



# Advanced Metering Infrastructure Assessment Scope of Work, Exhibit A



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Jason Bezak, CPPB  
Procurement Agent II  
City of Port St. Lucie  
Procurement Management Department

Dear Jason,  
E Source Companies (“E Source”), the leading solver of problems facing electric, water, and gas utilities and municipalities, is pleased to submit this proposal to the City of Port St. Lucie for Advanced Metering Infrastructure Assessment.

E Source offers a broad portfolio of customer-first and technology-driven solutions to help utilities effectively manage the customer and infrastructure sides of their business reliably, efficiently, safely, and sustainably. Our Technology Planning and Implementation (TPI) Consulting Division consists of two leading AMI firms: former E Source Consulting and former Excergy Corporation. The guidance we offer helps our clients make data-driven decisions to strengthen their customer relationships, plan for tomorrow’s infrastructure needs.

I would like to highlight a few key points:

**We are vendor neutral** - We have provided program and vendor management services for projects and have worked with all major AMI vendors on behalf of our clients. While we know all the vendors and have contacts at the highest levels of their organizations, we do not associate our recommendations with a particular technology or company. We are 100% vendor agnostic and have no vendor affiliations.

**E source TPI focus is almost exclusively on AMI consulting and related technologies** - With more than 180 past and current successful client projects, we believe we have the most experience helping municipal utilities with their AMI initiatives in the country.

**We work as an extension of your staff** - Our philosophy in providing services for our clients is to work side-by-side your team providing the needed expertise and experience to achieve the most successful outcomes. We have many personnel that have worked for municipal utilities and vendors and, as such, our experience and understanding covers all sides of the table.

**Our systems knowledge is key** - Since we have detailed working knowledge and experience with all the major utility operational technology solutions, we are ideally suited to help Port St. Lucie maximize your existing and future infrastructure investments while minimizing costs.

Should you have any questions or require additional information, please feel free to contact me, at (631) 807-4063 or via email at [dale\\_pennington@esource.com](mailto:dale_pennington@esource.com). We look forward working with Port St. Lucie.

Sincerely,



Dale Pennington, President, E Source Technology,  
Planning and Implementation (TPI) Division

## Purpose

This Scope of Work (SOW) is to document the services E Source will provide Port St. Lucie to support the assessment and readiness activities associated with an Advanced Metering Infrastructure (AMI) project. There will be eight tasks of work, with each task outlined herein, including rationale, Port St. Lucie participants, and deliverables. Note that there will be some overlap of certain tasks, due to the highly synthesized nature of the overall assessment process.

The initial services requested by Port St. Lucie will focus on validating the Port St. Lucie identified needs/functions as well as identification of “items” that “... we don’t yet know that we should know”; creation of individual specifications for the software and hardware components of the proposed system; identification of a minimum of three (3) OEM or software suppliers for each component; and complete E Source’s business case/financial analysis as more fully defined in this document under Task 6.

**Other capabilities of E Source as described in the proposal and this Statement of Work describing the Tasks listed below will be completed in coordination with the Port St. Lucie Project Manager with concurrence in writing of the AMI Coordinator up to the authorized level of the Port St. Lucie purchase order with E Source.**

Tasks are enumerated as follows:

1. Project Kickoff and Mobilization
2. State of the Industry
3. Discovery
4. Utility Readiness and Gap Analysis
5. E Source Insight™ Survey
6. Business Case/Financial Analysis
7. Project Planning and Implementation
8. Project Management

## Assumptions

- Port St. Lucie will assign a Project Manager to participate in regularly scheduled status calls with the E Source Project Manager to review open issues and remove barriers to progress.
- Port St. Lucie will designate the necessary Subject Matter Experts (SMEs) from all functional teams to actively participate throughout the project.
- Port St. Lucie will have reasonable responsiveness to data requests, document or deliverables review and meeting requests.
- Work will be performed by E Source resources, either on-site or off-site in the completion of SOW deliverables.
- During on-site sessions, Port St. Lucie will provide meeting space, teleconference line, projector, and guest internet connection for all meetings.

## Project Timetable

The scope of work provided to Port St. Lucie is separated into eight distinct tasks, to be rendered within a preliminary four-month period. A high-level overview of these tasks is provided in Table 1. Due to the interdependent nature of the tasks outlined herein, it is not expected that this table will provide hard start dates for each task, but that it will provide a holistic indication of the duration and relative timeframe for each of the deliverables encompassed within each task.

