



ENWIN UTILITIES

REQUEST FOR PROPOSALS – ADVANCED METERING INFRASTRUCTURE 2.0

PROJECT INFORMATION DOCUMENT

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SECTION 1: GENERAL INFORMATION

1.1 ABOUT ENWIN UTILITIES

ENWIN Utilities Ltd. (“ENWIN” or, the “Utility”) is Windsor’s Local Distribution Company (“LDC”), responsible for the distribution of electricity and the servicing and maintenance of Windsor’s power line infrastructure. ENWIN also serves as the community’s water system operator under contract with the owner of the local water production and distribution infrastructure, the Windsor Utilities Commission (“WUC”).

1.2 ABOUT UTIL-ASSIST

ENWIN has engaged Util-Assist Inc., a leading consulting company to North American utilities, to consult on its AMI 2.0 initiative and to help administer this procurement process.

1.3 SCOPE OF THIS RFP AND PROCUREMENT

ENWIN is soliciting proposals from qualified AMI vendors for the provision of a new AMI system (referred to as “AMI 2.0” in some contexts) for its electric and water metering. Proposals must include both electric and water meter hardware and a network plus overall solution that supports metering for both commodities. Any firm that wishes to submit a proposal but does not offer meters for both commodities will need to make a primary/subcontractor arrangement with another firm so that together (as a single Respondent) they can submit a single proposal for a solution that meets both the Utility’s electric and water metering requirements. The Utility expects to contract with one entity for the procurement of its AMI 2.0 solution, and that entity would have full accountability and management responsibilities for any subcontractors that are part of its solution.

Note: To distinguish terms, any vendor participating in this RFP is referred to as a “Respondent”, and where applicable, the term includes the vendor’s proposed subcontractors. When capitalized, the term “Vendor” refers to the successful Respondent (and its subcontractors) once it is under contract to perform work on the project.

1.4 IN SCOPE

At a high level, the chosen Vendor will be responsible for provision of a next-generation AMI solution, which includes:

- An AMI network and meter hardware for electric and water metering
- Head-End System (HES) software and AMI/HES implementation and integration support to the Utility and/or its chosen systems integrator
- Professional services and related material, e.g., training services and documentation, testing services, system manuals and technical documentation, etc.
- HES hosting and support services
- Other products and services that are part of the chosen solution or that are optional but are selected to provide specific benefit to the Utility (e.g., additional software modules, sensors or other hardware, value-add services, extended warranties etc.)

1.4.1 OUT OF SCOPE/OPTIONAL ITEMS

The following items are out of scope for this RFP. However, if a Respondent offers these services and wants to propose them as optional for the Utility, the Respondent should describe and price them in its proposal for Utility consideration.

1. Installation of electric and water meters
2. Installation of pole-mounted network devices
3. Logistics and field work management or oversight
4. Overall system integration, enterprise change management, business process redesign, and coordination of other project vendors

1.4.2 ADDITIONAL NOTES

The following are additional notes regarding this RFP and the project scope and structure:

- ENWIN requires a joint electric and water AMI solution, with a single Vendor and point of contact, which is expected to deliver several benefits, including:
 - a simpler contracting process (i.e., ENWIN intends to enter a contract with one Vendor, which will have accountability for all of its own subcontractors)
 - a stronger overall implementation and deployment solution, with the AMI Vendor responsible to coordinate the delivery of electric and water meters along different timelines, and supporting the transition of water metering from the current AMR system onto the new AMI network
 - Reduced risk for the Utility, with a more efficient Vendor communication and issue resolution structure, e.g., where meter hardware return and warranty accountability rests with one entity regardless of device type
- ENWIN expects a vendor-hosted or software as a service (SaaS) model for its HES and environments. Respondents are to assume all requirements are referring to a hosted HES that will include both electric and water meters. However, the Utility will consider an on-premises HES if the Respondent does not offer a hosted HES or strongly recommends against one for a specific reason that is explained in the proposal.
- Water meters are a mandatory component of this RFP and must be included in proposals. However, ENWIN may procure water endpoints on a different or staggered schedule compared to electric meters, and reserves the right to opt for a different or separate solution for its water metering, e.g., procuring water meters from a vendor other than its electric meter provider, or retaining or upgrading its current water reading system rather than transition them onto the new AMI system.
- ENWIN is open to considering all options for water endpoints, including mechanical meters with integrated or separate AMI modules and all types of solid-state water meters. The Utility is interested in evaluating what is available and recommended as options from Respondents. Where applicable, Respondents should describe all available options for water devices, clearly describe the benefits and drawbacks of each, and if possible make a recommendation for which option is best suited for the Utility. It is worth noting that while most ENWIN service delivery points include both electric and water meters, there is a geographic portion of ENWIN's service territory that contains service delivery points that are water ONLY. The Respondent should take this into account when proposing the network / connectivity solution.
- Vendor responsibilities are outlined in the RFP requirements, but the full scope of responsibilities will be modified and finalized throughout the RFP and contracting processes. Furthermore, the Utility expects

