trap to suit 1 or 2 x MOOSE / ZEBRA ACSR	Nos	2,709	-	-
	Terminal connector on 220kV BPI to suit 1 or 2 x MOOSE / ZEBRA ACSR	Nos	3,208	-	-
	Tee connectors to suit 1 or 2 x MOOSE / ZEBRA ACSR on both ways	Nos	3,413	-	-
	Suspension Hardware Assembly along with Insulators (220/33 kV side)	Lot	55,512	2	1,11,024
	Substituted Items Amount (b)		98,232	-	-
	33kV CLAMPS & CONNECTORS				
	Terminal connector on 30kV Lightning Arrestor, to suit 1 or 2XMOOSE / WOLF ACSR Conductor	Nos	2,818	-	-
	Terminal connector on 26.66/33.33 MVA transformer LV bushing to suit 1X MOOSE ACSR Conductor	Nos	2,562	-	-
	Terminal connector on Cable Sealing End, to suit 2XMOOSE ACSR Conductor	Nos	1,552	-	-
	Terminal Connectors to suit 1CX630sq.mm XLPE Cable sealing end	Nos	2,962	-	-
	BUS BAR MATERIALS				
	MOOSE / ZEBRA / WOLF ACSR conductor	km	5,56,568	0	1,83,667
	Cable Trays:				
	600mm Wide perforated Tray	km	13,82,167	0	3,85,625
	300mm Wide perforated Tray	km	6,04,698	0	19,653
	150mm Wide perforated Tray	km	43,193	0	648
	Structural Steel for above	MT	65,653	3	1,64,133
	PVC Pipes:				
	50mm dia	km	4,31,927	0	32,395
	75mm dia	km	4,31,927	0	6,479
	100mm dia	km	4,31,927	0	30,235
	Sump pumps				
	5HP	Nos	2,48,820	1	2,48,820
	0.5HP	Nos	43,194	6	2,59,164
	220kV Bus Post insulators	Nos	38,010	-	-
	Subtotal S				14,41,841
T	TESTING AND MAINTENANCE EQUIPMENT				
1	Meggar 5 kV (Motorized)	No	68,786	1	68,786
2	Meggar 1 kV (Motorized)	No	6,995	1	6,995
3	Digital Multimeter	Nos	9,911	2	19,822
4	D - Spanner Set (Insulated)	Nos	670	2	1,340
5	Ring - Spanner Set (Insulated)	Nos	699	2	1,398
6	Torque Wrench Set	Nos	11,659	2	23,318
7	Insulating Gloves	Set	1,457	5	7,285
8	Helmets	Set	526	5	2,630
9	Gas Evacuating and Refilling Device	Set	33,34,384	1	33,34,384
10	Gas Leakage Monitor	Nos	69,952	2	1,39,904
11	Relay Test Kit	Nos	25,64,911	1	25,64,911
12	Synchronizing Trolley	Set	1,44,774	-	-
13	Time Synchronisation Equipment	Lot	Included	-	-
	Subtotal T				61,70,773
	Sub-Total - LOA Items (A)				28,82,25,773
	NEW ITEMS (B)				
A-1	220KV Single Phase Breaker Bay Module for Spare Transformer	Set	1,83,08,548	1	1,83,08,548

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HPPTCL Division Sarabai
Bhunar Dist. Kullu (H.P.)-175125

Sr. No.	Description of Material	Unit	Unit Price	TOTAL COST OF Material	
				Total Quantity	Total Amount
A-2	For Additional Bays- 245 kV, 4000A, 50 kA, 3 Single Phase (Isolated) Units SF ₆ Gas Insulated, Metal Enclosed BUS BARS each unit, enclosed in Bus Enclosures running along the length of the Switchgear to Interconnect each of the Circuit Breaker Bay Module complete with Voltage Transformer and Safety Ground Switch etc.	Set	8,10,000	1	8,10,000
A-3	1- Phase SF ₆ Duct to connect to 220 / 33 kV, 26.66 / 33.33 MVA Transformer / Lines With GIS etc (only the additional quantity over and above 85.5 to be paid).	Mtr	1,36,153	93	1,25,94,153
B-1	33KV Single Phase Breaker Bay Module for Spare Transformer	Set	15,71,576	-	-
C	36 kV OUTDOOR EQUIPMENT			-	-
C-1	30 kV, Single phase, Surge Arrestors with Surge Counter, Leakage Meter and Junction Box	Nos.	16,223	19	3,08,237
C-2	36 kV, Line Isolator Switch with Earth Switch	Set	1,87,917	6	11,27,502
D	SUBSTATION AUTOMATION SYSTEM Complete including Hardware and Software for 7 Bays and Remote Control Station alongwith Associated Equipments	Lot (7bays)	70,97,760	1	70,97,760
E	For Additional Feeder - 220 kV C&R Panel For Bus Bar Protection Panel		8,02,497	1	8,02,497
F	36 kV XLPE CABLE			-	-
i	33 kV XLPE Cable For connecting Transformer to 33 kV GIS of size 1x1000 sq.mm Aluminium conductor	Mtr	2,905	-	-
ii	33 kV Indoor Termination Suitable for Above Cable suitable at GIS conforming to IEC: 60859	Nos.	75,000	-	-
iii	33 kV Outdoor Termination Suitable for above cable	Nos.	8,000	-	-
	Sub-Total - New Items (B)				4,10,48,697
	GRAND BOQ TOTAL (A+B).				30,92,74,469
	Substituted & Additional Items (HPPPTCL/33/220 kV Phojal/L&T/Vol-XIV/2015-2832-39 Dated 13/08/2015 Amemdment No. ? (Ann-1 attached)				
(A)	M. illumination System (Lighting Fixtures)				
1	2x28 W, T5 type industrial trough type fluorescent fixture with electronic ballast (Bajaj BTIV 228) with lamp	Nos.	1,782	72	1,28,304
2	2x28 W, T5 type fluorescent fixture corrosion proof fitted with electronic ballast (Bajaj BTIV 228) with lamp	Nos.	1,782	9	16,038
3	2x28 W, T5 mirror optics type fixture (Bajaj BTIV 128) with lamp	Nos.	1,782	34	60,588
4	2x28 W, T5 type industrial trough type fluorescent fixture with electronic ballast (Bajaj BTIV 128) with lamp	Nos.	1,370	5	6,850
5	Flood light fixture with 2x400W HPSV-T Lamp & control gear (Bajaj BJENF 24) with lamp	Nos.	7,909	6	47,454
6	Flood light fixture with 2x400W HPSV-T Lamp & control gear (Bajaj BJENF 14) with lamp	Nos.	5,536	3	16,608
7	1x70W HPSV 240AC industrial type fixture suitable for wall mounting with control gear (Bajaj BGEMF 17) with lamp	Nos.	1,370	12	16,440
8	1x250W Industrial type metal halide luminaries (Bajaj BJHBBIS 250 MH) with lamp	Nos.	1,864	6	11,184
9	10/20W CFL Fitting suitable for 220v DC source	Nos.	959	18	17,262
	Subtotal A				3,20,728
(B)	S) Clamps & Connectors-220KV				
1	Expansion type terminal connectors to suit 3" IPS aluminium	Nos.	4,458	4	17,832
2	Terminal connector to suit single Zebra ACSR on CVT (HA)	Nos.	2,962	6	17,772
3	Terminal connector to suit single Zebra ACSR on SF6 air bushing (HA/VA)	Nos.	2,709	6	16,254
4	Tee connector to suit single Zebra ACSR	Nos.	3,413	12	40,956
5	PG clamp to suit single Zebra ACSR	Nos.	2,709	4	10,836
6	Rigid type terminal connector to suit 3" IPS aluminium tube on SF6 air Bushing(HA)	Nos.	2,709	4	10,836
	Subtotal B				1,14,486
(C)	S) Clamps & Connectors-220KV				
1	Terminal connector to suit twin panther ACSR on isolator (H/VA)	Nos.	2,818	12	33,816
2	Terminal connector to suit single Wolf ACSR on isolator (HA)	Nos.	2,818	24	67,632
3	Tee connector to suit Panther ACSR to twin Panther ACSR	Nos.	1,552	6	9,312
4	Tee connector to suit Panther ACSR to single Panther ACSR	Nos.	1,552	6	9,312
5	Tee connector to suit Wolf ACSR to Wolf ACSR	Nos.	1,552	24	37,248
6	Terminal connector to suit single Panther ACSR on cable termination kit	Nos.	1,552	12	18,624
7	Terminal connector to suit single Wolf ACSR on cable termination kit	Nos.	2,962	12	35,544
	Subtotal C				2,11,488

