

HIMACHAL PRADESH STATE ELECTRICITY BOARD LIMITED

(A State Government Undertaking)



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Notice Inviting Tender

International Competitive Bidding (e-mode)

No. IPDS(IT Phase-II)-07/2018/HPSEBL- 1872

Dated 26/07/2018

Request for Proposal (RFP) is invited in Single Stage - Two Parts (Part-I Technical Proposal and Part-II Price Proposal) from individual firms / company or Consortium for "Appointment of IT Implementation Agency (ITIA) for Implementation of Phase II of IT Enablement and ERP projects by Himachal Pradesh State Electricity Board Limited (HPSEBL) in 40 Towns of Himachal Pradesh on full turnkey basis under Integrated Power Development Scheme (IPDS) of Govt. of India on single point responsibility - Supply, installation, integration, testing, commissioning of System Integration Project covering software, hardware, field survey and networking under IPDS towns." The terms and references of the tender are given below:-

Tender (RFP) Identification No.	Estimated Cost Value (Rs. In Crore)	Earnest Money Deposit (EMD) /Bid Security	Start Date for Sale of Bid-Document	Last Date of Sale of Bid-Document	Last Date & Time for submission of Bid	Due Date of Opening of Technical Proposal (Part-I)	Due Date of Opening of Price Bid of Technically qualified Bidders (Part-II)
IPDS(IT Phase-II)-07/2018/HPSEBL	28.00 Crore (inclusive of taxes)	Rs. 28.00 Lacs (Rs. Twenty Eight Lacs Only) as per Bid Document	30 th July' 2018	6 th August 2018	10 th September' 2018 at 1300 Hrs	10 th September' 2018 at 1500 Hrs	Shall be informed later on

Notes:

1. Pre-Bid Conference will be held in the Committee Room, HPSEBL, Vidyut Bhawan, Shimla-4 on dated 21st August' 2018.
2. Submit requisite EMD. Scanned copy of same be uploaded at www.tenderwizard.com/HPSEB.
3. The tender (Bid) documents are available online (auto send) after receipt of prescribed non-refundable payments as under:-

Description of payment	Through Online payment mode
Annual Registration Charges	In favor of M/s ITI Ltd Delhi for Rs. 1000 /- (Taxes extra as applicable)
Tender Processing Fee	In favor of M/s ITI Ltd Delhi - Max Rs. 5000 /- (Taxes extra as applicable)
Cost of Tender Documents	In favor of HPSEBL for Rs. 11,800 /- (Including GST @ 18 %)

**Get registered at www.tenderwizard.com/HPSEB to obtain tender documents. For "e-tendering steps / manuals" please visit home page www.tenderwizard.com/HPSEB (Tender Wizard helpdesk Nos. 8261922200, 8261033300, 9418137002 and 9625033300). Copy of Notice Inviting Tender (NIT) is also available on www.hpseb.com. All information regarding this tender shall only be available on www.hpseb.com or www.tenderwizard.com/HPSEB in future.

(Er. S. K. Joshi),

Chief Engineer (Commercial), HPSEB Ltd.,

Vidyut Bhawan, Shimla-4. (Phone/Fax:- 0177-2656485)

Energy Saved is Energy Generated

Section IV. Eligibility Criteria

Overall responsibility shall be of System Integrator and they may bring partners for the roles of Network Solution Provider (NSP), GIS Solution Provider (GSP) and Meter Data Acquisition Solution Provider (MDSP), in case SI does not meet requirements for such roles.

Pre-Qualifying requirements for selection of IT implementation agency are mentioned hereunder:

Qualifying Requirements

A) QR for System Integrator

The Lead member (referred as SI-Lead) and the 2nd consortium member (in case of a consortium; referred as SI-2nd) should meet the QR as mentioned below:

- i. The SI must have implemented and completed at least three system integration projects, costing not less than 24 Crore per project (Twenty Four Crore), covering IT applications, Servers and PCs, WAN with connectivity between at least 10 locations, during the last three financial years. In case of a consortium, the consortium as a whole (SI-Lead and SI-2nd combined) should meet this requirement, with SI-Lead meeting minimum 80% out of this.

(Proof: Necessary Purchase order/LOA/Contract/Certification on client letterhead/Performance certificate as proof of services provided for the last 8 financial years needs to be submitted)

- ii. The Annual Turnover for each of the last three financial years of the bidder should not be less than Rs.100.00 (One Hundred) Crore. In case of a consortium, the consortium as a whole (SI-Lead and SI-2nd combined) should meet this requirement of turnover, with SI-Lead meeting minimum 90% out of this.

(Proof: Annual Audited Financial Statements)

- iii. Net Worth for the each of the last three Financial Years should be positive. In case of a Consortium, both the SI-Lead and SI-2nd should have positive net worth in each of the Last three audited financial years.

'Net-worth' will consist of 'paid up equity capital, free reserves, balance in share premium account and capital reserves representing surplus arising out of sale proceeds of assets but not reserves created by revaluation of assets' adjusted for 'accumulated loss balance, book value of intangible assets and Deferred Revenue Expenditure, if any'.

(Proof: Annual Audited Financial Statements)

- iv. The SI should be in existence in India for at least 10 years with fair track record and should have been in the IT / Software services for the last 5 years. In case of a Consortium, this requirement needs to be met by the SI-Lead.

(Proof for which to be submitted in the form of Incorporation Certificate along with Memorandum & Articles of Association)

- v. The SI should have implemented a turnkey System Integration project in the last eight financial years involving at least 5 of the following modules: GIS, Web Self Service, Billing, Metering, Energy Auditing/Accounting, Hardware, SAP in any Utility (Power/Gas/Water/Telecom sectors) or infrastructure sector (rail/road/port/airport). The total consumer base covered by the SI for such project in the any Utility should not be less than 1,50,000. This requirement is not applicable for infrastructure sector (rail/road/port/airport) projects as these cater to mass consumers. In case of a consortium, the requirement of at least 5 modules is distributed as: SI-Lead needs to meet the above requirement for at least 4 modules, and the SI-2nd for at least 1 module.

(Proof: Necessary Purchase order/LOA/Contract/Certification on client letterhead/Performance certificate as proof of services provided for the last 8 financial years needs to be submitted)

- vi. The SI should be ISO 9001:2008/latest or have at least CMM/CMMI level 3 / latest Certification. In case of a consortium, this requirement needs to be met by the SI-Lead.

(Proof: Copy of certification from authorized certification body)

- vii. The SI should have at least 30 personnel on its rolls with a minimum experience of 5 years (either in his/her own or other organization). The roles & responsibilities of the personnel should include system integration of IT applications or software or hardware or network. In case of a consortium, the requirement of at least 30 personnel is distributed as follows: SI-Lead needs to meet the above requirement for atleast 23 CVs, and the SI-2nd for atleast 7 CVs

(Proof: Signed resume of employees need to be submitted. Scanned signatures shall be accepted.)

B) QR for Partner-1 (Network Solution Provider)

- i. The Network Solution Provider should have implemented at least 5 multi-location WAN projects (installation, integration, maintenance & management) during the last eight financial years out of which at least two projects should have involved Leased Lines or ISDN or VSAT or RF or DSL or VPN /MPLS or Fibre Optics or a combination of these technologies for a customer having a minimum of 10 WAN locations.

(Proof: Necessary Purchase order/LOA/Contract/Certification on client letterhead/Performance certificate as proof of services provided for the last 8 financial years needs to be submitted)

- ii. The Network Solution Provider should have been in the Network installation/maintenance services for the last 8 years.

(Proof for which to be submitted in the form of Incorporation Certificate along with Memorandum & Articles of Association)

- iii. Network Solution Provider should be an ISO 9001: 2008 or latest certified company.

(Proof: Copy of certification from authorized certification body)

C) QR for Partner-II (GIS Solution Provider)

- i. The GIS Solution Provider should have successfully executed at least two GIS projects (software development & customization, mapping & indexing and digitization) in utility (Power/Gas/Water/Telecom sectors) or infrastructure sector (rail/road/port/airport) during the last three financial years.

