South Hadley Electric Light DEPARTMENT

REQUEST FOR PROPOSALS - # 2020-2B

South Hadley Electric Light Department "SHELD"
Advanced Metering Infrastructure (AMI) System

The South Hadley Electric Light Department (SHELD), is soliciting proposals for an Advanced Metering Infrastructure (AMI) system. Sealed proposals will be received at the main office of the South Hadley Electric Light Department, 85 Main Street, South Hadley, MA 01075, **until 1:00 p.m., Thursday, September 24, 2020,** at which time said proposals shall be publicly opened and read. No fax or electronic bids will be accepted. All bids must be clear and legible be considered. Envelopes containing proposals should be clearly marked on the outside: **"Proposal for Advanced Metering Infrastructure".**

Complete project information, specifications and proposal forms may be obtained electronically either by contacting Kim Mendoza at kmendoza@sheld.org or by downloading from the SHELD website: https://www.sheld.org/pages/about/rfps-specs/ .

Proposals will be opened at the South Hadley Electric Light Department, on **Thursday, September 24, 2020 at 1:00 p.m. EST**. Any proposal received after 1:00 p.m. will not be accepted.

Interested Proposers must submit a Notice of Intent to Submit Proposal, by **Monday August 17, 2020**, to Kim Mendoza, kmendoza@sheld.org, at the South Hadley Electric Light Department, 85 Main Street, South Hadley, MA 01075, via email or mail.

Proposals shall be considered firm offers valid for a period of three hundred and sixty-five (365) calendar days from the proposal deadline.

SHELD reserves the right to accept or reject proposals or portions thereof, reject all proposals, and/or waive any formalities in the process if it is deemed to be in the best interest of SHELD.

SHELD reserves the right to award this contract not necessarily to the Proposer with the lowest cost proposal, but to the Proposer which will provide the best overall match to the RFP requirements and which best serves the interest of SHELD.

Sean Fitzgerald, General Manager
South Hadley Electric Light Department
85 Main Street
South Hadley, MA 01075

Request for Proposal (RFP)

South Hadley Electric Light Department (SHELD)

Advanced Metering Infrastructure

#2020-2B

Issued by the South Hadley Electric Light Department **08/03/2020**
Deadline for Notice of Intent to Submit Proposal: **08/17/2020**
Deadline for Complete Proposal Submission: **1:00 PM ET 09/24/2020**

1. REQUEST FOR PROPOSAL: ADVANCED METERING INFRASTRUCTURE (AMI)

The South Hadley Electric Light Department (SHELD) is seeking to replace its automated meter reading (AMR) system with an AMI system in the most strategic manner. SHELD is interested in a solution that provides new metering technology, meters, data management, and a communication system that will have a useful minimum life of 20 years. The current metering data collection technology (AMR) and physical meters are nearing end-of-life, and have inherent limitations that hamper fulfilling the strategic goals of SHELD, as well as the expectations of our customers. A cloud solution or Software as a Service (SaaS) for the system is preferred. SHELD is looking for the best solution that meets its functional requirements, and provides a growth path to support new functionality to meet industry trends.

There is increased complexity with the introduction of new technologies such as distributed generation including solar arrays, energy storage, demand response and controlled charging for electric vehicles. Increasing capacity and transmission costs have highlighted the need to "shave the peak", and demand response, critical peak pricing, or time of use rates are dependent upon accurate and reliable meter interval data. Power quality, outage management, and distribution automation are other features that SHELD may desire in an AMI.

1.1 RFP INTENT

This document contains project background and an overview of SHELD's business, the scope of work, and general terms and conditions for this RFP. The intent of this document is to solicit a detailed proposal that meets the requirements for meters, a network communication system, and data management. It is the intent of SHELD to provide the physical resources for meter replacements and communication equipment installations, with project duration of 36 months or less. Proposers are encouraged to read the RFP completely, understand SHELD's needs thoroughly and seek appropriate clarification. Proposers are required to submit questions by **09/10/2020** for any clarification of requirements.

1.2 ABOUT SOUTH HADLEY ELECTRIC LIGHT DEPARTMENT

SHELD was established by the citizens of South Hadley in 1914 when they approved the municipal purchase of a privately-held electric company serving a limited area. Since that time, SHELD expanded electric service to nearly 8,000 homes and businesses in South Hadley, and now offers fiber internet service through our Fibersonic department. As a municipally-owned utility, SHELD is governed by a locally-elected board of commissioners under Massachusetts General Law Chapter 164 and is financially supported by customer revenues without for profit investors. Our goal of establishing an AMI system aligns with our vision statement of: *To provide innovative solutions that anticipate the evolving needs of our customers and community.*

SHELD's customer base is primarily residential, with some commercial, institutional and industrial users. The largest customer and employer in South Hadley is Mount Holyoke College. SHELD's mission is to delivery highly reliable, responsive and personal utility services at competitive rates while providing value to our community.