Assumptions:

- Approx. 4 month timeline
- Assume approx. 20 business days/month
- Tasks will overlap so duration is not cumulative

Task ID	Task	Duration (business days)
1	Project Kickoff and Mobilization	10
2	State of the Industry	5
3	Discovery	25
4	Utility Readiness and Gap Analysis	15
5	E Source Insight Survey	30
6	Business Case / Financial Analysis	28
7	Project Planning and Implementation	10
8	Project Management	80

Figure 1 - Preliminary Project Timetable

## Project Cost Outline

The cost of the services rendered by E Source are outlined in Table 2, delineated by task. Also itemized is the total travel budget allocated to E Source for on-site tasks.

Task ID	Task	Cost (USD)
1	Project Kickoff and Mobilization	\$ 5,000
2	State of the Industry	\$ 5,000
3	Discovery	\$ 10,000
4	Utility Readiness and Gap Analysis	\$ 15,000
5	E Source Insight™ Survey	\$ 10,000
6	Business Case/Financial Analysis	\$ 15,000
7	Project Planning and Implementation	\$ 15,000
8	Project Management	\$ 10,900
N/A	Travel	\$ 10,000
<b>TOTAL</b>		<b>\$ 95,900</b>

Figure 2 - Project Cost Summary

## Task 1 – Project Kickoff and Mobilization

Prior to launching the project, E Source will work with the Port St. Lucie Project Manager (PM) to compile the internal project team org. chart that will facilitate effective communications and schedule working sessions. E Source will hold an on-site kick off meeting with the stakeholders and project team members to review the project scope, timeline, communications plan and housekeeping items. E Source will work with the Port St. Lucie PM to develop the kickoff meeting agenda and identify attendees.

During mobilization, E Source will initiate our discovery effort to compile the necessary data and information to assess the current state of utility operations and develop our analysis and recommendations. E Source will provide Port St. Lucie with a list of initial discovery questions that will be customized for each utility department. In addition, E Source will deliver the initial data requests that will feed the financial model and request previous business case results and assumptions. E Source will subsequently schedule the necessary on-site workshops to review the responses received with each respective Subject Matter Expert (SME).

***Participants:** Project Management Team, Project Steering Committee*

***Deliverables:** On-Site Agenda, Kickoff Meeting/Slide Deck, Initial Current State Discovery Questions, Initial Financial Model Data Requests*

## Task 2 – State of the Industry

The utility industry is evolving rapidly with new and exciting innovations occurring all the time, especially related to advanced metering technology. During our customized “State of the Industry” presentation, we will discuss the critical success factors and relative advantages/disadvantages of advanced metering system platforms as they relate to Port St. Lucie. Our industry experts at E Source have a comprehensive understanding of both the engineering and economic aspects of this technology.

Our expert team details key concepts underlying the current state of the advanced metering industry and important design considerations when embarking on a new technology project. We delve into the success stories of other utilities and discuss how Port St. Lucie can avoid the pitfalls. We will provide you with a comprehensive vendor overview along with explanations of how their products and system characteristics could impact Port St. Lucie’s operations and customer base.

The presentation is an interactive discussion designed to provoke thought and prompt questions. We recommend participation from stakeholders across Port St. Lucie organization as this discussion serves as a high-level training opportunity for your team.

Through our experience interacting with utilities, AMI vendors, and our own research, we have gathered a wealth of information of various AMI technologies. Our understanding provides valuable insight to the best suitable AMI technology for our client’s specific situation and needs. Provided in Figure 3 is an example knowledge capture work product of AMI solutions in a matrix form.

Water AMI Solutions										
	Aclara STAR (3300 Water MTU)	Sensus - Flexnet	Badger - Orion (BEACON)	Neptune - ARB Fixed	Iron 100W	Iron - Openway Riva	Mueller-MegaNet	Mueller-Mi-Net	RG3- Tesla 4	Metron Farnier - innov8-VN
<b>Water MIU Attributes</b>										
Water Meter Manufacturer?		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Meter to Collector (RF, PLC, Cellular, etc.)	RF	RF	RF	RF	RF	RF	RF	RF	RF	Cellular
Meter to Collector Architecture (Mesh, P2MP, Hybrid)	P2MP	P2MP	P2MP	P2MP	P2MP	P2MP	P2MP	P2MP	P2MP	P2MP
1 or 2 Way (Meter to Collector)	2	2	2	2	2	2	2	2	1 or 2	2
FCC Licensed	Y	Y	N	Y/N	N	N	Y	N	N	Y
MIU Freq (MHz)	450-470	In: 901-932 Out: 930-959	902-928	450-470 (licensed), 910-920 (non)	903-926.8	902-928	136-174	902-928	902-928	
MIU Power (Watts)	0.75	2	1	1	<1	0.66	2	1	1	
Firmware Upgradeable via Network	N	Y	Y	Y	Y	Y	N	Y	Y	Y
Typical Transmit Interval (per/day)	4	6-32	12	192	288	12	5	1	1	1
Battery/MIU Warranty Term (years)	20 Pro	10 Full, next 10 Pro	20 Pro	10 Full, next 10 Pro	20	12/20	10 Pro	10 Pro	25	20 Pro
Network Performance Guarantee			10 yr 3rd party cellular							
Data Logging	Y	Y	Y	Y	Y	Y	N	Y	Y	Y