(Proof: Necessary Purchase order/LOA/Contract/Certification on client letterhead/Performance certificate as proof of services provided for the last 8 financial years needs to be submitted)

Additional Note: In case a company has implemented GIS systems in the last 8 years, and has been maintaining the same system since commissioning till date, such maintenance contracts for the last three years, shall be acceptable as proof.

- ii. The GIS Solution Provider should have cumulative turnover of at-least Rs. 10 Crore for the last three audited financial years.

(Proof: Annual Audited Financial Statements for the last 3 financial years needs to be submitted)

- iii. The GIS Solution Provider should have been in the GIS Software development & customization or mapping or digitization services for the last 3 years.

(Proof for which to be submitted in the form of Incorporation Certificate along with Memorandum & Articles of Association)

- iv. GIS Solution Provider should be an ISO 9001:2008 or latest certified company.

(Proof: Copy of certification from authorized certification body)

- v. The GIS Solution Provider should have at least 10 personnel on its rolls with a minimum experience of 5 years (either in his/her own or other organization). The roles & responsibilities of the personnel should include GIS software development & customization or mapping or digitization.

(Proof: Signed resume of employees need to be submitted. Scanned signatures shall be accepted)

D) QR for Partner-III (Meter Data Acquisition Solution Provider)

- i. The Meter Data Acquisition Solution Provider must have successfully implemented at-least two AMR project or Meter data logging system in the last 3 financial years.

(Proof: Necessary Purchase order/LOA/Contract/Certification on client letterhead/Performance certificate as proof of services provided for the last 3 financial years needs to be submitted)

In case a company has implemented MDA systems in the last 8 years, and has been maintaining the same system since commissioning till date, such maintenance contracts for the last three years, shall be acceptable as proof.

- ii. The Meter Data Acquisition Solution Provider should have been in the business of Meter Data Acquisition (development and customization of software, and/or commissioning AMR/Meter Data logging system) for the last 3 financial years.

(Proof for which to be submitted in the form of Incorporation Certificate along with Memorandum & Articles of Association)

- iii. Meter Data Acquisition Solution Provider should be an ISO 9001:2008 or latest certified company.

(Proof: Copy of certification from authorized certification body)

Scope of Work

1. Background

- i. HPSEBL implemented R-APDRP Part-A (IT) of the program in the identified 14 town's areas presently covering approx. 3.90 Lacs consumers out of total 23.33 lacs consumer base of HPSEBL. System was implemented by M/s HCL Infotech Ltd., G-8, 9 & 10, Sector-III, Noida (U.P.)-201301 as IT Implementation Agency along with its MDAS & NBSP partners. System created under the program was also got successfully validated by TPIEA-IT & accepted by Nodal agency & is being used to achieve the desired objective envisaged by Ministry of Power, Govt. of India. State of Art technology has been deployed in the Data Center and Disaster Recovery Center, for serving the enterprise needs of the utility. The design document is enclosed as Appendix N – DC DR Design Document. Currently the system is under FMS phase by ITIA & shall remain up to 31st October-2021.
- ii. The implementation status of various R-APDRP application modules and Legacy modules which stands deployed in HPSEBL are as under:-

S. NO.	NAME OF RAPDRP MODULE	CURRENT COVERAGE
1	METER DATA ACQUISITION	ONLY R-APDRP PART-A PROJECT AREAS
2	ENERGY AUDIT	ONLY R-APDRP PART-A PROJECT AREAS
3	IDENTITY & ACCESS MANAGEMENT SYSTEM	ONLY R-APDRP PART-A PROJECT AREAS
4	DOCUMENT MANAGEMENT SYSTEM	ONLY R-APDRP PART-A PROJECT AREAS
5	MANAGEMENT INFORMATION SYSTEM CONTAINING DATA WAREHOUSING AND BUSINESS INTELLIGENCE FUNCTIONS	ACROSS THE UTILITY
6	Enterprise Management System (EMS) & Network Management System (NMS), which is a part of hardware, is proposed at data centre level	ONLY R-APDRP PART-A PROJECT AREAS
S. NO.	NAME OF LEGACY MODULE	CURRENT COVERAGE
7	NEW CONNECTION	ACROSS 191 NUMBER SUB-DIVISIONS
8	DISCONNECTION & DISMANTLING	ACROSS 191 NUMBER SUB-DIVISIONS

9	GIS BASED CONSUMER INDEXING & ASSET MAPPING	ACROSS THE UTILITY
10	GIS BASED INTEGRATED NETWORK ANALYSIS MODULE	ACROSS 132 NUMBER SUB-DIVISIONS
11	CENTRALIZED CUSTOMER CARE SERVICES	ACROSS THE UTILITY
12	WEB SELF SERVICES	ACROSS 191 NUMBER SUB-DIVISIONS
13	DEVELOPMENT OF COMMERCIAL DATABASE OF CONSUMERS	ACROSS 191 NUMBER SUB-DIVISIONS
14	METERING	ACROSS 191 NUMBER SUB-DIVISIONS
15	BILLING	ACROSS 191 NUMBER SUB-DIVISIONS
16	COLLECTION	ACROSS 191 NUMBER SUB-DIVISIONS
17	ASSET MANAGEMENT (ERP)	ACROSS 126 NUMBER SUB-DIVISIONS
18	MAINTENANCE MANAGEMENT (ERP)	ACROSS 126 NUMBER SUB-DIVISIONS

- iii. In HPSEBL, currently there are two billing solutions in use, which includes:-
- ELPSoft:- In-house developed application by M/s HCL Infotech Ltd.
 - SAP based ISU Billing Solution.
- iv. Under IPDS guidelines, scope of IT enablement has to be extended to the statutory towns having population up to 5000 as per Census 2011, under which following 40 towns of Himachal Pradesh are identified for IT enablement:-

LIST OF THE TOWNS SELECTED FOR IT IMPLEMENTATION UNDER IPDS IS MENTIONED BELOW:-

List of Towns	Population as per 2011 census	IT Implementation covered under R-APDRP	Covered under IPDS system strengthening	IT Implementation proposed to be covered under IPDS
		Yes/No	Yes/No	Yes/No
Kangra	9528	No	Yes	Yes
Nagrota	5900	No	Yes	Yes
Palampur	3543	No	Yes	Yes
Dehra	4816	No	Yes	Yes
Daulatpur	3767	No	Yes	Yes
Mehatpur	9218	No	Yes	Yes

Gagret	3847	No	Yes	Yes
Santokhgarh	9363	No	Yes	Yes
Dalhousie	10600	No	Yes	Yes
Chowari	3770	No	Yes	Yes
Nurpur	9807	No	Yes	Yes
Bakloh	1805	No	Yes	Yes
Manali	8096	No	Yes	Yes
Bhuntar	4475	No	Yes	Yes
Banjar	1414	No	Yes	Yes
Jogindernagar	5335	No	Yes	Yes
Sarkaghat	4715	No	Yes	Yes
Rewalsar	1821	No	Yes	Yes
Nainadeviji	1204	No	Yes	Yes
Ghumarwin	7899	No	Yes	Yes
Talai	2372	No	Yes	Yes
Bhota	1453	No	Yes	Yes
Nadaun	4430	No	Yes	Yes
Jawalamukhi	5361	No	Yes	Yes
Sujanpur	7943	No	Yes	Yes
Rampur	5655	No	Yes	Yes
Narkanda	901	No	Yes	Yes
Rohru	6875	No	Yes	Yes
Jubbal	1640	No	Yes	Yes
Kothkai	1190	No	Yes	Yes
Chopal	1851	No	Yes	Yes
Theog	4353	No	Yes	Yes
Seouni	2591	No	Yes	Yes
Arki	3040	No	Yes	Yes
Subathu	3685	No	Yes	Yes
Parwanoo	8758	No	Yes	Yes
Kasauli	3885	No	Yes	Yes
Dagshai	2904	No	Yes	Yes
Nalagarh	10708	No	Yes	Yes
Rajgarh	3083	No	Yes	Yes
Dharamshala	30764	Yes	Yes	No
Yol	12028	Yes	Yes	No
Una	18722	Yes	Yes	No
Chamba	19933	Yes	Yes	No
Kullu	18536	Yes	Yes	No
Mandi	26422	Yes	Yes	No
Bilaspur	13654	Yes	Yes	No

Sundernagar	24344	Yes	Yes	No
Hamirpur	17604	Yes	Yes	No
Shimla	171640	Yes	Yes	No
Solan	39256	Yes	Yes	No
Baddi	29911	Yes	Yes	No
Nahan	28899	Yes	Yes	No
Paonta Sahib	25183	Yes	Yes	No

2. RFP structure

Part-I : Includes the works to be executed under IPDS program of MoP/GoI.