1.3 SERVICE TERRITORY

Note: *SHELD will share a geodatabase (all GIS facilities, asset location, etc. in Excel format) with all proponents upon signing the Notice of Intent to Submit Proposal (NOISP, Appendix A) by* ***08/17/2020.***

SHELD distributes electricity to the town of South Hadley from a single substation centrally located in town. The service territory consists of 18.4 square miles, supplied via 92 miles of overhead distribution and 27 miles of underground distribution. SHELD fully or jointly (with Verizon) owns 4,000 wood distribution poles. The distribution system is comprised of 5 circuits operating at 13.8 kV. The majority of the customers are located in the southern portion of the town.

1.4 CURRENT METER READING AND SYSTEMS

SHELD utilizes an AMR (Automatic Meter Reading) system for nearly all electric meters, with approximately two dozen meters read via phone or Ethernet. The AMR system uses Itron MV-RS with Itron ERTs in the meters. SHELD uses cycle billing with meter reads conducted on the 1st and 8th of every month, depending upon weekends and holidays. All bills cover approximately 30 days of usage. Bills are normally based on actual meter reads; bills are seldom estimated.

1.41 METERS

Legacy meters are predominately Itron, Schlumberger, Landis & Gyr, and GE. More than 95% of the meters are solid state. Nearly all the meters are single phase, with only 3.5 % being three-phase. Virtually all meters are socket mounted type. Approximately 65 customers have bi-directional meters for PV solar export.

The following chart provides an estimated breakdown of the numbers of each meter form type currently in use.

Meter Form	Number
2S	6924
12S	682
16S	181
9S	89
3S	3
5S	3
4S	1
Total	7883

1.42 BILLING SYSTEM

Our current billing and information system is SEDC UPN (Utility Power Net), and any new systems resulting from this RFP will need to seamlessly interface with it. The UPN system maintains all electric billing and account histories. It is also used to maintain all meter and transformer records. Furthermore, it is used for all fiber internet service billing.

1.43 ENGINEERING AND OPERATING SYSTEMS

At this time, SHELD does not use an outage management system (OMS), SCADA, load management, or any electric system modeling tools. Any new system resulting from this RFP should indicate what features and tools are available for engineering and operations.

2. TECHNICAL REQUIREMENTS

2.1 SINGLE PHASE AND THREE PHASE ELECTRIC METER SPECIFICATIONS

Use Appendix B for single-phase and Appendix C for three-phase meters. Indicate which attributes and features are available for each supported meter type, and/or provide any supporting information as necessary.

Also, provide the following information;

1. Meters will be installed in Massachusetts and be subject to a wide range of weather (ice, heat, snow, temperature) and environment considerations. Please provide details on the performance of meters given these details, including UV resistant covers.
2. Expected service life of meters, including any internal batteries.
3. Rate of failures for meters that have been deployed in AMI systems in the past 5 years.
4. Details of identification (barcode, labeling) to support installation and management process. This includes how a meter is identified when communicating across the network.
5. Please provide details of meters ability to support TOU (Time of Use) and CPP (Critical Peak Pricing).
6. Please provide details of the meters cyber security provisions, such as encryption.
7. Please provide details on how meter software/firmware upgrades are handled. For meters that have been in-service for 5 years or more, how many upgrades have been required?
8. Are meters from different vendors compatible with each other?
9. Please list all ANSI/UL standards the meters are in compliance with.

2.2 COMMUNICATION NETWORK SYSTEM

The town of South Hadley has topology and vegetation similar to many New England towns. The town has a land area of 18.3 sq. mi. We are seeking a resilient system that can provide security, reliability, redundancy, and accuracy. Proposed meter communication systems can include wired (fiber optic, powerline carrier, Ethernet), or wireless (licensed or unlicensed). System configuration can be mesh, point-point, point-multi-point, or any combination or hybrid. Proposals should also include consideration of any expansion of the system for smart grid applications, such as distribution automation (DA), demand side management (DSM), or conservation voltage reduction/volt-var optimization (CVR/VVO). All backhaul communications should be via SHELD's fiber optic system. It is the intent of SHELD to provide the resources to physically install devices on poles or other structures.