Figure 3 - Water AMI Vendor Matrix

**Participants:** Project Management Team, Project Steering Committee

**Deliverables:** On-site Technology Workshop and Agenda, Slide Deck (including Technology and Vendor Product Overview)

### Task 3 – Discovery

Every project that we do starts with a comprehensive discovery phase. This discovery effort reveals the critical success factors and identifies the gaps and opportunities for improvement. Our team will perform a deep dive into the details of Port St. Lucie’s organization to develop the foundation for change and identify the underlying business reasons that are driving the effort. We approach the following discovery tasks through a series questions, interviews, and workshops.

- **Goals and Objectives** – Our team forms a solid foundation for success by conducting workshops with executives, stakeholders and key personnel to establish a mutual understanding of Port St. Lucie’s project goals, drivers, success factors, and risks. Our approach is designed to stimulate discussion around your goals and objectives that otherwise may have not been considered. We also work to identify potential project risks early in the process so that these risks can be addresses and mitigated.
- **Data Collection/Current State** – We will provide Port St. Lucie with a comprehensive list of data and information requests that will feed into the cost/benefit analysis underlying the business case. We examine Port St. Lucie’s current business and operations processes, practices, and personnel to identify gaps and establish a baseline for assessing advanced metering readiness. Our team comes equipped with a customized set of questions we use to collect this information through a series of on-site workshops with Port St. Lucie’s respective subject matter experts.

**Participants:** Project Management Team, Project Steering Committee (and Their Respective Departments)

**Deliverables:** On-site Goals and Objectives Workshop and Agenda, On-site Current State Workshops and Agenda, Final Current State Discovery Responses, Summary of Findings and

## **Task 4 – Utility Readiness and Gap Analysis**

We will assess the “as-is” systems/applications inventory across the organization with a focus on those that may/will be impacted by this project. In conjunction with this effort, we will also identify the gaps that will need attention to facilitate project success. E Source will review and assess the following:

- Hardware/Software
- Backup and Disaster Recovery
- Security
- Data Network Physical Diagram
- Application and network monitoring capabilities
- Integration readiness
- IT Support (skills/capabilities)

In addition to the “hard” elements of readiness, like systems and technologies, we will also perform an assessment of the “soft” elements, including personnel and staffing. Advanced reading technologies often require new skill sets and a repositioning of existing roles. Staff readiness to adapt to the new technology, and business process assessment are key to understanding the level of effort required to implement an advanced reading system, as well as to calculating benefits the system can help Port St. Lucie achieve.

***Participants:** Project Management Team, Project Steering Committee (and Their Respective Departments, with emphasis on the IT Department)*

***Deliverables:** Summary of Gap Analysis in the Assessment Report*

## **Task 5 – E Source Insight™ Survey**

E Source Insight™ is a multi-faceted, web-based assessment and analysis tool for electric, water and gas utilities. E Source Consulting integrated over 25 years of industry knowledge and management expertise to strategically develop and innovative this software solution. Insight operates on the NeuraTool platform - a powerful analysis and business process improvement engine.

E Source Insight™ allows utilities to understand their environment in a unique and unequivocally beneficial way. E Source’ flexible on-line assessment methodology allows employees to effectively communicate their detailed behaviors, perceptions, practices, and compliance with established procedures and best practices. Insight uses statistically rich graphic displays that allow utilities to analyze key performance improvement metrics at a glance in real time. The pervasive nature of the methodology allows introspection at all demographic and geographic levels of the utility. Insight utilizes a set of established industry best practices to assist utilities in learning about their current reality related to infrastructure, processes and behaviors. The surveys are recorded anonymously to encourage honest and accurate responses.