Respondents will offer or recommend different products and services depending on their solutions, and may also propose differing project plans, implementation approaches, and related responsibilities. As such, the Utility expects Respondents will provide responses and pricing information suited to their specific solutions, which will be designed based on the Respondent's expertise and best recommendations, rather than deferring exclusively to the RFP documents to define what would constitute an ideal AMI solution for the Utility.

SECTION 2: ENWIN'S AMI 2.0 PROJECT

This section provides information on the Utility's current electric AMI, water AMR, and its initiative to procure and implement AMI 2.0.

2.1 PROJECT BACKGROUND

ENWIN is nearing a major operational milestone as its current AMI system, which has been in service since 2010 and comprises electric meters, network communication hardware, and the AMI head-end system (HES), is coming due for major upgrade or replacement. With AMI 2.0, ENWIN aims to address limitations in legacy system performance and benefit from the enhanced features, functions, flexibility, and reliability offered by next-generation solutions. ENWIN also operates an independent AMR system for water, which is also coming due for a refresh as the endpoint batteries are beginning to reach the end of their expected life. ENWIN recognizes it has a distinct opportunity to transition its water metering onto the AMI 2.0 network, but because its water meter reading does not depend on the AMI network and the water assets are not expected to fail in mass in the immediate future, ENWIN has flexibility in when it proceeds with a mass exchange of water devices. ENWIN is exploring its options and is considering a staggered mass deployment, where mass deployment of new water meters would begin and end roughly a year after the electric meter mass deployment. As part of this procurement process, the Utility hopes to gain insight and recommendations from vendors as to what approach and timeline for transitioning its water metering to AMI will be most beneficial for the Utility and its customers.

AMI is the core technology of the Utility's operations, and the implementation of AMI 2.0 is in part a necessary system refresh, but perhaps more importantly, the investment is expected to provide both immediate and future benefits to the Utility and its customers, improve operations, and provide flexibility and capability to face the challenges and opportunities that will present themselves in the years ahead. ENWIN has a strong focus on deploying an AMI 2.0 system with interoperability and scalability to accommodate up to 20 years of growth, including growth in electric and water meter populations, potential partnering agreements for shared network use, and the deployment of other sensors or connected devices in the future.

2.1.1 PRIORITIES

ENWIN's objectives and priorities for this procurement and the implementation of AMI 2.0 are to:

- Maintain or improve standards of safety and service levels, including reliability standards
- Meet or exceed Ontario Energy Board (OEB) targets for billing accuracy
- Future-proof the entire meter-to-bill solution and accommodate evolving consumer needs and resource awareness
- Support renewable and other energy sources
- Enable operational optimization and future operational needs

- Deploy a robust and versatile network with opportunities for interoperability, expansion, joint or extended uses that can maximize the value of the network and the Utility's investment

2.1.2 BENEFITS

ENWIN hopes to learn more about the capabilities and potential benefits offered by Respondent solutions, and is particularly interested in the following benefits and use cases.

- Potential savings and efficiencies enabled by improved data and meter hardware (e.g., insource or reduce MDM/R synchronization work, reduce or replace MV-90 read meters, reduce meter types in inventory)
- Improved net metering (e.g., automate/optimize processes for managing and billing solar customers)
- Improved data quality, volumes, and granularity (e.g., alarm accuracy, enhanced interval data, more detailed and timely data on energy consumption and the performance of the distribution system)
- Value-add capabilities for electricity, water, and emerging technologies to future-proof ENWIN's operations and enrich the customers' experience (e.g., integration with customer devices and assets like EVs; support for Smart City solutions)
- Remote disconnect and load limiting capabilities
- Future benefit opportunities, programs, and enhanced functions (e.g., enabled by edge computing or distributed intelligence) including:
 - advanced solar and EV awareness/support
 - enhanced detection capabilities that can mitigate theft, vandalism, equipment failures, and safety issues pertaining to both electric and water assets
 - location awareness, enhanced operational model and infrastructure load monitoring and analysis
 - load disaggregation for various conservation, operational, or customer service use cases
 - Advanced water network capabilities and increased customer awareness of precious resources