Proposals should include information regarding;

1. The expected and guaranteed performance values, such as interval success rate, with all components in-service.
    a. Same values as above, except with one collector/gateway out of service.
2. For RF meter endpoint proposals, the number of expected transmissions within a 24 hour period. This should include all upstream/downstream messaging.
3. Discussion of cyber security, including upgrade responsibility for security and vulnerability mitigation over the product life cycle.
4. For loss of utility electric service, does the communication system have battery back-up, and if so, for what duration.

5. For RF meter endpoint proposals, are there any "opt-out" options that do not depend upon RF transmissions for customers that may want to limit RF exposure.
6. Do collectors have any on-board storage capability, and if so, capacity.
7. Does the proposed system contain any repeaters, and if so, provide information similar to collectors, such as cyber security, battery back-up, etc.
8. How long does it take for devices to initially join the network; meters, repeaters, collectors.
9. How long does it take for devices to join the network after they have been re-energized after an extended period (assume no battery back-up, or batteries exhausted).
10. For remote disconnect (RD) meters, what is the expected time delay from when the message is sent to when the disconnect opens.
11. The RD meters may be used for manual load shedding procedures for system emergencies. Is there a limit to the number of disconnect messages that can be processed simultaneously. Would the time delay for multiple disconnects be greater than for a single disconnect.
12. Ability to read existing ERTs on legacy meters.

2.3 DATA MANAGEMENT - SYSTEM INTEGRATION – SOFTWARE AS A SERVICE

The installation of an AMI system will provide amounts of information and data that is orders of magnitude greater than what SHELD currently obtains. Our legacy systems are not designed for this large amount of data, but some of these systems may need to be maintained into the near future. Additionally, the AMI system has the ability to provide customers with useful information, as well as provide SHELD with analytics to develop programs and rate structures to manage our system. It is desired that systems be hosted off site, and be web based.

Proposals should describe;

1. How monthly usage (delivered and received) and peak demand values for each meter are obtained and imported to our legacy billing system (SEDC).
2. How meter interval data can be accessed and analyzed to;
    a. Perform transformer load management
    b. Develop TOU or CPP rates and evaluate the impact for each customer
    c. Evaluate the voltage profile of the circuit, and the impact of capacitor operations, and phase load balancing.
    d. Evaluate PV solar and other distributed resources impact on the distribution system.
    e. Evaluate the impact of 5% voltage reductions for each customer
    f. Evaluate the performance of demand response programs (electric vehicles, central AC).
3. Any web portals for customers to use, for residential and commercial/industrial/institutional customers.
4. How meter disconnects/reconnects, load limiting operations, alarm, and outage data logs can be accessed and analyzed to;
    a. Record actual customer outages and durations for regulatory reporting
    b. Record actual disconnects/reconnects for customer resolution, trending, predictive analysis, and development of intervention tools.
    c. Identify power quality issues.
5. Cyber security and customer privacy protections.

3. SYSTEM OPERATIONS AND SUPPORT REQUIREMENTS

Note: The proposal will not include installation services. SHELD intends to install all meters and field mounted infrastructure. It is expected that the proposal will include support for site selection/surveys and best practices in installation (includes training) of system hardware.

3.1 SYSTEM IMPLEMENTATION AND SUPPORT

1. Describe the proposed implementation methodology for the solution. It is SHELD's goal to have the project completed in 36 months or less after a contract is signed.
2. Provide a schedule with projected implementation timelines and key milestones. Identify all tasks to integrate the solution with SHELD systems, including hardware installation, configuration of the software, user training, testing, and cut-over to production.
3. Explain what project status reporting has been used with other similar-sized utility projects including, but not limited to, project timelines, hardware delivery updates, and network performance updates.
4. Provide recommendation for post implementation staffing for ongoing management and maintenance of the solution.
5. Provide a description of the intended support system for the proposal, including the following:
    a. Location(s) of support personnel
    b. Hours of support
    c. Organizational structure of support team(s)
    d. Support escalation process (including an organization chart with escalation paths)
    e. Support tools used (phone line only, ticket access, etc.)
    f. Any tiers (bronze, gold, so on) that can be provided as well as the recommended support level for SHELD.
6. Describe the tiered structure (if applicable) and the guaranteed time to respond to and resolve issues for each priority level.