Part-II : Annual Maintenance Contract (AMC) and Facility Management Services (FMS)

- i. **Part-I:** Part-I includes the following works to be executed under IPDS program, but not restricted:-

The work shall cover mainly the following-

- a) Supply and installation of additional hardware in the towns (such as router, switches, PC, printer etc.), GPS based GIS survey of assets, consumer indexing, data migration and project management, preparation of Sub Station Master, DTR, Feeder and Town wise consumer database / bill book and linking in GIS, so that DTR wise AT&C, Feeder wise AT&C loss and Town wise AT&C loss can be calculated. HPSEBL shall assist in providing the database schema structure in which the data from IPDS 40 towns has to be compiled to calculate the AT&C loss. List of consumers may be provided by HPSEBL.
- b) Supply and installation of Modems / DCUs on Boundary, DTRs, Consumers and Feeders, so that DTR wise, Feeder wise & Town wise input energy can be captured to calculate AT&C loss. Meters on these nodes shall be installed / provided by HPSEBL itself.
- c) The existing application developed for Meter Data Acquisition System (MDAS) may not be able to capture the data in case a different modem manufacturer is selected. Therefore, the bidder may supply and install separate MDAS solution conforming to the specifications given in the SRS document and has to integrate with existing Meter Data Management (MDM) / Energy Audit commissioned under RAPDRP. Existing MDM accepts the meter data in XML format.
- d) Integration of SAP-ISU billing solution with existing Energy Audit module in line with the specifications given in the SRS document.
- e) The bidder shall carry out the necessary GPS survey of 66/33/22/11 KV feeders & downstream, creation of Assets (as applicable) on GIS map, consumer indexing in the towns as per the detailed specification given in the appendix B Technical Specifications. GIS map is already available with HPSEBL and GIS survey has been done up to 2012.
- f) Incremental up-gradation in the existing hardware / software and supply of new hardware / software at Data center / DR center to cater to additional towns.

- g) Integration of new hardware / software with existing equipment / software of DC / DR with respect to data backup, replication, antivirus, active directory integration.
- h) Preparation of Sub-Station Master Data, DTR, Feeder and Town-wise consumer database for calculation of DTR, Feeder and Town wise Energy Audit reports.
- i) Development of system for automated daily calculation of reliability indices (SAIDI / SAIFI / CAIDI / CAIFI etc.).
- j) Integration of Feeder Data and Customer Care Data with National Power Portal (NPP). NPP currently accepts data in JSON format, which may be changed due course of time and shall be intimated accordingly.
- k) All business application integration should be in Service Oriented Architecture (SoA). HPSEBL already used Oracle fusion middleware for integration in SoA.
- l) Sufficient spare parts are to be maintained by the bidder to maintain the agreed Service Level Agreement (SLA) requirement.
- m) Any other work / activity, in-advertently, left out in the scope of this tender but may be essential for the completion and successful implementation of this project shall be construed to be the part of this tender. However, a new activity which may be intimated by MoP / GoI / PFC from time to time, after issuance of the Letter of Award (LoA) shall be on mutually agreed terms and conditions, for which the bidder has to provide the Man-Hour Cost in the quoted bid.

The above mentioned work has been prioritized to complete the activities in a phased manner as under:-

Phase-I

- Town business process integration with Data Center / DR Center / Customer Care Center
- Modem / DCU installation at Feeders and Boundary points along with MDAS (Meter Data Acquisition System)
- Integration of Feeder and Customer Care Data with National Power Portal
- Calculation of reliability indices (SAIDI/SAIFI)

Phase- II

- AMR (MODEM installation) of Distribution Transformers / Consumers
- Carrying out the necessary GPS survey and creation of asset and consumer database as specified in detailed specification.
- Up-gradation of DC/DR.

ii. **Part-II:** Part-II includes the following works to be executed, but not restricted:-

- a) Supply, installation and commissioning of hardware and software in the manually billed sub-divisions.
- b) Annual Maintenance Contract (AMC) Services for minimum of 3 years after expiry of warranty (support) period, for all the hardware / software / materials supplied under the project (Part-I). The bidder has to provide the AMC services in compliance to the Service levels defined in the Appendix C – Service Level Agreement. The price quoted for AMC services shall also be considered for bid evaluation purpose. However, the HPSEBL reserves the right to award the contract for AMC services as and when required.
- c) Facility Management Services (FMS) for the Automatic Meter Reading (AMR) infrastructure created under this contract during the warranty or AMC period (as applicable) for a period of 3 years (which may further be extended up to 2 more years) from the date of Go-live of all 40 towns. Further the bidder is required to provide the same services for the AMR infrastructure installed or commissioned during the implementation period i.e. from the date of installation / commissioning to Go-live of all the towns. The bidder has to provide following services, but not restricted:-
 - i) The bidder shall be responsible for overall management of AMR system with services rendered at least as per Service Level Agreement (Appendix C of RFP Document)

between utility & vendor. Scope does not include management of physical security for access to said facilities, disaster management & business continuity.

- ii) The Utility will provided the sitting space in neat & clean environment to Facility Management (FM) vendor for carrying out the FMS responsibilities (other communication facilities like P&T telephone & internet facility are to be arranged by FMS vendor).
- iii) Provide Support for hardware and software (for AMR system), including incident logging, assigning incident numbers and dispatching the appropriate support personnel / vendor to remedy a problem. HPSEBL has already implemented the helpdesk to keep track of problem management record (“PMR”) to document a service outage to include (for example) date and time opened description of symptoms, and problem assignment, report on problem status, as required, access to which shall be provided to the bidder.
- iv) Monitor PMR closure, including documented problem resolution.
- v) Provide Utility with complete and timely problem status through the problem tracking system, as requested.
- vi) Provide system status messages, as requested.
- vii) IMAC service provides for the scheduling and performance of install, move, add, and change activities for Hardware and Software. Definitions of these components are as follows:
 - I. **Install:** Installation of MODEM / DCU, which form part of the existing baseline (new equipment needs to be procured by with installation services at the time of procurement).
 - II. **Move:** Movement of MODEM / DCU from one site to another (e.g. MODEM may be dismantled from one site in case of disconnection of consumer and same may be required to be installed on another location on new consumer / metering node)
 - III. **Add:** Installation of additional hardware or software on MODEM / DCU after initial delivery (e.g. Antenna).
 - IV. **Change:** Upgrade to or modification of existing hardware or software on MODEM / DCU (e.g. Upgrade of Firmware).

The price quoted for FMS shall also be considered for bid evaluation purpose. However, the utility reserves the right to award the contract for Facility Management Services as and when required.

The expected implementation schedule for scope of works should be as defined in the Appendix-K.

The bidder is advised to visit and examine the site / existing infrastructure where the systems / facilities are to be installed and proposes a comprehensive solution to complete the defined scope of work. All the documents, drawings, Guaranteed Technical Particulars (GTPs), vendors and specifications shall be finalized after due approval of HPSEBL.

3. General Terms

- i. If MoP / GoI & Nodal Agency-PFC issue any amendment to the guidelines pertaining to this RFP till the date of opening of this bid document, those amendments will

become a part of this bid document. The bidders are also advised to refer the IPDS portal for any amendment or addendum. This, however, will be no reason for any extension of bid submission date.