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Sr. No.	Description of Material	Unit	Unit Price	TOTAL COST OF Material	
				Total Quantity	Total Amount
(D)	Total (A+B+C)				6,46,702
(E)	New Items Required/Provided (Not Provided in the Awarded BOQ)				
1	SF6 I Air Bushing including all taxes	Nos.	7,50,000	4	30,00,000
	Subtotal 1				30,00,000
2	NEUTRAL FORMATION				
2.1	33 kV XLPE, Cu Cable 1 C X1000 sq.mm inclusive all taxes other charges	Mtr	13,000	210	27,30,000
2.2	220 kV InterConnector to suit 4" IPS AL Tube on Main way, 2xMoose ACSR on Branch Way	Nos.	1,840	2	3,680
2.3	Terminal Connector on 33kV Neutral Bushing of Transformer to suit 4" IPS AL Tube (Rigid type)	Nos.	1,480	3	4,440
2.4	Terminal Connector on 33kV BPI to Suit 4" IPS AL Tube(Rigid/Slide Type)	Nos.	1,190	5	5,950
2.5	Terminal Connector on 4" IPS AL Tube to Suit 2 No. 33kV Cable Terminations	Nos.	2,290	5	11,450
2.6	Terminal Connector on 4" IPS AL Tube to Suit 1 No. 33kV Cable Termination	Nos.	1,145	2	2,290
2.7	Terminal Connector on 33kV Horizontal Mounted BPI to suit 75x12mm GS Flat	Nos.	1,080	4	4,320
2.8	Pad Type Compression Clamp to suit 2xMoose ACSR & 75x12mm GS Flat	Nos.	410	2	820
2.9	Pad Type Compression Clamp to suit 2xMoose ACSR & 4" IPS AL Tube	Nos.	1,310	-	-
2.10	Corona bell to Suit 4" IPS AL Tube	Nos.	740	7	5,180
2.11	Rigid Spacer to Suit 2xMoose ACSR Conductor with 250mm sub conductor spacing	Nos.	510	-	-
2.12	Tee Connector To Suit 2x Moose ACSR Conductor in all ways	Nos.	1,720	2	3,440
2.13	33kV Outdoor Cable Termination Kit to suit 1 Cx1 000sqmm Cu XLPE Cable	Nos.	3,515	12	42,180
2.14	33kV Indoor Cable Termination Kit to suit 1 Cx1 000sqmm Cu XLPE Cable	Nos.	3,235	8	25,880
2.15	33kV Single Tension string hardware assembly without turn buckle for Twin 'Moose' ACSR	Nos.	14,256	-	-
2.16	33kV Single Tension string hardware assembly with turn buckle for Twin 'Moose' ACSR	Nos.	12,528	-	-
2.17	75 X 12 mm GS Flat	Mtr	430	15	6,450
2.18	150 NB Pole Structure (as per drawing)	Nos.	12,500	5	62,500
2.19	5500 mm long 4" IPS Tube	Nos.	12,000	3	36,000
2.20	2000 mm long 4" IPS Tube	Nos.	7,000	2	14,000
2.21	33 kV BPI	Nos.	4,500	10	45,000
	Subtotal 2				30,03,580
3	Additional price of Tri Vector Meters for ABT features	Nos.	10,336	14	1,44,704
	Subtotal 3				1,44,704
	Sub-Total (E) (1+2+3)				61,48,284
	TOTAL G = (D+E) GRAND TOTAL Amendment no. 2 (A+B)				67,94,986
	Fire Detection & Alarm as per Amenment No-3 (Annexure-2)				
1	Addressable fire detection & Alarm System	Ls	8,72,557	1	8,72,557
	TOTAL				8,72,557
			Total		
	ANNEXURE - MS				
	QUANTITY AND COST OF MANDATORY SPARES (Ann-3 attached)				
Sr. No.	DESCRIPTION	UNIT	Unit Price		
	MANDATORY SPARES				
a)	220 kV GIS Circuit Breaker				
(i)	245 kV, 3 Phase Circuit Breaker with Interrupting Chamber complete with all necessary Apparatus (1 no. of each Rating)	Nos	45,92,127	1	45,92,127
(ii)	Rubber Gasket, 'O' Rings and Seal	Set	28,916	1	28,916
(iii)	Trip Coil with Resistor	Nos	9,638	3	28,914
(iv)	Closing Coil with Resistor	Nos	9,638	3	28,914
(v)	Molecular Filter	Set	28,916	3	86,748
(vi)	Density / Pressure Monitoring System	Nos	48,193	1	48,193
(vii)	Relays, Power Contactors, Push buttons, Timers & MCB etc	Set	1,15,664	1	1,15,664
(viii)	Pressure Switches	Set	48,193	1	48,193
(ix)	Auxiliary Switch Assembly	Nos	47,229	1	47,229
(x)	Operation Counter	Nos	38,555	1	38,555
(xi)	Rupture Disc / Diaphragm	Nos	1,15,664	1	1,15,664
(xii)	245 kV, 3 Phase Circuit Breaker Operating mechanism complete with all necessary connecting Apparatus each Rating	Nos		1	-
(xiii)	All Type of Coupling for SF ₆ (1 no. of each type)	Set	57,832	1	57,832
b)	220 kV Current Transformer				
(i)	Multi Ratio Single Phase Current Transformer of each Rating (3 Nos. of each Rating)	Set	21,29,834	1	21,29,834

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Sr. No.	Description of Material	Unit	Unit Price	TOTAL COST OF Material	
				Total Quantity	Total Amount
c)	220 kV Potential Transformer			-	-
(i)	Single Phase Potential Transformer complete with all Gaskets and Mounting Hardware	Set	10,70,579	1	10,70,579
d)	198 kV Surge Arrestor			-	-
(i)	Complete Surge Arrestor (for 1 Phase) GIS Type	Nos	85,102	1	85,102
(ii)	Surge Counter / Monitor	Nos	570	1	570
e)	245 kV Isolators & Earth Switch			-	-
(i)	245 kV, Single Phase Disconnecting Switch Internal Parts complete with all necessary Gaskets, Mounting Hardware etc.	Set	10,75,742	1	10,75,742
(ii)	245 kV, Single Phase Grounding Switch Internal Parts complete with all necessary Gaskets, Mounting Hardware etc.	Set	8,91,576	1	8,91,576
(iii)	245 kV, Single Phase High speed Fault Making Grounding Switch Internal Parts complete with all necessary Gaskets, Mounting Hardware etc.	Set	10,75,742	1	10,75,742
f)	33 kV GIS Circuit Breaker			-	-
(i)	Rubber Gasket, 'O' Rings and Seal	Set	21,330	1	21,330
(ii)	Trip Coil	Nos	8,379	3	25,138
(iii)	Closing Coil	Nos	8,379	3	25,138
(iv)	Molecular Filter	Set	3,047	3	9,141
(v)	Density / Pressure Monitoring System	Nos	22,853	1	22,853
(vi)	Relays, Power Contactors, Push buttons, Timers & MCB etc	Set	4,57,065	1	4,57,065
(vii)	Closing Assembly / Valve	Nos	2,285	1	2,285
(viii)	Pressure Switches	Set	2,285	1	2,285
(ix)	Auxiliary Switch Assembly (For CB)	Nos	29,710	1	29,710
(x)	Rupture Disc / Diaphragm	Nos	15,997	1	15,997
(xi)	36 kV, 3 Phase Circuit Breaker Operating Mechanism complete with all necessary connecting Apparatus (each Rating)	Nos	7,45,015	1	7,45,015
g)	33 Kv Current Transformer			-	-
(i)	Multi Ratio Single Phase Current Transformer of each Rating (3 Nos. of each Rating)	Set	2,52,528	1	2,52,528
h)	33 kV Potential Transformer			-	-
(i)	Single Phase Potential Transformer complete with all Gaskets and Mounting Hardware	Set	1,89,682	1	1,89,682
i)	30 kV Surge Arrestor			-	-
(i)	Complete Surge Arrestor including Base Surge Counter & Accessories: AIS Type	Nos	15,700	1	15,700
(ii)	Surge Counter / Monitor	Nos	8,722	1	8,722
j)	33 kV Isolator & Earth Switch			-	-
(i)	36 kV, 3 Phase, 1250 Amperes Disconnecting Switch Operating Mechanism Complete with all necessary Connecting Apparatus	Set	92,175	1	92,175
(ii)	36 kV, 3 Phase, 1250 Amperes Grounding Switch Operating Mechanism Complete with all necessary Connecting Apparatus	Set	-	-	-
k)	Battery			-	-
	220 Volt / 48 Volt Batteries			-	-
(i)	Spare Battery cell without Electrolyte	Nos	28,368	10	2,83,679
(ii)	Terminal Connectors with Bolts & Nuts (Each Type)	Nos	4,364	10	43,640
(iii)	Float Level Indicators (each type)	Nos	1,363	10	13,627
(iv)	Vent Plugs (each type)	Nos	1,636	10	16,358
l)	Battery Charger			-	-
	220 Volt / 48 Volt Batteries			-	-
(i)	Set of Control Cards (of each type)	Set	69,904	1	69,904
(ii)	Set of Relays	Set	8,389	1	8,389
(iii)	Set of Contactor	Set	25,166	1	25,166
(iv)	Filter Capacitors	Set	8,389	1	8,389
(v)	Thyristor / Diodes	Set	11,185	1	11,185
(vi)	Set of Switches	Set	22,930	1	22,930
(vii)	Set of Wound Resistor	Set	4,193	1	4,193
(viii)	Potentiometers	Set	4,193	1	4,193
(ix)	Fuses of Thyristor with Indicators	Set	3,635	6	21,807
m)	LT Switchgear			-	-
(i)	Relays(Auxiliary)	Set	95,375	1	95,375
(ii)	CTs And PTs	Set	8,227	1	8,227
(iii)	Switches / Push Buttons and Meters	Set	27,501	1	27,501
(iv)	TPN Switches / MCB	Set	93,997	1	93,997
(v)	LT Breaker Spares			-	-
	Spring Charging Motor	Nos	27,504	1	27,504
	Auxiliary Contacts Sets	Set	1,261	2	2,521
	Busbar Seal off Insulators	Nos	458	5	2,292
	Arc Chutes	Set	3,782	2	7,563
	Moving Contacts	Set	3,209	1	3,209
	Arcing contacts(Fixed / Moving)	Set	3,209	1	3,209
	Spring (Closing / Opening)	Nos	573	1	573
	Closing Coil	Nos	1,718	1	1,718
	Tripping Coil	Nos	1,260	1	1,260
	Auxiliary Finger Contact	Set	1,203	1	1,203
	Limit Switches	Set	5,156	1	5,156
	Jaw Contacts	Set	372	1	372
(vi)	BUSBAR			-	-
	Busbar Insulators	Nos	143	5	716
	Interphase Barrier	Nos	716	2	1,432

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Sr. No.	Decription of Material	Unit	Unit Price	TOTAL COST OF Material	
				Total Quantity	Total Amount
	Busbar Strip 1 mm (Aluminium)	Mtr	1,074	5	5,371
n)	DG SET				
(i)	Set of Filters 1 Set(Lubeoil / Fuel / Air Circuit	Set	6,603	1	6,603
(ii)	Solenoid Coil Assembly	Nos	2,934	1	2,934
(iii)	Self Starter Assembly	Nos	54,930	1	54,930
(iv)	Lub - Oil Pressure Safety Control	Nos	13,882	1	13,882
(v)	High Water Temperature Safety Control	Nos	2,197	1	2,197
(vi)	Diode	Nos	753	2	1,505
o)	Optic Fibre Cable	Mtr	95	500	47,746
p)	220 kV CVT	Nos	3,95,452	1	3,95,452
	TOTAL OF MANDATORY SPARES				1,48,28,766
					33,17,70,778
Total Supply Value (NET SUPPLY VALUE)				33,17,70,778	

Entry tax Paid **1,25,32,184**

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HIMACHAL PRADESH POWER TRANSMISSION CORPORATION LTD.