3.2 QUALITY ASSURANCE & CHANGE MANAGEMENT

1. Provide details (workflow or description) on the company's quality assurance plan or process for the solution, including details on how your company responds to:
    a. Service/support related problems
    b. Software quality problems
2. Describe the quality management structure for inspecting and sampling the meters being proposed. Outline how quality will be achieved, controlled, assured, demonstrated and managed.
3. What information is provided and included with the delivered product, such as test reports?
4. Outline how the company controls non-conforming products and deals with nonconforming meters and shipments. Unacceptable shipments shall be marked, segregated and reported.
5. Describe the quality management structure for inspection and sampling of all other components being proposed. Outline how quality will be achieved, controlled, assured, demonstrated and managed.

3.3 TRAINING

1. Describe training documentation. Provide sample documentation.
2. Recommend the various staff positions that should be trained on the system.
3. Describe what materials are delivered for upfront training. Supply a sample training course outline (course syllabus) and material.
4. Describe best practices for ongoing training as applied at other similarly sized utilities.
5. Indicate if Web conferencing sessions and training is offered. Identify any applicable costs.

3.4 SYSTEM ACCEPTANCE

1. Describe the proposed methodology and plan for system acceptance testing.

3.5 POST IMPLEMENTATION OPERATIONS, AND SUPPORT

1. Describe the anticipated frequency of releases (major and minor), and the suggested manner in which this schedule can be managed by the utility.

2. Provide the recommended upgrade process, testing process, and versioning rollback process.
3. Indicate how many previous versions back are supported.
4. Provide a sample of release notes to understand the quality of this documentation. Provide a sample of the test scripts performed for the release
5. Please provide details on user groups. This may include details of specific forums for engaging with the user group (annual conference, local events, so on). This may include details of how the user groups support product roadmap requirements.

3.6 ADDITIONAL SERVICES

1. Provide a description of any other services that add value to the product offering.

4. LEGAL NOTICE

Pursuant to Massachusetts General Laws, Chapter 164 S56D, and Chapter 30 S39M, it is the intention of South Hadley Electric Light Department ("SHELD") to procure and deliver a proposal for:

Advanced Metering Infrastructure

Specification and proposal documents may be obtained at the SHELD office, located at 85 Main Street, South Hadley, MA 01075 or at our website, https://www.sheld.org/pages/about/rfps-specs/.

Proposals must be received **by 1:00 PM ET on 09/24/2020** and include three (3) hard copies, and one (1) electronic storage media copy. Proposals must be enclosed in a sealed envelope marked "Proposal for Advanced Metering Infrastructure", and received by SHELD, 85 Main Street, South Hadley, Massachusetts, 01075.

The South Hadley Electric Light Department may reject any or all proposals if it is in the public interest to do so.

South Hadley Electric Light Department

Sean Fitzgerald, General Manager

ADV: Hampshire Gazette
MA COMMBUYS
MA Goods and Services Bulletin

5. INSTRUCTIONS TO PROPOSERS

All proposals **must be received by 1:00 PM ET 09/24/2020** (reference Section 5.2) at SHELD offices on 85 Main St., South Hadley, Massachusetts, 01075 at which time the proposals will be publicly opened and can be reviewed by anyone present. Late proposals will not be accepted. Proposals shall be considered firm offers valid for a period of three hundred and sixty-five (365) calendar days from the proposal deadline.

5.1 TAX EXEMPT STATUS

1. SHELD is exempt from Sales and Use taxes.

5.2 PROPOSAL REQUIREMENTS

Proposals shall contain three (3) hard copies and one (1) electronic storage media copy required with the following:

1. Proposal price shall be firm and include the purchase of all metering and telecommunication equipment, freight and delivery charges to the final location.
2. The delivery point shall be SHELD's administrative office located at 85 Main Street, South Hadley, MA 01075.
3. All components and equipment provided are to be new, and the manufacturer's latest model. Any exceptions should be noted.
4. Equipment warranty information shall be included in the proposal.
5. Proposer shall complete and submit the attached Proposal Form, in Appendix D, including the following information:
    a. Information (make, model and year) on the equipment being proposal and shall include the manufacturer's literature and all warranties.
    b. An indication of whether the equipment meets all the requirements of these specifications and, if it does not, a description of any deviations from these specifications.
    c. The total firm proposal price. Detailed pricing shall be provided in a separate attachment.
    d. Estimated delivery time (in weeks or by schedule) after receipt of purchase order.
    e. Proposer's name, business address, contacts person and telephone number.
    f. Signature and title of the person responsible for submitting the proposal.
    g. Date proposal was prepared.
    h. References to prior, similar completed projects.