2.2 CURRENT METERING

This section outlines ENWIN's meter count and other information for Respondent consideration. Note that all quantities are estimates based on the best available data at the time of analysis

2.2.1 SUMMARY OF CURRENT ASSETS

Item	Quantity	Type
Electric Meters	~91,000	Sensus meters for 95% of single-phase applications Elster meters for all polyphase and 5% of single-phase applications
Electric Network Devices	13 devices across 6 locations	FlexNet AML network with Sensus M400 Base Stations in the field
Water Meters	~78,000	Neptune meters at 99% of locations; remainders are meters from Siemens, Badger, Elster, and Khrono.
Water Network	-	Neptune Drive-By AMR

2.2.2 ELECTRIC METERS

The Utility's meter/service types are shown in the table below. Note that figures are approximate and differ slightly from those in the Price Sheet.

Form	Phase	Class	Wires	Volts	Amps	Quantity
1S	single-phase	Class 100	2 wire	120 V	<= 100 A	70
2S	single-phase	Class 200	3 wire	240 V	<= 200 A	84,150
3S	single-phase	Class 20	3 wire	120 V	= 400 A	390
12S Network	single-phase	Class 200	3 wire	120 V	<= 200 A	2,760
9S	three-phase	Class 20	4 wire	120-480 V	>= 400 A	790
12S	three-phase	Class 200	3 wire	600 V	<= 200 A	90
16S	three-phase	Class 200	4 wire	120-480 V	<= 200 A	3,500
TOTAL:						91,750

2.2.3 WATER METERS

The Utility's water meter quantities and sizes are shown below.

Meter Size	Quantity	Meter Size	Quantity
1"+ERTS	1,190	6"	40
1/2"	1,290	8"	20
5/8"	74,130	10"	10
3/4"	370	12"	5
1.5"	490	14"	1
2"	840	16"	1
3"	130	20"	3
4"	110	Total:	78,630

Water AMI 2.0 endpoints are mandatory for this RFP and for provision by the chosen Vendor. ENWIN is open to various approaches and timelines for water device replacements and transitioning from its current AMR system onto the new AMI 2.0 network. The current water meters are read using AMR drive-by, and the devices themselves have more useful and book life left in them than the electric meters. As such, ENWIN expects its water and electric deployments to be staggered, with mass water exchanges beginning and ending about a year after the electric mass deployment.

ENWIN is open to all device types available from Respondents (e.g., modules, mechanical meters with modules, solid-state meters), but does not yet have specific use cases it is seeking for water AMI, and recognizes the challenges of justifying the most advanced water devices given their cost to benefit ratio. Respondents are to provide information for all available or recommended water devices in their proposals and Price Sheets for Utility consideration, and the Utility welcomes insight and recommendations from Respondents regarding which devices it should procure, and an overall water AMI implementation strategy or plan.

Most service delivery points include both electric and water meters, to enable a common communication solution. There is, however, a specific geographic area within the service territory that has only water meters, and the Utility's expectation is that these meters will be able to leverage the AMI solution without relying on nearby electric meters for communication. Note that all ENWIN's water customers must have the same capabilities, so these locations cannot

receive water meters that are less capable than those deployed anywhere else. A map of this water-only territory as well as coordinates for the water meters outside of ENWIN's electric service boundary are included in the RFP documents in the following appendices:

- ENWIN AMI RFP - Appendix T - Coordinates of Water Meters Outside Electric Service Boundary (xlsx)
- ENWIN AMI RFP - Appendix U - Map of Water Meters Outside Electric Service Boundary (pdf)

2.2.4 ASSET DATA AND GPS LOCATIONS

To assist Respondents in creating network designs/studies and meter deployment recommendations for submission with proposals, the Utility has included asset location data in the RFP package in MS Excel workbooks containing:

- Electric meter location coordinates
- Water meter location coordinates
- Location and height data for Utility-owned poles
- Location coordinates for water meters outside the electric service boundary

Note there may be minor discrepancies between meter quantities shown in the asset data versus other RFP documents, because the counts vary depending on the data sources, completeness, and dates of extraction.