Cost of the TelK Make Power Transformers and accessories				
Sr. no.	Description	Invoice no.	Date	Gross amount Rs.
A	Supply Cost of the Power Transformer			
1	26.66/33.33 MVA Single Phase Transformer, UNIT-1	509/14-15	21-05-2014	2,91,23,941
2	26.66/33.33 MVA Single Phase Transformer, UNIT-2	518/14-15	27-06-2014	2,91,23,941
3	26.66/33.33 MVA Single Phase Transformer, UNIT-3	522/14-15	30-06-2014	2,91,23,941
4	26.66/33.33 MVA Single Phase Transformer, UNIT-4	537/14-15	26-08-2014	3,24,99,121
5	Oil Storage Tank and oil sampling bottles	534/14-15	08-08-2014	23,62,310
6	Supervision Charges			13,48,320
	Total Supply Cost of Transformer			12,35,81,574
B	Price variation Paid			
1	PV Bill Unit-1	523/14-15	10-09-2014	27,00,144
2	PV Bill Unit-2	524/14-15	10-09-2014	21,38,163
3	PV Bill Unit-3	525/14-15	10-09-2014	21,38,163
4	PV Bill Unit-4	538/14-15	26-08-2014	27,00,144
	Total Price variation paid			96,76,614
C.	Entry tax paid			61,11,663

13,93,69,851

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HIMACHAL PRADESH POWER TRANSMISSION CORPORATION LTD.

Name of Scheme	Construction of 220/ 33 kV, 80/100 MVA Sub Station at Phosal
COST OF CIVIL WORKS AND ERECTION OF EQUIPMENT / MATERIAL	

Sr. No.	DESCRIPTION	UNIT	QTY.	ERECTION PRICE	TOTAL
1	2	3	4	5	6= 4 x 5
A	POWER TRANSFORMER				
1	26.67 / 33.33 MVA, 220 / 33 kV Single Phase Transformer including Bushing, Accessories and First filling of Oil	Nos.	4	₹12,00,000.00	₹48,00,000.00
B	245 kV GIS EQUIPMENT				
1	245 kV, 1600 A, 50 kA SF ₆ Gas Insulated Transformer Bay Module each comprising of SF ₆ Gas Insulated Circuit Breaker, Current Transformer Two Busbar Disconnectors with Grounding Switch Surge Arrestors, SF ₆ Gas Monitoring System for complete Bay, LCC, Three 1 - Phase SF ₆ S Ducts and SF ₆ / Oil Bushing to connect to 220 / 33 kV, 50 / 63 MVA Transformer and Accessories with GIS etc to complete Transformer Bay Module	Nos.	2	₹5,44,991.00	₹10,89,982.00
2	245 kV, 2000 A, 50 kA SF ₆ Gas Insulated Feeder Bay Module each comprising of SF ₆ Gas Insulated Circuit Breaker, Current Transformers, Two Bus Bar Disconnectors with Grounding Switch, Line Disconnector with Safety Grounding Switch, High Speed Fault Making Grounding Switch, SF ₆ Gas Monitoring System for complete Bay, LCC, GIS Duct and Air / SF ₆ Bushing Termination Enclosure and Accessories with GIS etc to complete Feeder Bay Module	Nos.	2	₹5,44,991.00	₹10,89,982.00
3	245 kV, 4000 A, 50 kA, 3 Single Phase (Isolated) Units, SF ₆ Gas Insulated Metal enclosed BUSBARS each Unit, enclosed in Bus Enclosures running along the Length of the Switchgear to interconnect each of Circuit Breaker Bay Module. Each Bus Bar Set shall be complete with Voltage Transformer complete with Safety Grounding Switch	Nos.	2	₹4,81,190.00	₹9,62,380.00
4	245 kV, 4000 A, 50 kA SF ₆ Gas Insulated Bus Coupler Bay MODULE comprising of SF ₆ Gas Insulated Circuit Breaker, Current Transformers Two Disconnectors with Safety Grounding Switches SF ₆ Gas Monitoring System for	Nos.	1	₹5,44,991.00	₹5,44,991.00

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Sr. No.	DESCRIPTION	UNIT	QTY.	ERECTION PRICE	TOTAL
1	2	3	4	5	6= 4 x 5
	complete Bay, LCC etc				
5	245 kV CVT with Junction Box	Nos.	6	₹9,114.00	₹54,684.00
6	198 kV Lightning Arrester with Counter and Leakage Meter	Nos.	6	₹5,468.00	₹32,808.00
C	36 kV, 2000 A, 40 kA for 3 sec., SF ₆ Gas Insulated Metal Enclosed Busbar each Unit, enclosed in Bus Enclosures running along the Length of the Switch gear to interconnect each of Circuit Breaker Bay Module. Each Busbar Set shall be complete with Voltage Transformer complete with Safety Grounding Switch.				
1	36 kV, 1600 A SF ₆ Gas Insulated Feeder Bay Module each comprising of SF ₆ Gas Insulated Circuit Breaker, Current Transformers, Two Busbar Disconnectors with Grounding Switch, Line Disconnector with Safety Grounding Switch, High Speed Fault Making Grounding Switch, SF ₆ Gas Monitoring System for complete Bay, LCC, GIS Duct and Air / SF ₆ Bushing Termination Enclosure and Accessories with GIS etc to complete Feeder Bay Module	Nos.	6	₹54,686.00	₹3,28,116.00
2	36 kV, 2000 A SF ₆ Gas Insulated Bus Coupler Bay Panel comprising of SF ₆ Gas Insulated Circuit Breaker, Current Transformer, Two Nos. of Disconnectors, SF ₆ Gas Monitoring System for complete Bus Coupler Panel	Nos.	1	₹54,686.00	₹54,686.00
3	36 kV, 1600 A SF ₆ Gas Insulated Power Transformer Panel each comprising of SF ₆ Gas Insulated Circuit Breaker, Current Transformer, Two Nos. of Bus Bar Disconnectors with Earthing Switch Surge Arrestor, SF ₆ Gas Monitoring System for complete Panel	Nos.	2	₹54,686.00	₹1,09,372.00
4	36 kV, 630 A SF ₆ Gas Insulated 250 kVA L. T. Transformer Panel comprising of SF ₆ Gas Insulated Circuit Breaker, Current Transformers Two numbers of Busbar Disconnectors with Earthing Switch, Surge Arrestor, SF ₆ Gas Monitoring System for complete L. T. Transformer Panel	Nos.	1	₹54,686.00	₹54,686.00
D	COMPLETE SUB STATION AUTOMATION SYSTEM including Hradware and Software for the Substation		1	₹1,64,058.00	₹1,64,058.00

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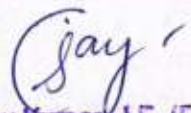
Sr. No.	DESCRIPTION	UNIT	QTY.	ERECTION PRICE	TOTAL
1	2	3	4	5	6= 4 x 5
	and Remote Control Station alongwith Associated Equipments				
1	BAY CONTROL UNIT 220 kV Bays	Nos.	3	included in Item at Sr. No.: D above	
2	33 kV Bays	Nos.	6		
E1	220 kV CONTROL AND RELAY PANEL				
1	CIRCUIT BREAKER CONTROL PANEL				
a	With Auto Reclose	Nos.	2	₹18,228.00	₹36,456.00
b	Without Auto Reclose	Nos.	3	₹18,228.00	₹54,684.00
2	Line Protection Panel (MAIN - I + MAIN - II)	Nos.	2	₹18,228.00	₹36,456.00
3	Bus Bar Protection Panel 220 kV Double Busbar Protection	Set	1	₹18,228.00	₹18,228.00
4	Transformer Protection Panel - H. V. SIDE	Nos.	2	₹18,228.00	₹36,456.00
E2	33 kV CONTROL AND RELAY PANEL				
1	CIRCUIT BREAKER CONTROL PANEL				
a	With Auto Reclose	Nos.	6	₹18,228.00	₹1,09,368.00
b	Without Auto Reclose	Nos.	4	₹18,228.00	₹72,912.00
2	Line Protection Panel	Nos.	6	included in Sr. No.: E2 - 1 above	
3	Transformer Protection Panel - L. V. SIDE	Nos.	2		
4	Transformer Protection Panel - Station Transformer	Nos.	1		
5	Bus Coupler Protection Panel	Nos.	1		
6	DR Evaluation Unit	Nos.	1		
F	PLCC for 220 kV LINE FEEDER				
1	2000 A, 0.5 mH / 1.0 mH, 50 kA Line Traps	Nos.	4	₹14,582.00	₹58,328.00
2	Coupling Device (Phase to Phase)	Nos.	4	₹10,938.00	₹43,752.00
3	HF Cable	LS	2	₹9,114.00	₹18,228.00
4	Carrier Equipment (for Speech + Protection and for Speech + Data)	Nos.	6	₹10,938.00	₹65,628.00
5	Protection Coupler	Nos.	4	₹10,938.00	₹43,752.00
6	Print Testing Kit	Set	1	₹10,938.00	₹10,938.00
7	EPBAX (24 / 8) with Telephone Sets	Set	1	₹10,938.00	₹10,938.00
G	AIR CONDITIONER AND VENTILATION SYSTEM				
1	Split AC (Capacity - 2T)	Nos.	10	₹18,228.00	₹1,82,280.00