Please show the following information on the outside of the proposal package:

1. Proposer's name and address
2. Name of proposal
3. Proposal due date

Three (3) hard copies and one (1) electronic storage media copy must be submitted in a sealed envelope properly marked with "Advanced Metering Infrastructure Proposal" and mailed/delivered to:

Kim Mendoza
South Hadley Electric Light Department
85 Main Street
South Hadley, MA 01075

5.3 PROPOSAL SUBMITTALS

The proposal shall be brief and concise, yet sufficient in detail to allow for the thorough evaluation of the plan of work and its correlated costs. The following shall be included in the proposal:

1. Cover Letter – Please indicate the point of contact for your proposal.
2. Proposal Form – Completed Proposal Form provided in Appendix D.
3. Introduction - Describe the Proposer's understanding of SHELD's intent and reasons for doing this project.
4. Executive Summary and Solution Overview.
5. Solution Detailed Response to Section 2, Technical Requirements, and Section 3, System Operations and Support Requirements.
6. Pricing Proposal.
7. Project Plan - Provide a concise outline of each anticipated work item with milestone dates to have the project completed within 36 months, including any expected support from SHELD staff.
8. Experience and Qualifications - Outline Proposer's experience in designing, implementing, and commissioning AMI systems. Include a list of recent projects for municipal utilities, preferably in the Northeast. The list should include utility contact information.
9. Certificate on Non-Collusion (Appendix E)
10. Statement of Intent to Submit Proposal, as provided in Appendix A. Respondents must deliver the form by **8/17/20** (email or paper mail) and include the preferred point of contact for all correspondence. Upon receipt of confirmation of Intent to Submit Proposal, SHELD will share data on meter locations (reference Section 1.3).

PROPOSALS THAT DO NOT FOLLOW THE ABOVE FORMAT MAY BE REJECTED.

5.4 PRICES

All proposal prices must be firm. Submittal shall include unit and total pricing on all hardware, components, software and services.

5.5 QUESTIONS ABOUT RFP

Proposers must submit questions relating to this RFP via email to Kim Mendoza (kmendoza@sheld.org), by **09/10/2020**. All questions must be submitted in the form of a Word document, and must include the name of the company and the person submitting the questions. SHELD will supply all questions and answers to the names listed on the Notice of Intent to Submit Proposal (NOISP) no later than **09/15/2020**.

Proposers shall notify SHELD by email to kmendoza@sheld.org , if they find any discrepancies or omissions in the specifications, or if in doubt as to their meaning. If an explanation is necessary, a reply

will be made by an addendum issued to all firms who have submitted a NOISP. SHELD will not give verbal answers to any inquiries regarding the meanings of the specifications.

All requests, questions, or other communications about this RFP shall be made in writing and emailed to the RFP Designated Contact:

Kim Mendoza
South Hadley Electric Light Department
85 Main Street
South Hadley, MA, 01075

To ensure that written requests are received and answered in a timely manner, electronic mail (e-mail) correspondence is preferred, but other forms of delivery, such as postal and courier services can also be used.

5.6 CONTACT WITH EMPLOYEE(S)

Other than communications with the RFP Designated Contact, direct contact with SHELD employees on issues related to this RFP, is expressly prohibited without prior consent. Vendors who directly contact SHELD employees about this RFP risk elimination of their proposal from consideration.

5.7 PROJECT SCOPE

The Proposer needs to fully address the requirements of this RFP related to performing all required work, including site assessment, drawings and document submittals, manufacturing, testing, delivery and technical support during and after installation.

Proposers are also encouraged to include any additional items that your firm deems necessary and consistent with the intent of the project.

5.8 PROJECT SCHEDULE

SHELD desires the completion of all work related to this project in approximately 3 years from the date of an executed contract. Proposals shall take this into consideration.

5.9 SELECTION SCHEDULE DATES

Estimated schedule for completing the evaluation and selection is as follows:

1.	Issue RFP	08/03/2020
2.	Statement of Intent to Submit Proposal by	08/17/2020
3.	All Proposers Questions Submitted By	09/10/2020
4.	Answers to Questions Submitted By	09/15/2020
5.	Proposals to be Received By 1:00 PM ET	09/24/2020
6.	Proposals Public Opening 1:00 PM ET	09/24/2020
7.	Finalists Selection	10/08/2020
8.	Presentations by Finalists – Week of	10/19/2020
9.	Vendor Selection	10/30/2020

10. Contract Signed 11/13/2020
11. Project Completion 12/31/2023

All dates are subject to change.