- ii. The bidder should give a declaration that its bid DOES NOT DEVIATE from this RFP including SRS or any addition / modification to SRS.
- iii. Appendix B - Technical Specification's Section G3 sheet override the SRS's Section G3 – Technical Specifications for Hardware Systems for the respective items.
- iv. HPSEBL reserves the right to withdraw or modify any or all of Part of this RFP till the award of contract.
- v. Expenditure to be incurred will be from sanctioned financial assistance under IPDS scheme and own resources of HPSEBL.
- vi. The successful bidder should establish a Project Management Office in Shimla and shall be responsible to bring in his own development team, related environment & infrastructure at its own cost. The selected system integrator shall be required to give presentation to top management briefing the status of the implementation of the project on monthly basis or as and when required by HPSEBL.
- vii. Guidelines/advisories issued by MoP /PFC have to be strictly complied by the successful bidder. If required, System Integrator may also be asked to furnish any report, data or any other information as per prescribed format of MoP/PFC to be uploaded in their mobile applications or on any web portal. For review meetings, System Integrator may also be required to send their representatives if desired by PFC/HPSEBL/GoI/GoHP.

4. Bid Evaluation

- i. Bids shall be evaluated as per the Appendix E – Evaluation Methodology.

5. Other Terms & Conditions

- i. Any extra item(s) / service(s) required to complete the above mentioned works, bidders are required to quote the same under the heading “Additional items” in various price bid forms. Bidders claim in this respect will not be entertained in later stages.
- ii. Pre-contract integrity pact is required to be signed by the System Integrator in the format prescribed under Section-V Bidding Forms.
- iii. IT Implementing Agency will complete the GPS survey and after validation by HPSEBL will update the GIS based customer indexing and asset in the database of GIS Application. Also, tagging of Consumers connected with each 66/33/11 kV Feeder shall be done in GIS system by implementing agency to enable calculation of Feeder Wise / DT Wise and Town Wise Energy Audit reports (Consumer list may be provided by HPSEBL).
- iv. Scope also includes development of necessary software to generate Formats and Data-structures from Feeder's energy meter data and HPSEBL's MBC (Metering, Billing and Collection) Data and collating them in predefined formats and enable HPSEBL to upload Feeder Data for additional feeders of these non-RAPDRP Towns in an automated manner to NPP.
- v. Feeder data shall compulsory be ported to National Power Portal in JSON / other standard format (developed by NIC) and/or any other Web Portal /Mobile application as per the requirement to be intimated by Nodal Agency.
- vi. Concept of GIS Delta Updates: - After completion of one-time activity as mentioned above, HPSEBL will capture the incremental changes in assets and consumer data for each of the town separately. The System Integrator will capture the latitude and longitude values for these incremental changes in network assets / consumers. The data collected for each town will be forwarded by town-in-charge (ITIA) to the Nodal officer of the HPSEBL and subsequently after verifying at their end nodal officer

will forward the incremental data changes to IT implementation agency. ITIA will fill-up the latitude-longitude values captured and migrate / upload these data in GIS database and will be paid at the unit rate of BoQ of the contract. The process will continue till 3 months after the Enterprise wide Go-Live of the project. After then, HPSEBL will update asset / consumer data in GIS database through their business process applications and shall make suitable arrangement to update GIS repository.

- vii. HPSEBL has also appointed Project Management Agency (PMA) for providing support and handholding to HPSEBL for implementation of Distribution system strengthening and IT/ERP along with ensuing timely implementation of the project as per respective Guidelines of the IPDS scheme. PMA guidelines of MoP/GoI shall be strictly followed in this regard.
- viii. All the works to be carried out under this proposal has to be complied with the SRS document provided.
- ix. The existing application developed for MDAS may not be able to capture the data in case a different modem is supplied, in that case separate MDAS solution & its integration with existing MDM shall be in the scope of the bidder.
- x. Customization/integration/data migration requirements for new towns shall be in the scope of the bidder.
- xi. Model Change request in any of the IT Hardware/Software after the contract shall be done subject to compliance of guidelines of nodal agency in this regard.
- xii. After 20% milestone payment for a town (to be released after availability of Feeder data on NPP, Go-Live of town and availability of SAIDI/SAIFI through system), progressive handover of the town to HPSEBL shall take place for day to day system operation. However, this handing over of system shall not relieve the IT implementing agency from his contractual obligations against the contract.
- xiii. PFC will appoint **Third Party Concurrent Evaluating Agency (TPCEA)** for carrying out inspections on sample basis for IT & ERP projects also, apart from Distribution System Strengthening projects. TPCEA would do concurrent and post implementation evaluation of the works under IPDS and will verify compliances, including Quality of materials, Quality of erections & process of execution of works in various project areas under IPDS as per their defined scope of work.
- xiv. Final payment of 10% to be released after “**Acceptance of IT system**” by HPSEBL and “**Verification of Project completion by TPCEA**” (i.e. after demonstration of successful operation of integrated system as per the contract, integration of all towns with Data Center and Go-Live of all the towns covered under the scope of work).
- xv. All provisions relating to GFR and instructions of CVC in the matter of procurement contracts shall be complied with while selecting IT implementing agency through this RFP following the Competitive bidding process. In case, of conflict between the provisions (relating to financial criteria/parameters) of the Bid Document and the GFR, the provision of Bid Document shall be final.
- xvi. “Review of Current IT Systems” installed at Data Center (Shimla), Disaster Recovery Center (Paonta Sahib) & Customer Care Center (Shimla) is described in **Appendix-“H”** of this bid document.
- xvii. For smooth & speedy implementation, the work proposed under this bid has been prioritized on the basis of advisory provided by the Nodal Agency. HPSEBL & System Integrator shall jointly make efforts to follow the same.

Bill of Material and Related Services

The indicative list of goods and related services to be delivered under this contract is as under. The delivered system should comply with the performance level mentioned in the clause 9 of Section G1 of SRS Document.

Commercial Applications developed under Computerized Billing / SAP-ISU Billing projects are already in use in the offices of 40 IPDS towns, therefore, only the minimal additional hardware / upgrade has been proposed in the current RFP so that the energy audit / accounting, Remote Meter Data Acquisition & GIS based services can also be extended to these new towns.

Implementation Cost shall include all the Installation, Testing and Commissioning / Software Customization Cost including data migration, project management, integration of towns under scope with existing DC/DR/CCC, training etc.

Current scope include installation and commissioning of additional hardware / components supplied and any Software modification / Customization charges along with integration with all associated existing hardware and Software like Application software, Operating Systems, Antivirus, EMS/NMS, IPS, firewalls etc. **as per requirement in order to achieve the perspective of the project and relevant technical specification mentioned in SRS documents along with latest available technology.**

A. Work proposed under Data Center at Shimla			
Equipment	Type	Unit	Quantity
Hardware			
Additional RAM in existing Servers	DDR-3 32 GB	No.	4
Server for Hyper Converged Infrastructure	Xeon	No.	5
Software			
Application Software License			
Database Licenses for Database Server (Energy Audit and MDM)	Oracle	Lot	1
Basic Software License (OS, Antivirus etc.)			
VMware vCenter or equivalent	Enterprise	Lot	1
VMware vSphere or equivalent	Enterprise	Lot	1
VMware vSAN or equivalent	Enterprise	Lot	1
RHEL 6.5 Operating Systems with support subscription from OEM for 5 years	Enterprise	Lot	1
RHEL 7.4 Operating Systems with support subscription from OEM for 5 years	Enterprise	Lot	1
Windows Server Operating System	Enterprise	Lot	1
Antivirus (Servers + Desktop PC's)	Enterprise	Lot	1

- It is proposed to upgrade the RAM modules in the existing Servers of the Data Center at Shimla. The currently installed RAM configuration of these Servers with relevant details are tabulated below :-

Server Name	Server Quantity	Existing RAM configuration	Existing Make & Model of Server	Proposed RAM configuration	Proposed Qty at
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					DC
MDM Server	2	2 Nos. of 8 GB = 16 GB in each server	HP DL380 G6	2 Nos. of 32 GB = 64 GB in each server	4
Total	2				4

- Total 21 number of Virtual Machines (VMs) are required to be configured on the Hyper Converged Infrastructure whose bifurcation is hereunder as:-