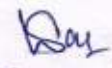
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Sr. No.	DESCRIPTION	UNIT	QTY.	ERECTION PRICE	TOTAL
1	2	3	4	5	6= 4 x 5
2	Ventillation System for 220 kV and 33 kV GIS Hall	LS	1	₹24,96,305.00	₹24,96,305.00
H	LT SWITCHBOARD				
1	415 V Main Switchboard	Nos.	1	₹1,54,944.00	₹1,54,944.00
2	415 V A. C. Distribution Board	Nos.	1	₹1,09,372.00	₹1,09,372.00
3	220 V, DCDB	Nos.	2	₹91,144.00	₹1,82,288.00
4	48 V, DCDB	Nos.	2	₹91,144.00	₹1,82,288.00
I	BATTERIES				
1	220 V, 400 AH	Set	2	₹91,144.00	₹1,82,288.00
2	48 V, 400 AH	Set	2	₹54,686.00	₹1,09,372.00
J	BATTERY CHARGER SYSTEM				
1	220 V	Set	2	₹18,228.00	₹36,456.00
2	48 V	Set	2	₹18,228.00	₹36,456.00
K	DG SET ALONGWITH CONTROL PANEL (100 kVA, 440 V for 220 kV Sub Station)	Set	1	₹91,144.00	₹91,144.00
L	FIRE PREVENTION AND EXTINGUISHING SYSTEM				
1	Nitrogen Injection Fire Prevention and Extinguishing System for Transformer	Set	1	₹3,31,143.00	₹3,31,143.00
2	Fire Protection for GIS cum Control Room Building etc (Portable Type the Extinguishers System)	Lot	1	₹5,39,059.00	₹5,39,059.00
M	ILLUMINATION SYSTEM	LS	1	₹8,74,323.00	₹8,74,323.00
1	Control Room / GIS Building	LS	1	included in Sr. No.: M above	
2	Switchyard Lighting	LS	1		
3	Solar Light System for Street Light	LS	1		
N	Power Cables and Copper Conductor Armoured Control Cables alongwith Lugs, Glands and Straight Joints	LS	1	₹21,74,444.00	₹21,74,444.00
O	33 kV XLPE POWER CABLE AND ACCESSORIES				
1	XLPE POWER CABLE 3.5 c X 300 sq. mm	km	1	₹1,08,624.00	₹1,08,624.00
2	PVC POWER CABLE				
	3.5 c X 90 sq. mm	km	0.4	₹84,016.00	₹33,606.40
	3.5 c X 70 sq. mm	km	1	₹84,016.00	₹84,016.00
	3.5 c X 35 sq. mm	km	0.4	₹59,406.00	₹23,762.40
	4 c X 16 sq. mm	km	0.5	₹59,406.00	₹29,703.00
	4 c X 4 sq. mm	km	2	₹34,798.00	₹69,596.00


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Sr. No.	DESCRIPTION	UNIT	QTY.	ERECTION PRICE	TOTAL
1	2	3	4	5	6= 4 x 5
3	HR - FRLS CONTROL CABLE				
	2 c X 2.5 sq. mm	km	2.50	₹33,157.00	₹82,892.50
	4 c X 2.5 sq. mm	km	3.00	₹33,157.00	₹99,471.00
	7 c X 2.5 sq. mm	km	2.00	₹36,985.00	₹73,970.00
	10 c X 2.5 sq. mm	km	1.50	₹42,727.00	₹64,090.50
	12 c X 2.5 sq. mm	km	1.00	₹42,727.00	₹42,727.00
	16 c X 2.5 sq. mm	km	1.00	₹50,475.00	₹50,475.00
	19 c X 2.5 sq. mm	km	0.40	₹52,297.00	₹20,918.80
	2 c X 4 sq. mm	km	1.60	₹36,439.00	₹58,302.40
	4 c X 4 sq. mm	km	1.60	₹43,000.00	₹68,800.00
	7 c X 4 sq. mm	km	1.60	₹63,781.00	₹1,02,049.60
4	36 kV XLPE CABLE				
a)	33 kV XLPE Cable for connecting Transformer to 33 kV GIS of size 1 x 630 sq.mm. (Three Cables with one Spare Cable in each Circuit)	km	2.00	₹1,89,531.00	₹3,79,062.00
b)	33 kV Indoor Termination suitable for above Cable	Nos.	6	₹3,697.00	₹22,182.00
c)	33 kV Outdoor Termination suitable for above Cable	Nos.	6	₹3,697.00	₹22,182.00
P	GROUNDING / EARTHING SYSTEM	LS	1	₹16,74,784.00	₹16,74,784.00
a)	40 mm MS Rod for Earthmat	LS	1	included in Item at Sr. No.: P above	
b)	GS / MS Flats	LS	1		
c)	Electrodes	LS	1		
d)	Lightning Mast / GS Shield Wire	LS	1		
Q	STEEL STRUCTURES FOR TOWERS, BEAMS AND EQUIPMENT	LS	1	₹2,14,351.00	₹2,14,351.00
R	EOT CRANE				
a	3.5 T for 220 kV GIS ROOM	Set	1	₹2,16,977.00	₹2,16,977.00
b	2.5 T for 33 kV GIS ROOM	Set	1	₹1,62,690.00	₹1,62,690.00
c	Moveable Ladder of suitable Capacity for 220 kV and 33 kV GIS Room	Nos.	2	₹50,945.00	₹1,01,890.00
S	Insulator Strings / Disc Insulators, Hardware, Conductor, Bus Bar Material, Cable Trays, Clamps, Connectors, including Equipment Connectors, Pipes for Equipment & Lighting, all Accessories etc	LS	1	₹4,37,849.00	₹4,37,849.00
S1	OLTE SYSTEM	Lot	1	₹50,94,500.00	₹50,94,500.00
T	CIVIL WORKS				
1	Soil Investigation	LS	1	₹3,84,685.00	₹3,84,685.00

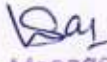
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 page no- 23

Sr. No.	DESCRIPTION	UNIT	QTY.	ERECTION PRICE	TOTAL
1	2	3	4	5	6= 4 x 5
2	Excavation & Filling for Land Development	LS	1		₹0.00
3	Retaining Wall	LS	1	₹7,81,192.00	₹7,81,192.00
4	Tower and Equipment Foundation, Transformer Foundation, Fire Wall, Cable Trenches including all Types of Crossings and all Metallic Work including Steel Racks for Cable, Cable Supports MS Angle Edging and RCC Covers with Lifting Arrangements	LS	1	₹63,74,611.00	₹63,74,611.00
5	Buried Cable Trenches for Auxillary Power Arrangement	LS	1	₹4,00,885.00	₹4,00,885.00
6	Site Surfacing and Antiweed Treatment	LS	1	₹11,37,070.00	₹11,37,070.00
7	Cement Concrete Roads including all Types of Crossings				
a)	5.00 metres wide Road cum Rail Track*	LS	1	₹15,32,846.00	₹15,32,846.00
b)	3.5 metres wide	LS	1	₹7,57,640.00	₹7,57,640.00
8	Storm Water Drainage including Culverts	LS	1	₹6,93,434.00	₹6,93,434.00
9	Security Fencing along with Gates and Security Room	LS	1	₹10,73,015.00	₹10,73,015.00
10	Buildings				
a)	Control Room Building cum 220 kV GIS Room alongwith Battery Room, PLCC Room, SCADA Room, Offices and Stores	LS	1	₹1,49,00,012.00	₹1,49,00,012.00
b)	33 kV GIS Building	LS	1	₹25,54,205.00	₹25,54,205.00
11	DG Set Outdoor Silent Type	LS	1	₹1,38,083.00	₹1,38,083.00
12	Store Shed	LS	1	₹25,44,960.00	₹25,44,960.00
13	Transformer Oil Drainage System	LS	1	included in Sr. No.: S1 - 4 above	
14					
15	Residential complex	LS	1	₹2,55,000.00	₹2,55,000.00
16	TOTAL				₹6,04,51,140.60


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HIMACHAL PRADESH POWER TRANSMISSION CORPORATION LTD.