5.10 RIGHT TO ACCEPT OR REJECT PROPOSALS

SHELD reserves the right to accept or reject proposals or portions thereof, reject all proposals, and/or waive any formalities in the process if it is deemed to be in the best interest of SHELD. Proposals received after the public opening date and time will not be accepted.

SHELD reserves the right to award this contract not necessarily to the Proposer with the lowest cost proposal, but to the Proposer which will provide the best overall match to the RFP requirements and which best serves the interest of SHELD.

SHELD reserves the right to request a formal presentation prior to final selection, and to request additional information from or about a Proposer, in addition to the information submitted with the proposal. SHELD reserves the right to accept or reject, modify or cancel in part or in its entirety, this RFP. SHELD reserves the right to waive any informalities or technical defects of the proposal as the best interests of SHELD may require. SHELD also reserves the right to reject all proposals, to make multiple awards, or to make a partial award to one or more Proposers. SHELD shall not, in any event, be liable for any expenses or costs incurred by Proposers in preparing their proposals.

5.11 EXECUTION OF CONTRACT

The successful vendor will be notified of the award of Contract in writing and shall properly and promptly execute a Contract, or make significant progress on the SHELD Contract Form, within thirty (30) days after receiving notification of the Award of the Contract.

APPENDIX A – NOTICE OF INTENT TO SUBMIT PROPOSAL

NOTE: Please complete and return this form stating your intention to submit (or not) a proposal for this RFP by **08/17/2020**. Your response will assist us in evaluating all responses for this important project and to improve our proposal solicitation and communication process.

The form should be emailed to kmendoza@sheld.org or returned to

Kim Mendoza
South Hadley Electric Light Department
85 Main Street
South Hadley, MA, 01075

Intent to Submit Proposal – Yes – No
Company Name -
Respondent's Name -
Respondent's Title -
Respondent's Signature -
Contact Information
Email -
Phone -
Address -

Appendix B - Single Phase Meters

Single Phase Meters		Standard Feature	Extra/Upgrade	Comments
Energy Registers				
Watt-hours	Delivered			
	Received			
	Net			
Volt-ampere-hours	Delivered			
	Received			
	Net			
VAR-hours	Delivered			
	Received			
	Net			
Demand Registers				
Watts	Delivered			
	Received			
	Net			
Volt-amperes	Delivered			
	Received			
	Net			
VARs	Delivered			
	Received			
	Net			
Block Demand - List the available configurable time periods				
Rolling Demand - List the available configurable time periods				
Power Quality				
Voltage Measurements	Min			
	Max			
	Avg			
Available voltage measurement time periods				
Voltage Alarms	High			
	Low			
	Sags			
	Swells			
	Neutral Unbalance			
Unbalanced Load Alarm	Percent or amps			
"Hot Socket" Alarm - Is the meter capable of measuring/detecting an overheated connection in the meter socket				
Momentary Outage/Blink Notification - Is the meter capable of alarming for momentary outages (blinks), and what parameters are configurable.				
Sustained Outage Notification - Is the meter capable of alarming for sustained outages, and what parameters are configurable.				
Outage Restoration Notification				
Other				
Remote service disconnect switch	Fully rated			
	Remote/Local reset Options			
	Service Limiting Options			
GPS location reporting				
Tamper/Tilt Alarms				
On board storage capacity, days				
Programming	Remotely			
	Locally			
	via Optical Port			
	via Wireless			
	via Other			
Expected Service Life of Meter				
Expected Service Life of Batteries, if any				

Appendix C - Three Phase Meters

3 Phase Meters		Standard Feature	Extra/Upgrade	Comments
Energy Registers				
Watt-hours	Delivered			
	Received			
	Net			
Volt-ampere-hours	Delivered			
	Received			
	Net			
VAR-hours	Delivered			
	Received			
	Net			
Demand Registers				
Watts	Delivered			
	Received			
	Net			
Volt-amperes	Delivered			
	Received			
	Net			
VARs	Delivered			
	Received			
	Net			
Block Demand - Date/time of max. List the available configurable time periods				
Rolling Demand - Date/time of max. List the available configurable time periods				
Power Quality				
Voltage Measurements, per phase	Min			
	Max			
	Avg			
Available voltage measurement time periods				
Voltage Alarms, per phase	High			
	Low			
	Sags			
	Swells			
Unbalanced Load Alarm	Percent or amps			
"Hot Socket" Alarm - Is the meter capable of measuring/detecting an overheated connection in the meter socket				
Momentary Outage/Blink Alarm - Is the meter capable of alarming for momentary outages (blinks), and what parameters are configurable.				
Sustained Outage Alarm - Is the meter capable of alarming for sustained outages, and what parameters are configurable.				
Other				
GPS Location Reporting				
Tamper/Tilt Alarms				
On board storage capacity, days				
Programming	Remotely			
	Locally			
	via Optical Port			
	via Wireless			
	via Other			
KYZ outputs available				
Multi range operating voltage 120 - 480 volts				
Expected Service Life of Meter				
Expected Service Life of Batteries, if any				