S. No.	Description of Virtual Machine (Server)	Operating System to be deployed	Quantity of VMs
1.	Energy Audit and MDM (Database)	Enterprise Edition Windows Server (latest)	2
2.	Meter Data Acquisition System (MDAS) (Application)	Enterprise Edition Windows Server (latest)	2
3.	SAP-ISU Billing (Application & Database)	RHEL 6.5	12
4.	SAP-ERP (Application and Database)	RHEL 7.4	5
Total			21

- The quantity of MDAS VMs is envisaged only in the event wherein the modems quoted by the bidder are similar to the existing make already in use by HPSEBL. In case of different make of MODEMS, bidder is required to consider the quantity of application server to provide the complete solution of MDAS along with requisite hardware and software. Further, the new MDAS has to be integrated with existing MDAS/MDM. The cost if any, for the MDAS has to be included along with the cost of modems, no separate cost for MDAS shall be provided.
- 12 Number VMs are proposed for SAP-ISU billing applications at Data Centre.
- 5 Number VMs are proposed for SAP-ERP applications at Data Centre.
- 2 Number VMs are proposed for Energy Audit and MDM at Data Centre. Current Database deployed for Energy Audit and MDM is required to be migrated on these proposed database servers.
- Virtual SAN Space is required on the Hyper Converged Infrastructure as under:-

S. No.	Description	RAID 1+0	RAID 5
1.	Usable space	18 TB	11.2 TB

- **Antivirus**

Mcafee Antivirus is in use in Data Center for the existing Servers & Workstation PCs.

Bidder is required to quote the antivirus licenses for Hyper Converged Infrastructure to be installed at Data Center, Disaster Recovery Center & workstation PCs to be installed at site officers as per current scope of work. Bidders are requested to quote the same make of Antivirus.

B. Work proposed under Disaster Recovery Center at Paonta Sahib			
Equipment	Type	Unit	Quantity
Hardware			
Additional RAM in existing Servers	DDR-3 32 GB	No.	4

Server for Hyper Converged Infrastructure	Xeon	No.	5
Software			
Basic Software License (OS, Antivirus etc.)			
VMware vCenter or equivalent	Enterprise	Lot	1
VMware vSphere or equivalent	Enterprise	Lot	1
VMware vSAN or equivalent	Enterprise	Lot	1
RHEL 6.5 Operating Systems with support subscription from OEM for 5 years	Enterprise	Lot	1
RHEL 7.4 Operating Systems with support subscription from OEM for 5 years	Enterprise	Lot	1
Windows Server Operating Systems	Enterprise	Lot	1

- It is proposed to upgrade the RAM modules in the existing Servers of the Disaster Recovery Center at Paonta Sahib. The currently installed RAM configuration of these Servers with relevant details are tabulated below :-

Server Name	Server Quantity	Existing RAM configuration	Existing Make & Model of Server	Proposed RAM configuration	Proposed Qty at DC
MDM Server	2	2 Nos. of 8 GB = 16 GB in each server	HP DL380 G6	2 Nos. of 32 GB = 64 GB in each server	4
Total	2				4

- Total 21 number of Virtual Machines (VMs) are required to be configured on the Hyper Converged Infrastructure whose bifurcation is hereunder as:-

S. No.	Description of Virtual Machine (Server)	Operating System to be deployed	Quantity of VMs
1.	Energy Audit and MDM (Database)	Enterprise Edition Windows Server (latest)	2
2.	Meter Data Acquisition System (MDAS) (Application)	Enterprise Edition Windows Server (latest)	2
3.	SAP-ISU Billing (Application & Database)	RHEL 6.5	12
4.	SAP-ERP (Application and Database)	RHEL 7.4	5
Total			21

- The quantity of MDAS VMs is envisaged only in the event wherein the modems quoted by the bidder are similar to the existing make already in use by HPSEBL. In case of different make of MODEMS, bidder is required to consider the quantity of application server to provide the complete solution of MDAS along with requisite hardware and software. Further, the new MDAS has to be integrated with existing MDAS/MDM. The cost if any, for the MDAS has to be included along with the cost of modems, no separate cost for MDAS shall be provided.
- 12 Number VMs are proposed for SAP-ISU billing applications at Disaster Recovery Centre.
- 5 Number VMs are proposed for SAP-ERP applications at Disaster Recovery Centre.

- 2 Number VMs are proposed for Energy Audit and MDM at Disaster Recovery Centre. Current Database deployed for Energy Audit and MDM is required to be migrated on these proposed database servers.
- Virtual SAN Space is required on the Hyper Converged Infrastructure as under:-

S. No.	Description	RAID 1+0	RAID 5
1.	Usable space	18 TB	11.2 TB

C. Supply & installation of additional hardware proposed in IPDS town

Although the majority of field offices of these additional IPDS towns are connected with Data Center, HPSEBL on MPLS / VPNoBB based network links and are accessing the commercial applications. In order to extend the GIS, MDAS & Energy Accounting & Auditing Services to these towns minimum additional IT Hardware has been proposed to be procured through this proposal. There may be some instances wherein bidders are required to dismantle the existing IT network equipment and to be stored/installed as per the directions of HPSEBL IT team during the execution of work, the list of such locations shall be finalized at the time freezing BoQ with the successful bidder. Separate cost for these works shall not be allowed.

Utility wise estimated Bill of Quantity (BoQ):-

Total No. of Circles covered	12
Total No. of Towns covered	40
Total No. of Sub-division Offices covered	41
Total Number of office premises	217

Hardware/ Equipment	Type	Unit	Quantity
Switches/Routers			
Layer II Switch		No.	217
Router for MPLS/ VPN Network		No.	217
Cables, Jacks etc.		Lot	217
Workstation / Equipment Cords		Lot	217
2 kVA UPS		No.	217
Sub Total			
Hardware for AMR based Data Logging System			
GPRS/CDMA/EDGE/3G Modem		No.	2141
DCU		No.	42
Sub Total			
Spot Billing System			
Hand Held Spot Billing Equipment connected with		No.	-

Integrated Printer			
Workstation PCs, Printers & Others			
Workstation PC (including UPS, Computer chair, table etc.)		No.	378
Network LaserJet (B/W) Printer		No.	161
Bar Code Reader		No.	120
IP Phone		No.	82

GPS based GIS Survey & Mapping of Assets			
Total project area.	Type	Sq. Km	136
Locating co-ordinates (Latitude-Longitude) using GPS, collection/up-dation of attribute database of following electrical network assets through field survey and development, codification, mapping & indexing with their upstream source of supply:			
66/33, 66/11, 33/11 kV substations		Nos	42
HT (66, 33, 11 kV) overhead lines/underground cables along with associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.		Kms	857
LT overhead lines and underground cables along with associated equipments such as poles, feeder pillar boxes etc.		Kms	1346
Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through GPS survey for GIS application and tagging of Consumers connected with each 11 KV Feeder in GIS system to enable calculation of Feeder wise and Town wise Energy Audit (Feeder wise consumer list shall be provided by Utility)		Per Town	40

- The existing GIS is based on GPS survey on Quickbird 1 m / 2.5 m or Cartoast 5 m / 10 m resolution satellite images.

- Scope also covers preparation of Sub-Station Master, DTR, Feeder and Town wise consumer database / bill book and linking with existing GIS Application, so that Sub-Station balance report, DTR wise AT&C loss, Feeder wise AT&C loss and Town wise AT&C loss can be calculated.
- List of consumers may be provided by Utilities.