Revised CIVIL WORKS EXECUTION STATEMENT

Sr. No.	Description of Material	Unit	UNIT PRICE	Actual Execution Amount of Civil Work	
				Total Quantity Executed	Total Amount
	ORIGINAL SCOPE				
	CIVIL WORKS as per Specification				
1.0	Soil Investigation	LS	365605	1.000	3,65,605
4.0	Tower & equipment foundation, Transformer Foundation, Fire Wall, Cable Trenches including all types of crossings & all metallic works including Steel racks for Cables, Cable Supports, MS angle edging & RCC covers with lifting arrangements.				
a)	Tower(Qty as per Annex.)				
i	Excavation & Backfilling	cum	525	612.820	3,21,731
ii	RCC M20	cum	7147	137.059	9,79,561
iii	Reinforcement	kgs	64.011	11610.784	7,43,218
iv	PCC 1:4:8	cum	4043	-	-
	PCC 1:3:6 (As per Drawing)	cum	4604	21.074	97,025
b)	Equipment structures(Qty as per Annex)				
i	Excavation & Backfilling	cum	525	336.731	1,76,784
ii	RCC M20	cum	7147	104.849	7,49,356
iii	Reinforcement	kgs	64.011	5162.360	3,30,448
iv	PCC 1:4:8	cum	4043	-	-
	PCC 1:3:6 (As per Drawing)	cum	4604	14.349	66,063
c)	Transformer foundation including fire wall (Qty as per Annex)				
i	Excavation & Backfilling	cum	525	855.418	4,49,094
ii	RCC M20	cum	7147	318.283	22,74,769
iii	Reinforcement	kgs	64.011	25614.550	16,39,613
iv	Structural Steel	kgs	73.923	28360.250	20,96,475
v	PCC 1:4:8	cum	4043	-	-
	PCC 1:3:6 (As per Drawing)	cum	4604	63.102	2,90,522
vi	40 mm Metal Filling	cum	1728	31.090	53,724
d)	Cable Trenches including all type of crossings(Qty as per Annex.)				
i	Excavation & Backfilling	cum	525	323.740	1,69,964
ii	RCC M20	cum	7147	108.714	7,76,979
iii	Reinforcement	kgs	64.011	10649.546	8,81,688
iv	Structural Steel	kgs	73.923	7179.822	5,30,754
v	PCC 1:4:8	cum	4043	-	-
	PCC (1:3:6) As per drawing		4604	34.415	1,58,447
vi	Chequered Plate 6 mm Thk.	Sq.m	3990	64.570	2,57,634
vii	PCC 1:2:4	cum	5183	-	-
viii	300 Dia PVC Pipe	RMTR	650	34.000	22,100
5.0	Buried Cable trench for Auxillary Power Arrangement	RMTR	2540	286.600	7,27,954
6.0	Site Surfacing and Antiweed Treatment	Sq.m	259	2639.318	6,83,583
7.0	Cement Concrete roads including all types of crossings.				
a)	5.00 metres wide Road cum Rail Track*	RMTR	35532	70.200	24,94,346
b)	3.5 metres wide	RMTR	8890	99.800	8,87,222
8.0	Storm Water Drainage including culverts	RMTR	2487	494.500	12,29,822
9.0	Security Fencing along with Gates and Security room.	RMTR	5603	584.600	32,75,514
10.0	Control Room Building cum 220kV GIS Room along with Battery room, PLCC Room, SCADA Room, Offices and stores.				
	APPROVED BBU for Building Vide Letter Ref. NO. HPPTCL/33/220 kV Phojal/L&T/2013-3611-15 dated 10-09-2013				
a)(i)	220 kV GIS Building	Sq.m	29330	-	-

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HPPTCL		1	3	9	10
Sr. No.	Description of Material	Unit	UNIT PRICE	Actual Execution Amount of Civil Work	
				Total Quantity Executed	Total Amount
	upto plinth beam (25 %of rate contract)	Sq.m	7332	213.060	15,62,156
					-
	above plinth beam to ground floor slab (50 %of rate contract)	Sq.m	14666	213.060	31,24,738
					-
	finishing work (25 %of rate contract)	Sq.m	7332	213.060	15,62,156
					-
a)(ii)	Control Room Building along with Battery room, PLCC Room, SCADA Room, Offices and stores.				-
	APPROVED BBU for Building Vide Letter Ref. NO. HPPTCL/33/220 kV Phojal/L&T/2013-3611-15 dated 10-09-2013				-
(i)	Ground Floor		23464		-
	upto plinth beam (25 %of rate contract)	Sq.m	5866	240.890	14,13,061
					-
	above plinth beam to ground floor slab (50 %of rate contract)	Sq.m	11732	240.890	28,26,121
					-
	finishing work (25 %of rate contract)	Sq.m	5866	240.890	14,13,061
					-
(ii)	First Floor				-
	upto terrace slab (75 %of rate contract)	Sq.m	13199	234.690	30,97,673
					-
	finishing work (25 %of rate contract)	Sq.m	4399	234.690	10,32,401
					-
b)	33kV GIS Building.				-
	APPROVED BBU for Building Vide Letter Ref. NO. HPPTCL/33/220 kV Phojal/L&T/2013-3611-15 dated 10-09-2013				-
	upto plinth beam (25 %of rate contract)	Sq.m	9488	68.730	6,52,110
					-
	above plinth beam to ground floor slab (50 %of rate contract)	Sq.m	18976	68.730	13,04,220
					-
	finishing work (25 %of rate contract)	Sq.m	9488	68.730	6,52,110
					-
11.0	DG set outdoor Silent type.	LS	131234	1.000	1,31,234
					-
12.0	Store Shed	Sq.m	16125	150.400	24,25,200
					-
13.0	Transformer Oil Drainage system	LS	included Above		-
2.0	RCC ROAD				-
	5.00Mtr Wide Road	Rmtr	12700	46.100	5,85,470
					-
	2 Mtr Wide Road	Rmtr	5080	14.000	71,120
					-
	20 Cum Water Tank				-
	Excavation & Backfilling	Cum	525	63.248	33,205
	RCC M20	Cum	7147	20.938	1,49,644
	Reinforcement	Kg	64.011	1989.700	1,27,363
	PCC 1:3:6 (As per Drawing)	Cum	4604	1.576	7,254
					-
	Zone-V variation (HPPTCL/DGM & HEAD/PHOJAL/L&T/CIVIL/VOL-J/2016 427-31 Dated 02/05/2016 attached)				-
1	Difference in quantities of items involved in the design from Zone-IV to Zone-V				-
	Excavation	Cum	525	187.795	98,592
	PCC (1:4:8)	Cum	4043	5.178	20,934
	RCC M20	Cum	7147	41.912	2,99,545
	Reinforcement	MT	64011	20.959	13,41,575

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HPPTCL					
Sr. No.	Description of Material	Unit	UNIT PRICE	Actual Execution Amount of Civil Work	
				Total Quantity Executed	Total Amount
	Retaining wall for Approach Road				
1.0	Excavation & Back Filling	cum	525	800.400	4,20,210
2.0	PCC 1:3:6 (i/c form work)	cum	4604	264.100	12,15,916
3.0	RCC M20 (i/c form work)	cum	7147	759.892	54,30,948
4.0	Reinforcement	kg	64.011	42923.640	27,47,585
5.0	PCC 1:4:8	cum	4043	13.320	53,853
1.0	Cost for 12 mtr. Deep 200 mm Dia Bore hole with 175 casing using odex Method for treated earth pit for 40 mm GI Pipes and MS ROD	Nos	68348	19.000	12,98,612
	GRAND TOTAL				57628070
				(say)	5,76,28,100

14	Residential complex				
S.No.	Description	Nos.	Rate per Sqm (₹.)	Area (Sq. Mt.)	Amount
a	b	c	d	e	f=(cxdxe)
1	Residential Quarters				
	A. Type IV	1	14250	125	17,81,250
	B. Type III	2	14250	80	22,80,000
	C. Type II	2	14250	53.5	15,24,750
	D. Type I	4	14250	42.95	24,48,150
2	SCADA Control Room cum Inspection Hut	1	14250	164.93	23,50,240
	SUB TOTAL				1,03,84,390
7	Cost of Infrastructure @ 31%				
	Gardens, Plantation @ 2%, Water Supply @ 6%, Internal				32,19,161
8	Development of Terraces @ 40%				41,53,756
9	Storm water drainage @ 5%				5,19,219
10	Street lighting @ 5%				5,19,219
	TOTAL-RESIDENTIAL COLONY				1,87,95,746
	TERRAIN)				2,31,18,767
	Total Amount				2,55,00,000

Total Amount

8,31,28,100

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Sub - Annexure E2



HIMACHAL PRADESH POWER TRANSMISSION CORPORATION LTD.

Revised ELECTRICAL WORKS EXECUTION STATEMENT

Sr. No.	Description of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
A	POWER TRANSFORMER				
1	25 / 31.5 MVA, 220 / 33 kV Single Phase Transformer including Bushing, Accessories and First Filling of Oil	Nos.	120689.75	4	4,82,759
2	Oil Storage Tank	Nos.		0	-
3	Oil Sampling Bottle	Nos.		0	-
4	Micro Gas Analyzer / On-line DGA / PPM Meter	Nos.		0	-
5	250 kVA, 33 / 0.433 kV Three Phase Transformer including Bushing, Accessories and First Filling of Oil	Nos.	135040	1	1,35,040
B	245 KVGIS EQUIPMENT				
1	245 kV, 1600 A, 50 kA SF6 Gas Insulated TRANSFORMER BAY MODULE each comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two Bus Bar Disconnectors with Grounding Switch, Surge Arresters (198 kV), SF6 Gas Monitoring System for complete Bay, LCC, Three 1 - Phase SF6 Ducts and SF6 / Oil Bushing to connect to 33 / 220 kV, 26.66 / 33.33 MVA Transformer and Accessories with GIS etc to complete Transformer Bay Module	Nos.	517959	1	5,17,959
2	245 kV, 2000 A, 50 kA SF6 Gas Insulated FEEDER BAY MODULE each comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two Bus Bar Disconnector with Grounding Switch, Line Disconnector with Safety Grounding Switch, High, Speed Fault Making Grounding Switch, SF6 Gas Monitoring System for complete Bay, LCC, GIS Duct and Air / SF6 Bushing Termination Enclosure and Accessories with GIS etc to complete Feeder Bay Module.	Nos.	517959	2	10,35,918