APPENDIX D – PROPOSAL FORM

Proposal Name -

Company Name -

Submitter Name -

Meters

Cost per unit for each of the following, based upon the capabilities as listed in Appendixes B and C.

Single Phase	Standard	Upgrade/Extra	Comment
Form 2S			
Form 2S (320 A)			
Form 12S			
Form 3S			
Form 4S			
Three Phase			
Form 16S			
Form 16S (320 A)			
Form 9S			
Form 5S			

Expected life of meters _____ years Expected life of batteries _____ years
Rate of Failure in the first 5 years _____
Recommended method of physical identification of meters (labeling, barcoding, etc.)

Ability of meters/system to support Time of Use (TOU) or Critical Peak Pricing (CPP) rates. Please list any electric systems where these types of rates are currently being used with data provided by these meters.

Please attach information/discussion regarding cyber security/encryption provisions for meters and meter components.

Please attach information/discussion regarding how software/firmware upgrades are handled. For meters/systems that have been in-service for 5 years or more, how many upgrades have been required?

Are meters from different manufacturers compatible? _____

Please attach a list of all standards ANSI/UL/FCC that the meters/system is in compliance with.

Please list the;

Total number of electric endpoints currently in-service in North America _____

Total number of electric systems currently in-service in North America _____

Nearest 3 electric systems (geographically) to SHELD currently in-service with contact information

Similar 3 electric systems (number of endpoints) to SHELD currently in-service with contact information

Please list the country of manufacture and/or assembly of the meters. _____

Are any components contained in the meters a product of the People's Republic of China or the Russian Federation? _____

Communication Network System

SHELD's fiber optic system will be used, at a minimum, for all backhaul communication needs, and any gateways/collectors of the proposed system will need to connect to it. The proposal should recommend the communication method to be used by the meter endpoints.

Please indicate the type of communication system proposed for the endpoints. Check all that apply.

RF

Licensed 220 MHz _____ Unlicensed 900 MHz _____ Cellular _____

Power Line Carrier PLC _____

Ethernet _____

Wi-Fi _____

Fiber Optic _____

Mesh _____ Point to Multipoint _____ Point to Point _____ Hybrid _____

Other _____

Performance values, interval success rate, meter reading reliability %, etc. for a 24-hr period.

All equipment in-service

Guaranteed Performance _____ Typical Performance _____

One gateway/collector out of service

Guaranteed Performance _____ Typical Performance _____

Please attach information/discussion regarding cyber security/encryption security provisions for the communication network system, including upgrade responsibility for security and vulnerability mitigation over the product life cycle.

For loss of utility electric service, does the communication system have battery back-up, and if so, for what duration? _____

For RF meter endpoint proposals, are there any "opt-out" options that do not depend upon RF transmissions for customers that may want to limit RF exposure. _____

Do collectors/gateways have any on-board storage capability, and if so, capacity. _____

Does the proposed system contain any repeaters, and if so, provide information similar to collectors, such as cyber security/encryption, battery back-up, etc.

_____

How long does it take for devices to initially join the network after they are powered up?

Meters _____

Collectors/Gateways _____

Repeaters _____

How long does it take for devices to join the network and report their status after a widespread power outage has been restored? Assume outage events of 25%, 50%, and 100% of endpoints and duration of 4 hours. Assume no battery back-up, or batteries exhausted.

25% Outage	50% Outage	100% Outage
Meters _____	Meters _____	Meters _____
Coll./Gateways _____	Coll./Gateways _____	Coll./Gateways _____
Repeaters _____	Repeaters _____	Repeaters _____

For remote disconnect (RD) meters, what is the expected time delay from when the message is sent to when the disconnect opens? _____

The RD meters may be used for manual load shedding procedures for system emergencies to meet ISO-NE requirements, up to 50% of total load.