CircleWise / TownWise Bill of Material under IPDS IT Phase-II is provided below:-

1. Operation Circle , Nahan

IT Equipments

Hardware/ Equipment	Unit	Qty for Rajgarh Town	Nahan Circle Total
Switches/Routers			
Layer II Switch	No.	6	6
Router for MPLS/ VPN Network	No.	6	6
Cables, Jacks etc.	lot	6	6
Workstation / Equipment Cords	lot	6	6
2 kVA UPS	No.	6	6
Hardware for AMR based Data Logging System			
GPRS/CDMA/EDGE/3G Modem	No.	25	25
DCU	No.	1	1
Spot Billing System			
Hand Held Spot Billing Equipment connected with Integrated Printer	No.	-	-
Workstation PCs, Printers & Others			
Workstation PC (including UPS, Computer chair, table etc.)	No.	10	10
Network LaserJet (B/W) Printer	No.	4	4
Bar Code Reader	No.	3	3
IP Phone	No.	2	2
GPS based GIS Survey of Assets			
Project area.	Sq. Km	8	8
Locating co-ordinates (Latitude-Longitude) using GPS, collection/updation of attribute database of following electrical network assets through field survey and development, codification, mapping & indexing with their upstream source of supply:			
66/33, 66/11, 33/11 kV substations	Nos	1	1

HT (66, 33, 11 kV) overhead lines/underground cables along with associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	Kms	15	15
LT overhead lines and underground cables along with associated equipments such as poles, feeder pillar boxes etc.	Kms	5	5
Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through GPS survey for GIS application and tagging of Consumers connected with each 11 KV Feeder in GIS system to enable calculation of Feeder wise and Town wise Energy Audit (Feeder wise consumer list shall be provided by Utility)	Per Town	1	1

2. Operation Circle , Shimla

IT Equipments

Hardware/ Equipment	Unit	Qty for Theog Town	Qty for Sunni Town	Shimla Circle Total
Switches/Routers				
Layer II Switch	No.	6	5	11
Router for MPLS/ VPN Network	No.	6	5	11
Cables, Jacks etc.	lot	6	5	11
Workstation / Equipment Cords	lot	6	5	11
2 kVA UPS	No.	6	5	11
Hardware for AMR based Data Logging System				
GPRS/CDMA/EDGE/3G Modem	No.	32	16	48
DCU	No.	2	1	3
Spot Billing System				
Hand Held Spot Billing Equipment connected with Integrated Printer	No.	-	-	-
Workstation PCs, Printers & Others				
Workstation PC (including UPS, Computer chair, table etc.)	No.	10	9	19
Network LaserJet (B/W) Printer	No.	4	4	8
Bar Code Reader	No.	3	3	6

IP Phone	No.	2	2	4
GPS based GIS Survey of Assets				
Project area.	Sq. Km	2	2.5	4.5
Locating co-ordinates (Latitude-Longitude) using GPS, collection/updation of attribute database of following electrical network assets through field survey and development, codification, mapping & indexing with their upstream source of supply:				
66/33, 66/11, 33/11 kV substations	Nos	2	1	3
HT (66, 33, 11 kV) overhead lines/underground cables along with associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	Kms	13	3	16
LT overhead lines and underground cables along with associated equipments such as poles, feeder pillar boxes etc.	Kms	15.6	16.4	32
Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through GPS survey for GIS application and tagging of Consumers connected with each 11 KV Feeder in GIS system to enable calculation of Feeder wise and Town wise Energy Audit (Feeder wise consumer list shall be provided by Utility)	Per Town	1	1	2

3. Operation Circle , Rampur

IT Equipments

Hardware/ Equipment	Unit	Qty for RampurTown	Qty for Narkanda Town	Rampur Circle Total
Switches/Routers				
Layer II Switch	No.	8	5	13
Router for MPLS/ VPN Network	No.	8	5	13
Cables, Jacks etc.	lot	8	5	13
Workstation / Equipment Cords	lot	8	5	13
2 kVA UPS	No.	8	5	13

Hardware for AMR based Data Logging System				
GPRS/CDMA/EDGE/3G Modem	No.	93	16	109
DCU	No.	1	1	2
Spot Billing System				
Hand Held Spot Billing Equipment connected with Integrated Printer	No.	-	-	-
Workstation PCs, Printers & Others				
Workstation PC (including UPS, Computer chair, table etc.)	No.	12	9	21
Network LaserJet (B/W) Printer	No.	4	4	8
Bar Code Reader	No.	3	3	6
IP Phone	No.	2	2	4
GPS based GIS Survey of Assets				
Project area.	Sq. Km	6.3	1.2	7.5
Locating co-ordinates (Latitude-Longitude) using GPS, collection/updation of attribute database of following electrical network assets through field survey and development, codification, mapping & indexing with their upstream source of supply:				
66/33, 66/11, 33/11 kV substations	Nos	1	1	2
HT (66, 33, 11 kV) overhead lines/underground cables along with associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	Kms	63	13	76
LT overhead lines and underground cables alongwith associated equipments such as poles, feeder pillar boxes etc.	Kms	79	5	84
Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through GPS survey for GIS application and tagging of Consumers connected with each 11 KV Feeder in GIS system to enable calculation of Feeder wise and Town wise Energy Audit (Feeder wise consumer list shall be provided by Utility)	Per Town	1	1	2

4. Operation Circle , Kullu

IT Equipments

Hardware/ Equipment	Unit	Qty for Manali Town	Qty for Bhuntar Town	Qty for Banjar Town	Kullu Circle Total
Switches/Routers					
Layer II Switch	No.	7	8	5	20
Router for MPLS/ VPN Network	No.	7	8	5	20
Cables, Jacks etc.	lot	7	8	5	20
Workstation / Equipment Cords	lot	7	8	5	20
2 kVA UPS	No.	7	8	5	20
Hardware for AMR based Data Logging System					
GPRS/CDMA/EDGE/3G Modem	No.	271	99	51	421
DCU	No.	1	1	1	3
Spot Billing System					
Hand Held Spot Billing Equipment connected with Integrated Printer	No.	-	-	-	-
Workstation PCs, Printers & Others					
Workstation PC (including UPS, Computer chair, table etc.)	No.	11	12	9	32
Network LaserJet (B/W) Printer	No.	4	4	4	12
Bar Code Reader	No.	3	3	3	9
IP Phone	No.	2	2	2	6
GPS based GIS Survey of Assets					
Project area.	Sq. Km	3.6	2.9	1.7	8.2
Locating co-ordinates (Latitude-Longitude) using GPS, collection/updation of attribute database of following electrical network assets through field survey and development, codification, mapping & indexing with their upstream source of supply:					
66/33, 66/11, 33/11 kV substations	Nos	1	1	1	3
HT (66, 33, 11 kV) overhead lines/underground cables alongwith associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	Kms	24	24	15	63
LT overhead lines and underground cables alongwith associated equipments such as poles, feeder pillar boxes etc.	Kms	67	82	45	193

Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through GPS survey for GIS application and tagging of Consumers connected with each 11 KV Feeder in GIS system to enable calculation of Feeder wise and Town wise Energy Audit (Feeder wise consumer list shall be provided by Utility)	Per Town	1	1	1	3

5. Operation Circle , Solan

IT Equipments

Hardware/ Equipment	Unit	Qty for Arki Town	Qty for Subathu Town	Qty for Parwanoo Town	Qty for Kasauli Town	Qty for Dagshai Town	Qty for Nalaga rh Town	Solan Circle Total
Switches/Routers								
Layer II Switch	No.	5	5	7	4	3	6	30
Router for MPLS/ VPN Network	No.	5	5	7	4	3	6	30
Cables, Jacks etc.	lot	5	5	7	4	3	6	30
Workstation / Equipment Cords	lot	5	5	7	4	3	6	30
2 kVA UPS	No.	5	5	7	4	3	6	30
Hardware for AMR based Data Logging System								
GPRS/CDMA/EDGE/3G Modem	No.	15	25	209	42	25	161	477
DCU	No.	1	1	1	1	1	1	6
Spot Billing System								
Hand Held Spot Billing Equipment connected with Integrated Printer	No.	-	-	-	-	-	-	-
Workstation PCs, Printers & Others								
Workstation PC (including UPS, Computer chair, table etc.)	No.	9	9	11	8	7	10	54
Network LaserJet (B/W) Printer	No.	4	4	4	4	4	4	24
Bar Code Reader	No.	3	3	3	3	3	3	18
IP Phone	No.	2	2	2	2	2	2	12