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Sr. No.	Description of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
3	245kV, 4000 A, 50 kA, 3 Single Phase (isolated) Units SF ₆ Gas Insulated, Metal Enclosed BUS BARS each Unit, enclosed in Bus Enclosures running along the Length of the Switchgear to interconnect each of Circuit Breaker Bay Module Each Bus Bar Set shall be complete with Voltage Transformers complete with Safety Grounding Switch	Nos.	457323	2	9,14,646
4	245 kV, 4000 A, 50 kA SF ₆ Gas Insulated BUS COUPLER BAY MODULE comprising of SF ₆ Gas Insulated Circuit Breaker, Current Transformers, Two Disconnectors with Safety Grounding Switches SF ₆ Gas Monitoring System for complete Bay, LCC etc	Nos.	517959	1	5,17,959
5	245 kV-CVT with Junction Box	Nos.	3362	6	51,972
6	198 kV Lightning Arrester with Counter and Leakage Meter	Nos.	5197	6	31,182
C	36 kV, 2000 A, 40 kA for 3 sec., SF ₆ Gas Insulated, Metal Enclosed BUS BARS each Unit, enclosed in Bus Enclosures running along the Length of the Switchgear to interconnect each of Circuit Breaker Bay Module. Each Bus Bar Set shall be complete with Voltage Transformer complete with Safety Grounding Switch				
1	36 kV 1600A SF ₆ Gas Insulated FEEDER BAY MODULE each comprising of SF ₆ Gas Insulated Circuit Breaker, Current Transformers, Two Bus Bar Disconnectors with Grounding Switch, Line Disconnector with Safety Grounding Switch, High Speed Fault Making Grounding Switch, SF ₆ Gas Monitoring System for complete Bay, LCC, Enclosure and Accessories with GIS etc-to complete Feeder/Bay Module	Nos.	51974	6	3,11,844
2	36kV 2000 A SF ₆ Gas Insulated BUS COUPLER BAY comprising of SF ₆ Gas Insulated Circuit Breaker Current Transformers, Two numbers of Bus Bar Disconnectors with Earthing Switch, SF ₆ Gas Monitoring System for complete Bus Coupler Panel	Nos.	51974	1	51,974

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Sr. No.	Decription of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
3	36 KV, 1600 A SF6 Gas Insulated POWER TRANSFORMER PANEL each comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two numbers of Bus Bar Disconnectors with Earthing Switch, Surge Arrester (30 kV), SF6 Gas Monitoring System for complete Power Transformer Panel	Nos.	51974	1	51,974
4	36 KV, 630 A SF6 Gas Insulated 250 kVA, L. T. TRANSFORMER PANEL-each comprising of SF6 Gas Insulated Circuit Breaker, Current Transformers, Two numbers of Bus Bar Disconnectors with Earthing Switch, Surge arrestor(30 kV), SF6 Gas Monitoring System for complete LT Transformer Panel	Nos.	51974	1	51,974
D	SUBSTATION AUTOMATION SYSTEM Complete including Hardware and Software Complete Sub Station Automation System including Hardware and Software for the Sub Station and Remote Control Station alongwith Associated Equipments as per Technical Specification	Lot (9 Bays)	155921	1	1,55,921
	BAY CONTROL UNITS				
1	220kV Bays	Nos	Included Above		
2	33kV Bays	Nos			
E1	220 KV CONTROL AND RELAY PANEL				
1	Circuit Breaker Control Panel			0	-
a)	With Auto Reclose	Nos.	17324	2	34,648
b)	With out Auto Reclose	Nos.	17324	3	51,972
2	Line Protection Panel (Main I + Main II)	Nos.	17324	2	34,648
3	220 kV(Double Bus Bar Protection)	Set	17324	1	17,324
4	Transformer Protection Panel - H. V. Side including one number for Spare Single Phase Transformer	Nos	17324	2	34,648
E2	33 KV CONTROL AND RELAY PANEL				
1	Circuit Breaker Control Panel				
a)	With Auto Reclose	Nos.	17324	6	1,03,944

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Sr. No.	Description of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
b)	With out Auto Rectose	Nos.	17324	3	51,972
2	Line Protection Panel	Nos.	Included Above		
3	Transformer Protection Panel - L. V. Side including one number for Spare Single Phase Transformer	Nos.			
F	PLCC for 220 KV LINE FEEDER				
1	2000 A, 0.5 mH / 1.0 mH, 50 KA Line Traps	Nos.	13859	4	55,436
2	Coupling Device (Phase to Phase)	Nos.	10395	4	41,580
3	HF Cable	Ls	8662	2	17,324
4	Carrier Equipment (for Speech + Protection and for Speech + Data)	Nos	10395	6	62,370
5	Protection Coupler	Nos	10395	4	41,580
6	Print Testing Kit	Set	10395	1	10,395
	EPBAX (24 / 8) with Telephone Sets	Set	10395	1	10,395
F.1	FOTE Equipment	Set	4841813	0	-
G	AIR CONDITIONER AND VENTILATION SYSTEM				
1	Split AC (Capacity - 2T)	Nos	17324	10	1,73,240
2	Ventilation System for 220kV & 33kV GIS Hall	LS	2372488	1	23,72,488
H	LT SWITCHBOARD				
1	415V Main Switchboard	Nos	147259	1	1,47,259
2	415V A C Distribution Board	Nos	103947	1	1,03,947
3	220V DCDB	Nos	86623	2	1,73,246
4	48V, DC DB	Nos	86623	2	1,73,246
I.	BATTERIES			0	-
1	220V, 400 AH	Set	86623	2	1,73,246
2	48V, 400 AH	Set	51794	2	1,03,588
J	BATTERY CHARGER SYSTEM				
1	220V	Set	17324	2	34,648
2	48V	Set	17324	2	34,648
K	DG SET ALONGWITH CONTROL PANEL (100 kVA, 440 V for 220 kV Sub Station)	Set	86623	1	86,623
L	FIRE PREVENTION AND EXTINGUISHING SYSTEM				
1	Nitrogen Injection Fire Prevention & Extinguishing System for Transformer	Set	314718	4	12,58,872

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Sr. No.	Description of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
2	Fire Protection for GIS cum Control Room Building, etc. (Portable type the Extinguishers System)	Lot	512322	1	5,12,322
M	ILLUMINATION SYSTEM				
1	MLDB	Nos	38870	1	38,870
2	ELDB	Nos	28504	1	28,504
3	GIS cum Control Room Building Illumination with CFL/Metal Halide Lamps				
a	2x36 Watts Fluorescent Lamp In Industrial Reflector type Fixtures suitable for surface/ pendant CGL Cat Ref. IBA1424EB	Nos	1840	0	-
b	230 V, 5/15 A, Indoor Receptacle 3 Pin type-R1	Nos	648	22	14,256
c	15 A, 1-Ph, 3 Pin Industrial Type Switch Socket Outlet	Nos	778	0	-
d	32 A, SPN MCB in 2 mm Thick sheet Steel Enclosure with 3 Pin Socket for A.C (Indoor)	Nos	1555	10	15,550
e	32 A, SPN MCB in 2 mm Thick sheet Steel Enclosure with 3 Pin Socket for A.C (outdoor)	Nos	2073	0	-
f	450 mm Exhaust Fan	Nos	1684	7	11,788
g	450 mm Acid Proof Exhaust Fan (for Battery Room)	Nos	4146	2	8,292
h	1400 mm Ceiling Fans with Electronic Regulator	Nos	1684	5	8,420
i	Point Wiring	Nos	1425	161	2,29,425
j	Indoor Lighting Panel (ACP-1 type) as per Technical Specification	Nos	41461	4	1,65,844
k	DC Lighting Panel (DCP Type) as per Technical Specification	Nos	41461	1	41,461
4	220/33 kV GIS Building Illumination				
a	1x250 W- Industrial Metal Halide Luminaire CGL Cat ref. No. FAD 1314	Nos	2073	0	-
b	1x60 W GLS Bulk Head Light Fixture of CGL tube 1BH 1110 BC or equivalent	Nos	648	0	-
c	230 V, 5/15 A, Indoor Receptacle 3 Pin type-R1	Nos	648	0	-
d	32 A, SPN MCB in 2 mm Thick sheet Steel Enclosure with 3 Pin Socket for A.C (Indoor)	Nos	1555	2	3,110

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Sr. No.	Description of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
e	32 A, SPN MCB in 2 mm Thick sheet Steel Enclosure with 3 Pin Socket (Indoor)	Nos	2073	0	-
f	1x 11 W Portable Battery operated (3 hrs. Backup) CFL Emergency Lamp(M/S BPL make)	Nos	2202	4	8,808
g	Point Wiring	Nos	1425	44	62,700
h	Indoor Lighting Panel (ACP-1 type) as per Technical Specification	Nos	41461	6	2,48,766
i	DC Lighting Panel (DCP Type) as per Technical Specification	Nos	41461	2	82,922
j	32 A, TPN MCB in 2 mm thick Steel Enclosure with 3 Pin Socket (Indoor)	Nos	1684	2	3,368
5	Switchyard Lighting				
a	Flood light Luminaire with 2x 100 W HPSV/T+Lamp-Bajaj cat. BJEF22 CA - R0	Nos	5183	0	-
b	Lighting JB with 5 nos. of Terminal Blocks	Nos	914	8	7,312
c	250 A oil Filtration Socket	Nos	6459	1	6,459
6	Street Lighting (Solar lighting system)				
a	120W Solar lighting system for Street lighting with 9m height pole, Inbuilt in long life maintenance free batteries (capacity is 12V, 120Ah)	Nos	11660	8	93,280
7	Transformer Area Lighting as per specification				
a	1x70W HPSV 240V AC industrial well glass fixture for pendant mounting with control gear box (BJDWI-70SV).	Nos	2073	0	-
b	Lighting JB	Nos	914	3	2,742
N	Power Cables and Copper Conductor Armoured Control Cables alongwith:Lugs, Glands and Straight Joints				
	XLPE POWER CABLE				
	1c X 630sq.mm	km	611931	0	-
	Terminations for the above				
	1c X 630sq.mm	Nos	1469	48	70,512
	3.5c X 300sq.mm	Nos	2040	10	20,400