E Source Insight™ will enable Port St. Lucie to:

- Evaluate utility performance
- Determine improvement opportunities
- Identify long-term business risks



- Understand specific performance gaps
- Recognize workforce productivity based on direct employee input



Figure 4 - E Source Insight™ Application

**Participants:** All Port St. Lucie Employees Willing to Participate

**Deliverables:** Insight™ Results Analysis and Report

## Task 6 – Business Case/Financial Analysis

The cornerstone of an assessment is the cost/benefit analysis of implementing advanced metering technology/system(s). The methodology includes detailed financial consideration, determination of the Net Present Value (NPV) of the project, payback period and operational impacts. First, the E Source team will review any existing documentation that Port St. Lucie has regarding an advanced metering financial analysis including current budget estimates. Our team will work with Port St. Lucie to identify the estimated costs and potential benefits of an advanced metering implementation. The analysis will leverage information provided by Port St. Lucie, references/standards in the industry, including information and data gathered via E Source's industry experience.

E Source approaches financial analysis in a very holistic fashion, ensuring all benefits that can be realized are accounted for. We are also very conservative in the way that benefits, and costs are quantified so that the expectations are comfortable and realistic.

(\$000)	Scenario 1 Meter Only	Scenario 2 AMR	Scenario 3 AMI
Net Present Value	(\$3,239.0)	(\$3,090.6)	\$2,453.6
Capital Costs (w/out Contingency)	\$3,564.6	\$1,758.9	\$2,629.3
Operating Costs (10 Years)	\$0.0	\$1,493.1	\$1,853.9

Figure 5 - Example Business Case Scenarios with NPV

To develop a reliable cost estimate for an advanced metering implementation, we will leverage our comprehensive vendor technology pricing database and industry reports/ references. E Source will assess the costs including: capital costs (e.g. system infrastructure including equipment, hardware, software, communications; installation; professional services, etc.) and ongoing operation and maintenance cost (e.g. system operator cost, licensing, staffing, public awareness campaign, etc.)

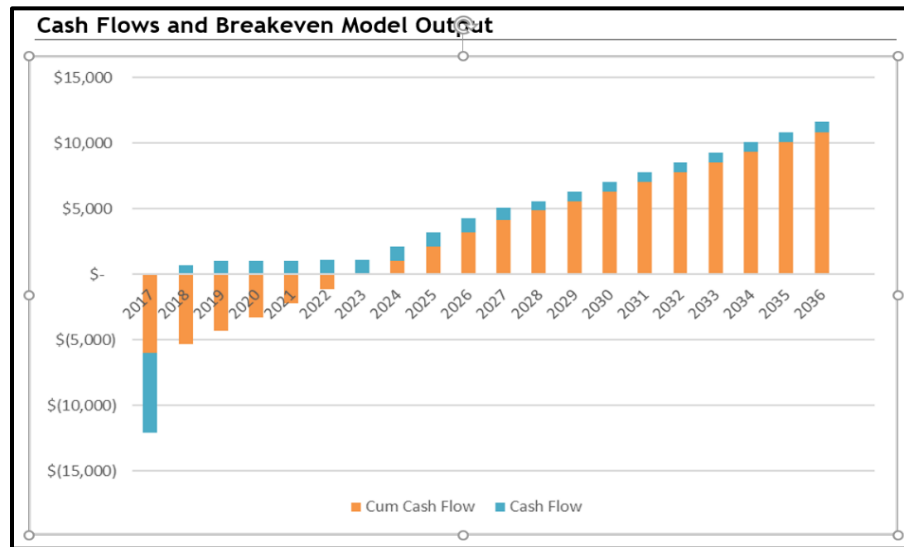


Figure 6 - Example Business Case Cash Flow

The benefits analysis identifies and quantifies the value propositions that can be realized with the successful deployment of an advanced metering system. Potential benefits to be examined will include labor savings/ efficiencies, revenue enhancement/ protection, reduced injuries, greenhouse gas reductions and more. The hard, quantitative benefits include areas of potential operational savings, revenue enhancement, and recovery of product losses. Our financial model will put a numerical value to a given decision, but our analytics team is concerned with more than just the financial outcome.

We make it a priority to examine how the financial projections and outcomes of the business case affect the day-to-day operations of Port St. Lucie and the impact on rates, fees, and charges. For this reason, data analytics and financial modeling touch every aspect of Port St. Lucie from process improvement to strategic planning, to benefits verification. Our team will analyze the interaction of people, processes, and procedures with finances and data to help Port St. Lucie maximize overall benefits.

Port St. Lucie can also realize qualitative benefits associated with an advanced metering system that may not offer a measurable financial impact but can have a significant impact on both the business and customers. While these soft benefits are not easily quantifiable, they are certainly real and achievable. E Source will explore these benefits with Port St. Lucie to make sure they are accounted for. Such benefits may include improved system planning capabilities, customer satisfaction, safety, etc.