GPS based GIS Survey of Assets								
Project area.	Sq. Km	1.45	1.3	2.7	2.9	2.3	3.9	14.55
Locating co-ordinates (Latitude-Longitude) using GPS, collection/updation of attribute database of following electrical network assets through field survey and development, codification, mapping & indexing with their upstream source of supply:								
66/33, 66/11, 33/11 kV substations	Nos	1	1	1	1	1	1	6
HT (66, 33, 11 kV) overhead lines/underground cables along with associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	Kms	9	7	60	8	14	6	104
LT overhead lines and underground cables along with associated equipments such as poles, feeder pillar boxes etc.	Kms	6	24	40	21	11	45	147
Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through GPS survey for GIS application and tagging of Consumers connected with each 11 KV Feeder in GIS system to enable calculation of Feeder wise and Town wise Energy Audit (Feeder wise consumer list shall be provided by Utility)	Per Town	1	1	1	1	1	1	6

6. Operation Circle , Rohru

IT Equipments

Hardware/ Equipment	Unit	Qty for	Qty for Jubbal	Qty for Kotkhai	Qty for Chopal	Rohru Circle
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		Rohro o Town	Town	Town	Town	Total
Switches/Routers						
Layer II Switch	No.	6	6	3	5	20
Router for MPLS/ VPN Network	No.	6	6	3	5	20
Cables, Jacks etc.	lot	6	6	3	5	20
Workstation / Equipment Cords	lot	6	6	3	5	20
2 kVA UPS	No.	6	6	3	5	20
Hardware for AMR based Data Logging System						
GPRS/CDMA/EDGE/3G Modem	No.	57	16	22	22	117
DCU	No.	1	1	1	1	4
Spot Billing System						
Hand Held Spot Billing Equipment connected with Integrated Printer	No.	-	-	-	-	-
Workstation PCs, Printers & Others						
Workstation PC (including UPS, Computer chair, table etc.)	No.	10	9	7	9	35
Network LaserJet (B/W) Printer	No.	4	4	4	4	16
Bar Code Reader	No.	3	3	3	3	12
IP Phone	No.	2	2	2	2	8
GPS based GIS Survey of Assets						
Project area.	Sq. Km	4.5	3	2.4	4	13.9
Locating co-ordinates (Latitude-Longitude) using GPS, collection/updation of attribute database of following electrical network assets through field survey and development, codification, mapping & indexing with their upstream source of supply:						
66/33, 66/11, 33/11 kV substations	Nos	1	1	1	1	4
HT (66, 33, 11 kV) overhead lines/underground cables alongwith associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	Kms	28	22	28	25	103
LT overhead lines and underground cables alongwith associated equipments such as poles, feeder pillar boxes etc.	Kms	52	42	52	43	189

Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through GPS survey for GIS application and tagging of Consumers connected with each 11 KV Feeder in GIS system to enable calculation of Feeder wise and Town wise Energy Audit (Feeder wise consumer list shall be provided by Utility)	Per Town	1	1	1	1	4

7. Operation Circle , Hamirpur

IT Equipments

Hardware/ Equipment	Unit	Qty for Bhota Town	Qty for Nadaun Town	Qty for Jawalamukhi Town	Qty for Sujanpur Town	Hamirpur Circle Total
Switches/Routers						
Layer II Switch	No.	9	5	3	5	22
Router for MPLS/ VPN Network	No.	9	5	3	5	22
Cables, Jacks etc.	lot	9	5	3	5	22
Workstation / Equipment Cords	lot	9	5	3	5	22
2 kVA UPS	No.	9	5	3	5	22
Hardware for AMR based Data Logging System						
GPRS/CDMA/EDGE/3G Modem	No.	8	33	33	47	121
DCU	No.	1	1	1	1	4
Spot Billing System						
Hand Held Spot Billing Equipment connected with Integrated Printer	No.	-	-	-	-	-
Workstation PCs, Printers & Others						
Workstation PC (including UPS, Computer chair, table etc.)	No.	13	9	7	9	38
Network LaserJet (B/W) Printer	No.	4	4	4	4	16
Bar Code Reader	No.	3	3	3	3	12

IP Phone	No.	2	2	2	2	8
GPS based GIS Survey of Assets						
Project area.	Sq. Km	1.06	2.9	3.7	1.5	9.16
Locating co-ordinates (Latitude-Longitude) using GPS, collection/updation of attribute database of following electrical network assets through field survey and development, codification, mapping & indexing with their upstream source of supply:						
66/33, 66/11, 33/11 kV substations	Nos	1	1	1	1	4
HT (66, 33, 11 kV) overhead lines/underground cables alongwith associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	Kms	2	9	10	7	27
LT overhead lines and underground cables alongwith associated equipments such as poles, feeder pillar boxes etc.	Kms	4	19	19	10	52
Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through GPS survey for GIS application and tagging of Consumers connected with each 11 KV Feeder in GIS system to enable calculation of Feeder wise and Town wise Energy Audit (Feeder wise consumer list shall be provided by Utility)	Per Town	1	1	1	1	4

8. Operation Circle , Bilaspur

IT Equipments

Hardware/ Equipment	Unit	Qty for NainaDev iJi Town	Qty for Ghumarwin Town	Qty for Talai Town	Bilaspur Circle Total
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Switches/Routers					
Layer II Switch	No.	5	5	3	13
Router for MPLS/ VPN Network	No.	5	5	3	13
Cables, Jacks etc.	lot	5	5	3	13
Workstation / Equipment Cords	lot	5	5	3	13
2 kVA UPS	No.	5	5	3	13
Hardware for AMR based Data Logging System					
GPRS/CDMA/EDGE/3G Modem	No.	14	38	13	65
DCU	No.	1	1	1	3
Spot Billing System					
Hand Held Spot Billing Equipment connected with Integrated Printer	No.	-	-	-	-
Workstation PCs, Printers & Others					
Workstation PC (including UPS, Computer chair, table etc.)	No.	9	9	7	25
Network LaserJet (B/W) Printer	No.	4	4	4	12
Bar Code Reader	No.	3	3	3	9
IP Phone	No.	2	2	2	6
GPS based GIS Survey of Assets					
Project area.	Sq. Km	1.6	2.4	2.7	6.7
Locating co-ordinates (Latitude-Longitude) using GPS, collection/updation of attribute database of following electrical network assets through field survey and development, codification, mapping & indexing with their upstream source of supply:					
66/33, 66/11, 33/11 kV substations	Nos	1	1	1	3
HT (66, 33, 11 kV) overhead lines/underground cables alongwith associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	Kms	7	11	5	23
LT overhead lines and underground cables alongwith associated equipments such as poles, feeder pillar boxes etc.	Kms	21	39	12	72

Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through GPS survey for GIS application and tagging of Consumers connected with each 11 KV Feeder in GIS system to enable calculation of Feeder wise and Town wise Energy Audit (Feeder wise consumer list shall be provided by Utility)	Per Town	1	1	1	3

9. Operation Circle , Mandi

IT Equipments

Hardware/ Equipment	Unit	Qty for Joginder Nagar Town	Qty for Sarkaghat Town	Qty for Rewalsar Town	Mandi Circle Total
Switches/Routers					
Layer II Switch	No.	8	6	6	20
Router for MPLS/ VPN Network	No.	8	6	6	20
Cables, Jacks etc.	lot	8	6	6	20
Workstation / Equipment Cords	lot	8	6	6	20
2 kVA UPS	No.	8	6	6	20
Hardware for AMR based Data Logging System					
GPRS/CDMA/EDGE/3G Modem	No.	41	21	47	109
DCU	No.	2	1	1	4
Spot Billing System					
Hand Held Spot Billing Equipment connected with Integrated Printer	No.	-	-	-	-
Workstation PCs, Printers & Others					
Workstation PC (including UPS, Computer chair, table etc.)	No.	12	10	10	32
Network LaserJet (B/W) Printer	No.	4	4	4	12
Bar Code Reader	No.	3	3	3	9
IP Phone	No.	2	2	2	6
GPS based GIS Survey of Assets					

Project area.	Sq. Km	2.4	2.6	1.6	6.6
Locating co-ordinates (Latitude-Longitude) using GPS, collection/updation of attribute database of following electrical network assets through field survey and development, codification, mapping & indexing with their upstream source of supply:					
66/33, 66/11, 33/11 kV substations	Nos	2	1	1	4
HT (66, 33, 11 kV) overhead lines/underground cables alongwith associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	Kms	59	22	45	126
LT overhead lines and underground cables alongwith associated equipments such as poles, feeder pillar boxes etc.	Kms	29	52	20	101
Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through GPS survey for GIS application and tagging of Consumers connected with each 11 KV Feeder in GIS system to enable calculation of Feeder wise and Town wise Energy Audit (Feeder wise consumer list shall be provided by Utility)	Per Town	1	1	1	3