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Sr. No.	Description of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
	PVC POWER CABLE (Other than those available in the Contract)				
	4c X 6sq.mm	km	110147	0	-
	2c X 6sq.mm	km	74246	1.949	1,44,705
	1c X 150sq.mm	km	204787	0.177	36,247
	Terminations for the above				
	3.5c X 90sq.mm	nos	1526	0	-
	3.5c X 70sq.mm	nos	1069	4	4,276
	3.5c X 35sq.mm	nos	709	22	15,598
	4c X 16sq.mm	nos	384	16	6,144
	4c X 6sq.mm	nos	310	0	-
	2c X 6sq.mm	nos	318	140	44,520
	1c X 150sq.mm	nos	587	32	18,784
	HR-FR-I.S CONTROL CABLE				
	5c X 2.5sq.mm	km	89749	1.027	92,172
	27c X 2.5sq.mm	km	244771	1.03	2,52,114
	4P,0.75	km	89749	0.8	71,799
	Terminations for the above				
	2c X 2.5sq.mm	Nos	310	34	10,540
	4c X 2.5sq.mm	Nos	384	0	-
	5c X 2.5sq.mm	Nos	481	46	22,126
	7c X 2.5sq.mm	Nos	548	50	27,400
	10c X 2.5sq.mm	Nos	587	62	36,394
	12c X 2.5sq.mm	Nos	645	90	58,050
	14c X 2.5sq.mm	Nos	791	0	-
	16c X 2.5sq.mm	Nos	881	60	52,860
	19c X 2.5sq.mm	Nos	1118	4	4,472
	27c X 2.5sq.mm	Nos	1399	28	39,172
	4P,0.75	Nos	402	40	16,080
	2c X 4sq.mm	Nos	603	96	57,888
	4c X 4sq.mm	Nos	481	174	83,694
	7c X 4sq.mm	Nos	880	8	7,040

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Sr. No.	Description of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
0	33KV XLPE POWER CABLE AND ACCESSORIES				
1	XLPE POWER CABLE				
	3.5c x 300 Sq. mm	km	103236	0.185	19,099
2	PVC POWER CABLE				
	3.5 c x 90 Sq. mm	km	79849	0	-
	3.5 c x 70 Sq. mm	km	79849	0	-
	3.5 c x 35 Sq. mm	km	56459	0.125	9,981
	4 c x 16 Sq. mm	km	56459	0.602	33,988
	4 c x 4 Sq. mm	km	33072	0.425	23,995
3	HR FRLS CONTROL CABLE				
	2c x 2.5 Sq. mm	km	31512	1.075	33,875
	4 c x 2.5 sq. mm	km	31512	0	-
	7 c x 2.5 sq. mm	km	35151	1.539	14,097
	10c x 2.5sq. mm	km	40608	2.47	1,00,302
	12c x 2.5sq. mm	km	40608	3	1,21,824
	16c x 2.5sq. mm	km	47971	2.03	97,381
	19c x 2.5sq. mm	km	49703	0.1	4,970
	2c x 4sq. mm	km	34632	2.645	91,602
	4c x 4 sq. mm	km	40867	4.575	1,86,967
	7c x 4sq. mm	km	60617	0.3	18,185
4	36 KV XLPE CABLE				
a)	33 KV XLPE Cable for connecting Transformer to 33 KV GIS of size 1 x 630 sq. mm. (Three Cables with one Spare Cable in each Circuit)	km	180130	3.35	6,03,436
b)	33KV Indoor Termination Suitable for above Cable	Nos	3514	0	-
c)	33KV Outdoor Termination Suitable for above Cable	Nos	3514	0	-
P	GROUNDING / EARTHING SYSTEM				
a)	40 mm MS Rod for Earthing(*)				
	40mm MS rod for earthing	km	359511	5.19	18,65,862
	75x12 G.S Flat	km	298577	0.8	2,38,862
	50x6 G.S Flat	km	262017	0.151	39,565
	50x6 M.S Flat	km	262017	0.27	70,745
	Cleat type clamp to suit 75 x 12 G.S Flat	Nos	158	200	31,600

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Sr. No.	Description of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
	3 Mtr long, 40mm dia M.S pipe earth electrode with test link and without pit	Nos	2084		
	3m long, 40 mm dia Earth rod electrode with untreated pit	Nos	1475	29	42,775
	3m long, 20 mm dia earth rod electrode without pit	Nos	829	6	4,974
	3m long, 40 mm dia GI Pipe earth electrode	Nos	931	10	9,310
	Lightning Protection			0	-
	7/3.66 mm GS earth wire	km	21351	0.22	4,697
	Cleat clamp on structure to suit 7/3.66 mm GS earth wire	Nos	165	100	16,500
	Pad clamp on structure to suit 7/3.66 mm earth wire and 75 x 12 GS flat	Nos	797	13	10,361
	25x3 GI Flat	km	27420	0.355	9,734
	1.5m long GI spike	Nos	402	3	1,206
	2.5m long GI spike			0	-
	Test links	Nos	165	6	990
Q	STEEL STRUCTURES FOR TOWERS, BEAMS AND EQUIPMENT				
	Tower and Beams				
	220 kV Tower				
	CA Type	kg	11.58	10676.73	1,23,637
	BG1 (WITH DEV)-16m	kg	11.58	3770.35	43,661
	Lighting-cum-lightning Mast	kg	11.58	5483.6	63,500
	33 kV Tower			0	-
	Tower-3T	kg	11.58	7868.734	91,120
	Girder-3G	kg	11.58	5035.494	58,311
	Girder-3G-2			0	-
	Equipments				
	Standard structures for 220 KV equipments				
	CVT	kg	12.79	979.5	12,528
	WT	kg	12.79	0	-
	SA	kg	12.79	892.1	11,410
	BPI	kg	12.79	0	-
R	EOT CRANE			0	-

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Sr. No.	Description of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
a.	3.5T for 220kV GIS ROOM	Set	206215	1	2,06,215
b.	2.5T for 33kV GIS ROOM	Set	154621	0	-
c.	Moveable Ladder of suitable Capacity for 220 kV & 33kV GIS Room	Nos	48418	2	96,836
S	Insulator Strings / Disc Insulators, Hardware, Conductor, Bus Bar Material, Cable Trays, Clamps, Connectors, including Equipment Connectors, Pipes for Equipment & Lighting, all Accessories etc				
	220kV CLAMPS & CONNECTORS				
	Terminal connector on 26.66/33.33 MVA Transformer SF6 to Oil bushing to suit GIS Bus Duct	Nos	3047	0	-
	Terminal connector on 198kV LA to suit 1 or 2 x MOOSE / ZEBRA ACSR	Nos	2011	0	-
	Terminal connector on 245kV CVT to suit 1 or 2 x MOOSE / ZEBRA ACSR	Nos	1536	0	-
	Terminal connector on Wave Trap to suit 1 or 2 x MOOSE / ZEBRA ACSR	Nos	1359	0	-
	Terminal connector on 220kV BPI to suit 1 or 2 x MOOSE / ZEBRA ACSR	Nos	1737	0	-
	Tee connectors to suit 1 or 2 x MOOSE / ZEBRA ACSR on both ways	Nos	1846	0	-
	Suspension Hardware Assembly along with Insulators (220/33 kV side)	Lot	25341	2	50,682
	33kV CLAMPS & CONNECTORS				
	Terminal connector on 30kV Lightning Arrestor, to suit 1 or 2XMOOSE / WOLF ACSR Conductor	Nos	1079	0	-
	Terminal connector on 26.66/33.33 MVA transformer LV bushing to suit 1X MOOSE ACSR Conductor	Nos	1261	0	-
	Terminal connector on Cable Sealing End, to suit 2XMOOSE ACSR Conductor	Nos	905	0	-
	Terminal Connectors to suit 1CX630sq.mm XLPE Cable sealing end	Nos	1536	0	-
	BUS BAR MATERIALS				

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				Total qty Executed	Amount
	Moose / ZEBRA / WOLF ACSR conductor	km	176709	0.22	38,876
	Cable Trays:			0	-
	600mm Wide perforated Tray	km	103588	0.1405	14,554
	300mm Wide perforated Tray	km	73121	0.025	1,828
	150mm Wide perforated Tray	km	42654	0.015	640
	Structural Steel for above	MT	85308	2.5	2,13,270
	PVC Pipes:				
	50mm dia	km	67027	0.16	10,724
	75 mm Dia			0	-
	100 mm Dia			0	-
	Sump pumps			0	-
	5HP	Nos	67027	1	67,027
	0.5HP	Nos	11577	6	69,462
	220kV Bus Post Insulators	Nos	36562	0	-
	Sub-Total - LOA Items (A)				
NEW					
A-1	220KV Single Phase Breaker Bay Module for Spare Transformer	Set	222500	1	2,22,500
A-2	For Additional Bays- 245 kV, 4000A, 50 kA, 3 Single Phase (Isolated) Units SF ₆ Gas Insulated, Metal Enclosed BUS BARS each unit, enclosed in Bus Enclosures running along the length of the Switchgear to Interconnect each of the Circuit Breaker Bay Module complete with Voltage Transformer and Safety Ground Switch etc.	Set	137197	1	1,37,197
A-3	1- Phase SF ₆ Duct to connect to 220 / 33 kV, 26.66 / 33.33 MVA Transformer / Lines With GIS etc (only the additional quantity over and above 85.5 to be paid).	Mtr	15500	92.5	14,33,750
B-1	33KV Single Phase Breaker Bay Module for Spare Transformer	Set	22500	0	-
C	36 kW OUTDOOR EQUIPMENT				