**Participants:** Project Management Team, Operations, Customer Service, Billing, IT

**Deliverables:** Financial Model Results and Scenario Analysis (if Applicable), Business Case Results Documented in the Assessment Report (with Associated Recommendations)

## Task 7 – Project Planning and Implementation

We will collaborate with Port St. Lucie to develop the recommended implementation strategy for the AMR/AMI program. Overall, our methodology divides the project work into specific phases, each with its own measurable outcome which builds from the previous phase. By utilizing gates, we validate that Port St. Lucie realize the expected results and allow for entry into the next phase in the project.

As part of this task, we will develop the proposed project schedule based on the results/conclusions of the resulting business case. This schedule will outline the major milestones underlying the procurement and implementation phases. We will also advise on how best to structure your project team to support the procurement and implementation phases along with ongoing support once the project is complete.

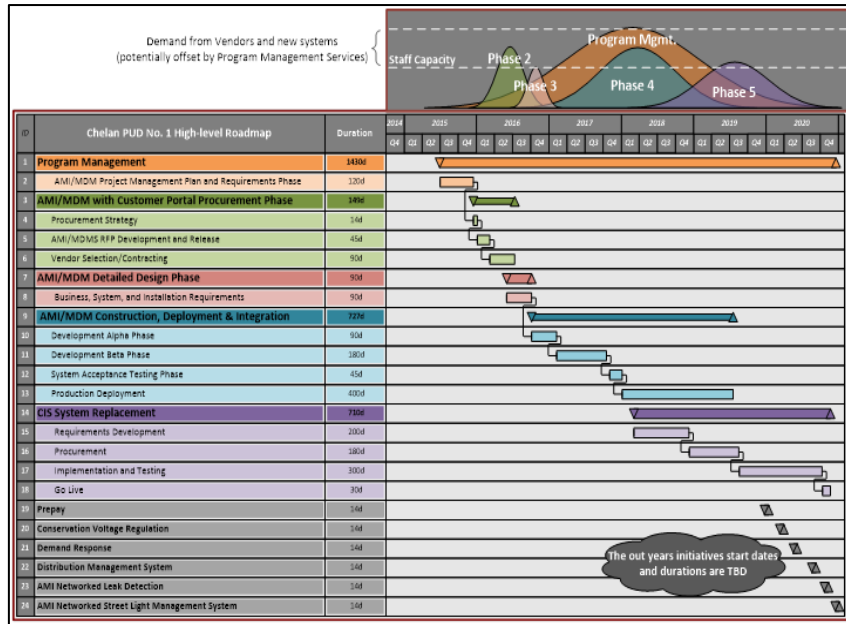


Figure 7 - Example Project Schedule

With an advanced metering implementation initiative, there are numerous operational impacts that require identification, definition and planning. We will work with Port St. Lucie early on to identify and analyze the key operational areas/functions that will be impacted so to minimize risks and eliminate any surprises in later stages of the project. These areas include:

- Human Resources – What staffing changes, if any, are necessary to support your project and ongoing operations?
- Policies – What, if any, policy changes are necessary to accommodate automated metering implementation?
- Business Process Re-Design – Which business processes will require change?
- Information Processing – What new data or reports will require your attention?
- Information Security – Will the new technology introduce new security risks or threats?

**Participants:** Project Management Team, Project Steering Committee

**Deliverables:** Project Implementation Plan

## Task 8 – Project Management

E Source will provide structured project management to ensure that all project components are executed in a timely, organized fashion and completed to the project definition and expectations. Project Management activities include maintaining the overall project schedule; work with all project participants to monitor progress and adjust the work plan as needed to stay on schedule; facilitate regular project progress and other meetings; create project status reports as required with input from Port St. Lucie; and, track project budgets. E Source will track this task order to ensure all work stays within scope and initiate change requests for approval by Port St. Lucie if required.

Managing project deliverable timeliness, quality, and project costs are measures of success and satisfaction. As such, E Source delivery methodology employs a quality monitoring process whereby senior management within the firm will monitor all timeliness, quality and project costs adherence to ensure success in all areas.

E Source will work with the Port St. Lucie PM to develop and ratify the Project Charter that will provide project governance and communicate the goals and expected activities. E Source will set up and use a Port St. Lucie specific SharePoint site for collaboration including calendaring, contacts, document repositories etc. Additionally, E Source will make use of Go-To-Meeting for remote meetings as necessary.

**Participants:** *Project Management Team*

**Deliverables:** *Project Charter, SharePoint Setup and Site Administration, Meeting Notes*