2.3 ENWIN SYSTEMS

The table below shows ENWIN's current systems. The Utility is interested in Respondent experience and recommendations for integrating the proposed HES with these systems, and for how data should flow and be managed from the AMI and within the system and IT environment.

System	Current Solution	Notes
Electric Metering (AMI)	Sensus FlexNet	Vendor-hosted system, with Regional Network Interface (RNI) v4.4.1. Deployed in 2010.
Water Metering (AMR)	Neptune Technologies	Drive-by system; read monthly
GS>50 Metering	MV-90	Utilismart interrogates wholesale market meters and administers customer portal AMI 2.0 meters could replace MV-90 meters, but Utilismart services would still be needed for General Service > 50 and large use customers.
IESO Wholesale Market Metering	MV-90	MV-90 meters will need to remain for wholesale metering
Operational Data Store (ODS)	MeterSense	Subject to review for future suitability
CIS	NorthStar	System review scheduled for 2028
OMS	Responder	Under review – tentative upgrade 2025 - 2027
Customer Portal	myENWIN	Portal for small commercial and residential customers to view electricity usage and monthly water usage. Built on the London Hydro system.
Mobile Workforce Management	MCare	Potential for consolidation with an enterprise-wide WMS
GIS	ESRI/ArcFM	Upgrade to ESRI ArcGIS Utility Network planned for 2026
Asset Management	SAP	-

System	Current Solution	Notes
System Planning	CYME	-
Transformer Metering Analysis	Grid 20/20	-

2.4 TENTATIVE AMI PROJECT TIMELINE

A high-level tentative timeline for the Utility's AMI 2.0 implementation is outlined in this section. The provided timelines are to serve as an approximate guideline/starting point for further development and as reference for Respondent project plans, resource plans, and pricing. The tasks, dates, and durations are subject to change from ongoing project planning as well as Respondent recommendations. ENWIN expects different Respondents may have different deployment recommendations, but the Utility has developed two mass deployment timelines for which Respondents must provide pricing.

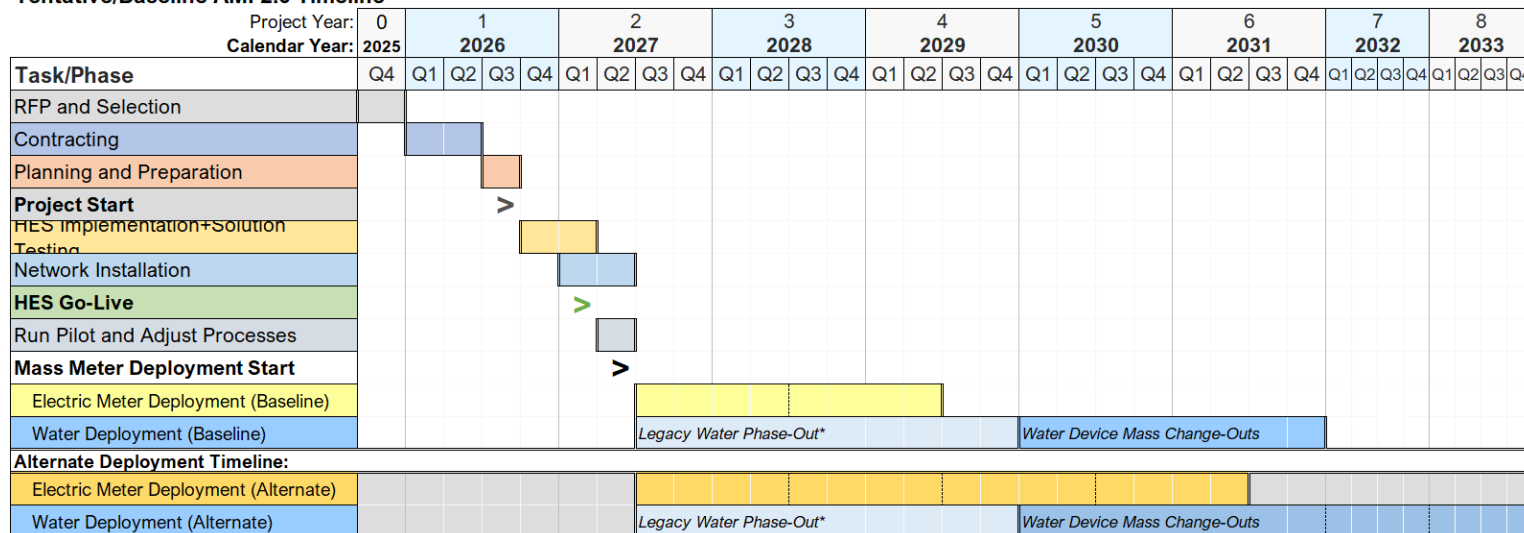
2.4.1 MASS DEPLOYMENT TIMELINE OPTIONS

For the purposes of this RFP, ENWIN is evaluating two AMI 2.0 mass meter deployment durations:

1. Two-year mass deployment (the baseline scenario)
2. Four-year mass deployment (alternate scenario)

These scenarios are shown in the graphic below. Note that the 'two' and 'four' year designations refer to the duration of the electric mass meter deployment only, and not the overall project duration.