Is there a limit to the number of disconnect messages that can be processed simultaneously? _____

Would the time delay for multiple disconnects be greater than for a single disconnect? _____

Is the system capable of reading ERTs in existing, legacy meters? _____

Hardware – cost per unit for each of major components of the network communication system

Gateways/collectors

Repeaters

Other

Other

Other

Design/software – Provide costs for

Initial design of the system _____

Initial licensing fees/applications _____

Initial software purchases _____

Annual hosting fees, service or maintenance costs for any of the above items _____

Please list the country of manufacture and/or assembly of the communication system equipment.

Are any components contained in the communication system equipment a product of the People's Republic of China or the Russian Federation? _____

DATA MANAGEMENT – SYSTEM INTEGRATION

Please attach a description of how monthly usage (delivered and received) and peak demand values for each meter are obtained and imported to our legacy billing system (Southeastern Data Cooperative (SEDC), Utility Power Net (UPN)).

Give examples of existing electric systems that are using interval/periodic data for;
Transformer Load Management (TLM).

Evaluating impacts due to TOU/CPP rate changes for individual customers.

Evaluating the voltage profile of a circuit, and the impacts of capacitor operation or phase balancing.

Evaluating the performance of demand response programs (EV charging, Wi-Fi thermostats, etc.)

Provide links/access to active or simulated web portals for residential and commercial customers that uses data obtained from the meter endpoints.

Describe, and show examples of data and alarm logs for;

- Remote disconnect/reconnect operations
- Power outage and restoration
- Power quality events (e.g. sags, blinks, etc.)

Describe cyber security/encryption and customer privacy protections for data collected through this system.

Please list the physical location of the primary servers used for this data and the business continuity plans for loss of the primary servers.

Please list;

- Total number of electric systems that interface with SEDC's UPN CIS/billing system _____
- List the contact information for 3 systems that are similar in size to SHELD that are using SEDC UPN

- Other CIS systems/vendors that your system has interfaced with, and the number of each

Please list the following costs;

Initial costs for system design of the proposed system _____

Initial costs for any additional features upgraded from the proposed system _____

Initial licensing fees/applications _____

Initial software purchases _____

Annual hosting fees, service or maintenance costs for any of the above items _____

Please attach information regarding how the proposed system can accommodate future applications such as; Distribution Automation (DA); Demand Side Management (DSM); Conservation voltage Reduction/Volt Var Optimization (CVR/VVO); Smart street light controls.

Implementation Support - Training

It is the intent of SHELD to complete installation of the AMI system in 36 months or less after a contract is signed. It is anticipated that SHELD will provide the physical labor to install meter endpoints, and any communication equipment to be installed on poles.

Please attach a schedule with a projected implementation timeline and key milestones.

Please attach the project staffing chart for commissioning/implementation/training, including on-site man-days expected, and off-site support resources.

Provided examples of project reporting used for other projects of similar size.

Provide a description of the intended support system for the proposal, post implementation, including the following:

Location(s) of support personnel

Hours of support

Organizational structure of support team(s)

Support escalation process (including an organization chart with escalation paths)

Support tools used (phone line only, ticket access, etc.)

Any tiers (bronze, gold, so on) that can be provided as well as the recommended support level for SHELD.

Describe the tiered structure (if applicable) and the guaranteed time to respond to and resolve issues for each priority level.

Please provide the expected amount of training required for SHELD personnel to proficiently understand and operate the system.

Are there any user groups or forums for the proposed system? _____

Please list the following costs;
Initial project management costs _____
Initial project training costs _____
Post implementation support costs _____
Post implementation training costs _____

Project Summary

Total endpoint hardware costs. Include all meter/hardware costs for the proposed system, and any increased costs for any recommended optional or upgraded features.
As proposed _____
Optional/Upgrade _____
Optional/Upgrade_____

Total communication network hardware costs. Include all the hardware costs for the proposed system, and any increased costs for any recommended optional or upgraded features.
As proposed _____
Optional/Upgrade _____
Optional/Upgrade _____

Total non-hardware costs. Include all other costs for design, development, licensing, software, training, support, hosting, etc. that are not included in the above categories.
One-time costs
- As proposed _____
- Optional/Upgrade _____
- Optional/Upgrade_____
- Optional/Upgrade _____
- Optional/Upgrade_____

Annual on-going costs
- As proposed _____
- Optional/Upgrade _____
- Optional/Upgrade_____
- Optional/Upgrade _____
- Optional/Upgrade_____

APPENDIX E – CERTIFICATE OF NON-COLLUSION

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

_____
(Signature)

_____
(Name)

_____
(Name of Business)