10. Operation Circle , Dalhousie

IT Equipments

Hardware/ Equipment	Unit	Qty for Dalhousie Town	Qty for Chowari Town	Qty for Bakloh Town	Qty for Nurpur Town	Dalhousie Circle Total
Switches/Routers						
Layer II Switch	No.	7	4	3	5	19
Router for MPLS/ VPN Network	No.	7	4	3	5	19
Cables, Jacks etc.	lot	7	4	3	5	19
Workstation / Equipment Cords	lot	7	4	3	5	19
2 kVA UPS	No.	7	4	3	5	19
Hardware for AMR based Data Logging System						

GPRS/CDMA/EDGE/3G Modem	No.	59	20	11	48	138
DCU	No.	1	1	1	1	4
Spot Billing System						
Hand Held Spot Billing Equipment connected with Integrated Printer	No.	-	-	-	-	-
Workstation PCs, Printers & Others						
Workstation PC (including UPS, Computer chair, table etc.)	No.	11	8	7	9	35
Network LaserJet (B/W) Printer	No.	4	4	4	4	16
Bar Code Reader	No.	3	3	3	3	12
IP Phone	No.	2	2	2	2	8
GPS based GIS Survey of Assets						
Project area.	Sq. Km	14	3.5	2.8	2.5	22.8
Locating co-ordinates (Latitude-Longitude) using GPS, collection/update of attribute database of following electrical network assets through field survey and development, codification, mapping & indexing with their upstream source of supply:						
66/33, 66/11, 33/11 kV substations	Nos	1	1	1	1	4
HT (66, 33, 11 kV) overhead lines/underground cables alongwith associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	Kms	49	5	1	34	89
LT overhead lines and underground cables alongwith associated equipments such as poles, feeder pillar boxes etc.	Kms	72	11	0	62	145

Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through GPS survey for GIS application and tagging of Consumers connected with each 11 KV Feeder in GIS system to enable calculation of Feeder wise and Town wise Energy Audit (Feeder wise consumer list shall be provided by Utility)	Per Town	1	1	1	1	4

11. Operation Circle , Una

IT Equipments

Hardware/ Equipment	Unit	Qty for Daulatpur Town	Qty for Mehatpur Town	Qty for Gagret Town	Qty for Santokhgarh Town	Una Circle Total
Switches/Routers						
Layer II Switch	No.	4	5	4	3	16
Router for MPLS/ VPN Network	No.	4	5	4	3	16
Cables, Jacks etc.	Lot	4	5	4	3	16
Workstation / Equipment Cords	Lot	4	5	4	3	16
2 kVA UPS	No.	4	5	4	3	16
Hardware for AMR based Data Logging System						
GPRS/CDMA/EDGE/3G Modem	No.	21	85	31	69	206
DCU	No.	1	1	1	1	4
Spot Billing System						
Hand Held Spot Billing Equipment connected with Integrated Printer	No.	-	-	-	-	-
Workstation PCs, Printers & Others						

Workstation PC (including UPS, Computer chair, table etc.)	No.	8	9	8	7	32
Network LaserJet (B/W) Printer	No.	4	4	4	4	16
Bar Code Reader	No.	3	3	3	3	12
IP Phone	No.	2	2	2	2	8
GPS based GIS Survey of Assets						
Project area.	Sq. Km	5.04	4.2	3.8	4.5	17.54
Locating co-ordinates (Latitude-Longitude) using GPS, collection/updation of attribute database of following electrical network assets through field survey and development, codification, mapping & indexing with their upstream source of supply:						
66/33, 66/11, 33/11 kV substations	Nos	1	1	1	1	4
HT (66, 33, 11 kV) overhead lines/underground cables alongwith associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	Kms	5	12	12	34	63
LT overhead lines and underground cables alongwith associated equipments such as poles, feeder pillar boxes etc.	Kms	12	24	26	24	86
Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through GPS survey for GIS application and tagging of Consumers connected with each 11 KV Feeder in GIS system to enable calculation of Feeder wise and Town wise Energy Audit (Feeder wise consumer list shall be provided by Utility)	Per Town	1	1	1	1	4

12. Operation Circle , Kangra

IT Equipments

Hardware/ Equipment	Unit	Qty for Kangra Town	Qty for Nagrota Town	Qty for Palampur Town	Qty for Dehra Town	Kangra Circle Total
Switches/Routers						
Layer II Switch	No.	8	5	9	5	27
Router for MPLS/ VPN Network	No.	8	5	9	5	27
Cables, Jacks etc.	lot	8	5	9	5	27
Workstation / Equipment Cords	lot	8	5	9	5	27
2 kVA UPS	No.	8	5	9	5	27
Hardware for AMR based Data Logging System						
GPRS/CDMA/EDGE/3G Modem	No.	58	28	191	28	305
DCU	No.	1	1	1	1	4
Spot Billing System						
Hand Held Spot Billing Equipment connected with Integrated Printer	No.	-	-	-	-	-
Workstation PCs, Printers & Others						
Workstation PC (including UPS, Computer chair, table etc.)	No.	14	9	13	9	45
Network LaserJet (B/W) Printer	No.	5	4	4	4	17
Bar Code Reader	No.	3	3	3	3	12
IP Phone	No.	4	2	2	2	10
GPS based GIS Survey of Assets						
Project area.	Sq. Km	7.5	5.25	1.2	2.8	16.75
Locating co-ordinates (Latitude-Longitude) using GPS, collection/updation of attribute database of following electrical network assets through field survey and development, codification, mapping & indexing with their upstream source of supply:						
66/33, 66/11, 33/11 kV substations	Nos	1	1	1	1	4

HT (66, 33, 11 kV) overhead lines/underground cables alongwith associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	Kms	34	16	97	6	153
LT overhead lines and underground cables alongwith associated equipments such as poles, feeder pillar boxes etc.	Kms	22	32	169	19	242
Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through GPS survey for GIS application and tagging of Consumers connected with each 11 KV Feeder in GIS system to enable calculation of Feeder wise and Town wise Energy Audit (Feeder wise consumer list shall be provided by Utility)	Per Town	1	1	1	1	4

Detail of additional hardware to be supplied in manually billed Subdivisions

Sr. No.	Electrical Sub-Division	Workstation PCs	UPS for workstation PC	Furniture Set (Computer Chair, Table etc.)
1	Rajgarh	5	5	5
2	Charna	5	5	5
3	Narag	5	5	5
4	Sarahan	5	5	5
5	Panog	5	5	5
6	Kotkhai	7	7	7

7	Chopal	5	5	5
8	Nerwa	5	5	5
9	Kupwi	5	5	5
10	Anni	5	5	5
11	Nirmand	5	5	5
12	Jagatkhana	5	5	5
13	Nithar	5	5	5
14	Peo	5	5	5
15	Sangla	5	5	5
16	Pooh	5	5	5
17	Bhawanagar	5	5	5
18	Tapri	5	5	5
19	Koti	4	4	4
20	Dharampur	5	5	5
21	Sandhol	5	5	5
22	Tihra	5	5	5
23	Gohar	5	5	5
24	Pandoh	5	5	5
25	Janjehli	5	5	5
26	Baggi	5	5	5
27	Kot/Ganguwal	7	7	7
28	Karsog	5	5	5
29	Seri	5	5	5
30	Nihri	5	5	5
31	Churag	5	5	5
32	Pangana	5	5	5
33	Chhatti	5	5	5
34	Larji	5	0	0
35	Keylong	5	5	5
36	Udaipur	5	5	5
37	Karga	7	7	7
38	Bali Chowki	7	7	7
39	Killar - Pangi	5	5	5
40	Sach	5	5	5
41	Kaza	5	5	5
42	Tabo	5	5	5
43	12 number Operation Circle offices (@ 5	60	60	60

Workstation PCs per circle for training purpose)			
Total	277	272	272