Tentative/Baseline AMI 2.0 Timeline



***Legacy Water Phase-Out:** The Utility expects there will be a legacy water device phase-out period leading up to mass water deployment, when it will no longer make sense to install NOS (New Old Stock) AMR water devices for new buildings or as replacements when current devices or batteries fail. Instead, the Utility would install AMI 2.0 devices in these circumstances. It is expected that these installed meters could operate in AMR mode until such time that network and/or neighboring electric meters could support AMI communications. The Utility expects Respondents will propose a cost-effective water upgrade or transition plan that can minimize disruptions to customers and Utility operations and maintain current billing read success rates.

In their proposals, Respondents are to provide a project plan/timeline with greater detail and adjusted tasks suited to the proposed solution and recommended implementation approach (an editable version of the above timeline can be

found in the Price Sheet workbook). The Utility is open to input and recommendations from Respondents on how the deployment timeline should be modified, but for evaluation and comparative analysis, Respondents must provide project plans (and pricing) that use the baseline mass deployment duration of two years. The Price Sheet also has separate tabs and professional service pricing tables for the Respondent to specify different professional services costs to match each timeline. Respondents must clearly identify any other costs or amounts that are subject to change depending on the duration of the meter deployment.

2.4.2 BASELINE SCENARIO

The Utility has identified the two-year electric mass deployment timeline as a likely baseline scenario that would minimize vendor and project carrying costs and the time during which the Utility would have to undertake upgrades to the existing system or to operate both the old and new AMI systems and networks simultaneously. While recognizing the benefits of upgrading or replacing its AMI as quickly as possible, the Utility also needs to determine how to best manage the large capital expenses of meter purchase and installation and assess its capacity to support a rapid AMI 2.0 implementation and the associated operational and organizational changes.

The two-year baseline deployment scenario includes approximately 9-12 months for HES upgrade or implementation, network installation, deployment planning, and solution testing, followed by two years of electric meter installations. The water meter mass deployment is also planned to take place over two years, but it would be offset and independent from the electric deployment, tentatively scheduled to start one year after the electric deployment and to conclude one year after electric mass meter exchanges are complete.

2.4.3 PILOT

The Utility anticipates performing a pilot installation of one or more network devices and a limited number of electric and water meters and may also be interested in running a pilot for one or more enhanced functions available from the Respondent. The goal will be to test all meter installation types, work processes (both the Utility's and any applicable vendors'), deployment-related integrations and data interfaces, etc. so they can be refined or adjusted as needed before wide scale use during mass deployment.

The Utility recognizes that different Respondents will have different recommendations regarding a pilot, and the RFP Requirements Workbook has requirements asking for Respondent recommendations on variables including:

- What should be included/tested in a pilot for the proposed solution (or if one is recommended at all)
- How many meters and network devices to include in the pilot and what tools to test
- Location and timing of the pilot and which resources/entities on the project should participate and to what level

SECTION 3: ADDITIONAL PARTICIPANT

As described in Section 1.4 of the RFP Document and Instructions, the terms and conditions of the Agreement resulting from this RFP may be extended to the Additional Participant, E.L.K. Energy.

3.1 BACKGROUND

E.L.K. Energy is a Local Distribution Company that services the communities of Belle River, Comber, Cottam, Essex, Harrow and Kingsville in Ontario, Canada. With a peak load of 65 megawatts, we deliver a safe, reliable and efficient

supply of electricity to over 12,600 customers from the residential, commercial and industrial sectors, through over 168 kilometres of overhead and underground cables, spanning 23 square kilometres of service territory.

3.2 CUSTOMER INFORMATION

Customer Rate Classifications	2024 - No. of Customers/Connections
Customers:	ELK
Residential	11326
GS < 50kW	1365
GS ≥ 50kW	93
Large User	0
Total Customers	12784