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Sr. No.	Description of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
C-1	30 kV, Single phase, Surge Arrestors with Surge Counter, Leakage Meter and Junction Box	Nos	2650	18	47,700
C-2	36 kV, Line Isolator Switch with Earth Switch	Set	16500	6	99,000
D	SUBSTATION AUTOMATION SYSTEM Complete including Hardware and Software for 7 Bays and Remote Control Station alongwith Associated Equipments	Lot (2+5 bays)	121272	1	1,21,272
E	For Additional Feeder - 220 kV C&R Panel For Bus Bar Protection Panel		5717	1	5,717
F	36 kV XLPE CABLE				
i	33 kV XLPE Cable For connecting Transformer to 33 kV GIS of size 1x1000 sq.mm Aluminium conductor	Mtr	450	0	-
ii	33 kV Indoor Termination Suitable for Alone Cable suitable at GIS conforming to IEC: 60859	Nos.	24000	0	-
iii	33 kV Outdoor Termination Suitable for above cable	Nos.	11500	0	-
	Sub-Total - New Items (B)				
	TOTAL (A+B)				

Erection Substituted Items (HPPPTCL/33/220 KV Phojal/L&T/Vol-XIV/2015-2840-47 Dated 13/08/2015 Amenddment No. 2 (Ann-1 attached))

Sr. No.	Description of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
(A)	M. Illumination System (Lighting Fixtures)				
1	2X28W, T5 type industrial trough type fluorescent fixture with electronic ballast (Bajaj BTIV 228) with Lamp	Nos.	1840	72	1,32,480
2	2X28W, T5 type fluorescent fixture corrosion proof fitted with electronic ballast (Bajaj BTIV 228) with Lamp	Nos.	1840	9	16,560
3	2X28W, T5 mirror optics type fixture (Bajaj BTIV 128) with Lamp	Nos.	1840	34	62,560
4	1X28W, T5 type industrial trough type fluorescent fixture with electronic ballast (Bajaj BTIV 128) with Lamp	Nos.	2073	5	10,365
5	Flood light fixture with 2X400W HPSV-T Lamp & control gear (Bajaj BJENF 24) with Lamp	Nos.	5183	6	31,098

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Bhuntar Distt. Kullu (H.P.)-175125

Er. Sanjay Kaushal
Sr. Manager (Project)
HPPPTCL Division Sarabai
Bhuntar Distt. Kullu (H.P.)-175125

Sr. No.	Description of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
	SubTotal C				
D	Total (A+B+C)				
E	Neutral Formation Power Clamps & Connectors				
a	220 kV Inter Connector to suit 4" IPS AL Tube on Main way, 2xMoose ACSR on Branch Way	Nos	825	2	1,650
b	Terminal Connector on 33kV Neutral Bushing of Transformer to suit 4" IPS AL Tube (Rigid type)	Nos	825	3	2,475
c	Terminal Connector on 33kV BPL to Suit 4" IPS AL Tube (Rigid/Slide Type)	Nos	825	5	4,125
d	Terminal Connector on 4" IPS AL Tube to Suit 2 No. 33kV Cable Terminations	Nos	825	5	4,125
e	Terminal Connector on 4" IPS AL Tube to Suit 1 No. 33kV Cable Termination	Nos	825	2	1,650
f	Terminal Connector on 33kV Horizontal Mounted BPL to suit 75x12mm GS Flat.	Nos	825	4	3,300
g	Pad type Compression clamp to suit Twin 'Moose' ACSR & 75 X 12mm GS flat	Nos	825	2	1,650
h	Pad type Compression clamp to suit Twin 'Moose' ACSR & 4" IPS AL tube	Nos		0	-
i	Corona bell to Suit 4" IPS AL Tube	Nos	500	7	3,500
j	Rigid Spacer to suit 2x'Moose' Conductor with 250mm sub conductor spacing	Nos		0	-
k	Tee Connector to suit 2 x 'Moose' ACSR conductor in all ways.	Nos	825	2	1,650
l	33kV Outdoor Cable Termination Kit to suit 1Cx1000sqmm Cu XLPE Cable	Nos	5500	12	66,000
m	33kV Indoor Cable Termination Kit to suit 1Cx1000sqmm Cu XLPE Cable	Nos	5000	8	40,000
n	33 kV XLPE, Cu Cable 1Cx1000 Sq mm	MTR	125	210	26,250
o	33kV Single Tension hardware for twin Moose ACSR	Nos		0	-
r	150 NB Pole Structure	Nos	15792	5	78,960
p	5500 mm Long 4" IPS Tube	Nos	2750	3	8,250
q	2000 mm Long 4" IPS Tube	Nos	2750	2	5,500

Er. Sanjay Kumar, J.P.O.

H.P.P.T.C. Ltd. Sarabai,

Bhunar, Kullu -H.P

Dy. Manager (Projects)

HPPTCL Division Sarabai

Er. Sanjay Kishor

Sr. Manager (Project)

HPPTCL Division Sarabai

Bhunar Distt. Kullu (H.P.)-175125

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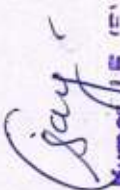
Sr. No.	Description of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
6	Flood light fixture with 1X400W HPSV-T Lamp & control gear (Bajaj BJE NF 14) with Lamp	Nos.	3628	3	10,884
7	1X70W HPSV 240AC industrial type fixture suitable for wall mounting with control gear (Bajaj BGEMF 17) with Lamp	Nos.	2073	12	24,876
8	1X250W Industrial type metal halide luminaries (Bajaj BJHBBIS 250 MH) with Lamp	Nos.	2073	6	12,438
9	10/20W CFL Fitting suitable for 220V DC source	Nos.	1451	18	26,118
	SubTotal A				
B	S) Clamps Connectors- 220 kV				
1	Expansion type terminal connectors to suit 3" IPS aluminium tube on transformer bushing (HA)	Nos	3047	4	12,188
2	Terminal Connector to suit single Zebra ACSR on CVT (HA)	Nos	1536	6	9,216
3	Terminal Connector to suit single Zebra ACSR on SF6 air bushing (HAVA)	Nos	1359	6	8,154
4	Tee connector to suit single Zebra ACSR to single Zebra ACSR	Nos	1846	12	22,152
5	PG Clamp to suit single Zebra ACSR to single Zebra ACSR	Nos	1359	4	5,436
6	Rigid type terminal connector to suit 3" IPS aluminium tube on SF6 air bushing (HA)	Nos	1359	4	5,436
	SubTotal B				
C	S) Clamps & Connectors-33KV				
1	Terminal connector to suit twin Panther ACSR on isolator (HA)	Nos	1079	12	12,948
2	Terminal connector to suit single Wolf ACSR on isolator (HA)	Nos	1079	24	25,896
3	Tee connector to suit twin Panther ACSR to twin Panther ACSR	Nos	905	6	5,430
4	Tee connector to suit twin Panther ACSR to single Panther ACSR	Nos	905	6	5,430
5	Tee connector to suit Wolf ACSR to Wolf ACSR	Nos	905	24	21,720
6	Terminal connector to suit single Panther ACSR on cable termination kit	Nos	905	12	10,860
7	Terminal connector to suit single Wolf ACSR on cable termination kit	Nos	1536	12	18,432

For Sanjay Kumar, J.P. (S)
H.P.T.C. Ltd Sarabai,
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Sr. No.	Description of Material	Unit	Unit Price	Actual Execution Amount	
				Total qty Executed	Amount
S	33 kV BPI	Nos	500	9	4,500
t	ACSR Moose Conductor	Mtr	50	10	500
F	SF6/Air Bushing	Nos	61500	4	2,46,000
1	Erection and Commissioning of Fire detection and alarm System (Ann-2 attached)	Lot	191000	1	1,91,000
Total					2,06,71,657
Total Amount of Electrical Erection Work (Column no. 5 + Column no. 7 of this sheet)					2,06,71,657
ANNUAL MAINTENANCE CHARGES OF SUBSTATION FOR THE FIRST YEAR					1,19,74,232
GRAND TOTAL					3,26,45,889
					3,26,45,900


Er. Sanjay Kumar J.F.
H.P.T.C. Ltd. Sarabai
Bhunter Distt. Kullu - H.P.


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HIMACHAL PRADESH POWER TRANSMISSION CORPORATION LTD.

Price Variation on Civil works

Civil Erection Invoice Details				PV Billing Abstract	
Sl. No.	Erection Bill/Invoice no.	Date of Erection Bill	Claimed Civil Erection Bill Amount	Erection Bill Value considered for PVC	PV invoice Amount
1	LTCO/PHOJAL/SS/ERE-CVL/01	12-Sep-13	6561117	6561117	907353
2	LTCO/PHOJAL/SS/ERE-CVL/02	25-Oct-13	4038702	4038702	524613
3	LTCO/PHOJAL/SS/ERE-CVL/03	24-Dec-13	3742593	3742593	465964
4	LTCO/PHOJAL/SS/ERE-CVL/04	24-Mar-14	7799982	4783572	575288
5	LTCO/PHOJAL/SS/ERE-CVL/05	02-May-14	10294252	5215773	700401
6	LTCO/PHOJAL/SS/ERE-CVL/06	4-Jul-14	4645632	2872007	382051
7	LTCO/PHOJAL/SS/ERE-CVL/07	29-Oct-14	6395974	6395972	841963
8	LTCO/PHOJAL/SS/ERE-CVL/08	24-Jan-15	4121728	4121725	528735
9	LTCO/PHOJAL/SS/ERE-CVL/09	20-Jun-15	3604086	3604087	560824
10	LTCO/PHOJAL/SS/ERE-CVL/10	31-Aug-15	4663364	4663364	716810
11	LTCO/PHOJAL/SS/ERE-CVL/11	20-Jun-15	1760646	1760646	132379
TOTAL			57628076	47759558	6336381

63.36380718

Sanjay
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