

Request for Proposal (RFP)

Commodity/Service Required:	Implementation of Software for Municipal Heating System Modelling
Type of Procurement:	Purchase order
Type of Contract:	Fixed price
Term of Contract:	approximately up to 6 months after contract award
This Procurement supports:	USAID “Municipal Energy Reform Project in Ukraine”
Submit Proposal to:	Procurement@merp.org.ua
Date of Issue of RFP:	07/19/2018
Date Questions from Supplier Due:	07/27/2018, 17:00 Kyiv time,
Date Proposal Due:	08/03/2018, 17:00 Kyiv time
Approximate Date Purchase Order Issued to Successful Bidder(s):	08/27/2018

Method of Submittal:	
Respond via e-mail with attached document in MS Word / pdf format (please, do not archive attachments) before the date specified for the receipt of offers. Proposal must have your company logo, signed, stamped and dated. The Bidder/Seller agrees to hold the prices in its offer firm for 90 days from the date specified for the receipt of offers, unless another time is specified in the addendum of the RFP.	
Solicitation Number:	RFP-RTI-MERP/01-2018

Attachments to RFP:

1. Attachment “A” – Specifications
2. Attachment “B” – Instructions to Bidders/Sellers
3. All PO Terms and Conditions are listed on our website at forth at: <http://www.rti.org/POterms>, [http://www.rti.org/files/PO FAR Clauses.pdf](http://www.rti.org/files/PO_FAR_Clauses.pdf) or for commercial items: [http://www.rti.org/files/PO FAR Clauses Commercial Items.pdf](http://www.rti.org/files/PO_FAR_Clauses_Commercial_Items.pdf) (hereinafter the “Terms”). Supplier’s delivery of products, performance of services, or issuance of invoices in connection with this purchase order establishes Supplier’s agreement to the Terms. The Terms may only be modified in writing signed by both parties.

All bidders/sellers are responsible to carefully review each attachment and follow any instructions that may be relevant to this procurement.

Attachment A

Commodity Specifications or Statement of Work

Statement of Work

Description of Activity/Service:

Implementation of Software for Municipal Heating System Modelling

1. Objective, Tasks and Object for Software Implementation

1.1 Objective

The objective of this assignment is to assist two district heating companies in the cities of Kyiv and in Bila Tserkva to improve operation of their respective systems by providing them with computer based hydraulic modeling software and related technical assistance with system model population, calibration and use, including training of the utility staff on effective use of the model for system management, optimization, prioritizing investments, and for overall improvements of the system operation. Selected Supplier will be requested to provide software with adequate capabilities, technical assistance for software installation, sufficient training of the utility staff, and maintenance.

1.2 Tasks and Object for Software Implementation

Software will be used in two locations with different technical parameters (see section 6), and each package may have different required capability (due to sizes, topography, configuration of both systems) and will be licensed separately for each location. However, general software properties and performance requirements apply for both.

Software must allow creation of a geo-information system of Kyiv and Bila Tserkva district heating networks, including optimization of heating systems operation, to ensure creation of the electronic registry and electronic model of the heat networks. Software must be capable of creating model of the entire existing district heating system, and potential development of system expansion, and serve as an effective tool for optimization of the system based on thermal and hydraulic conditions parameters. Software must be capable of the following:

- Creation of the municipal electronic scheme of the existing and perspective heat networks and objects in the heat supply system tied to the city topography;
- Modelling optimization of the existing heating system (optimization of thermohydraulic modes, modelling of heat load re-distribution between sources, identifying optimal parameters of the heat networks in the process of design and reconstruction, etc.);
- Modelling of perspective options for the heating system development (connection of the new and reconstruction of the existing heat energy sources, heat load re-distribution between sources, identifying possibility of connection of the new heat energy consumers, identifying optimal options for high-quality and reliable heat supply for the new consumers, etc.);
- Operational modelling for heat energy supply to the consumers in emergency situations;
- Obtaining information, references, reports on the municipal heat supply system as a whole and on its separate elements;
- Selection of optimal equipment parameters and operational modes (schedules), testing technical solutions on modernization of the heating networks; and
- Support of automatic data exchange and possibility of integration with the components of technological process control systems and heat metering systems.

2. Software Capability and Specific Requirements

Software must have the following capabilities and must address the requirements as outlined in this section.

2.1 General Requirements

The software should allow for:

1. Support for connection between heat network elements;
2. Reflection and saving of updated information on graphical objects in vector format;
3. Support of bitmap data;
4. Support of text data;
5. Entering and saving of attribution data on all objects of the heat supply system;
6. Technical modelling of the heat network;
7. Data administration – adding new users under the given license, providing or inactivation of different access level to the users (read only, editing), general software control and control over levels of access to information, control of connections;
8. Expansion through adding new modules in the future (for example, dispatching or billing) or editing of the existing modules (change of indicators);
9. Scaling – possibility of electronic model construction simultaneously in several sections of the heat networks, of development and further aggregation of large arrays of geoinformation data;
10. Registration of user actions;
11. Archiving and reserve data retention; and
12. Software interface must support English language and have possibility of adaptation – creation of interface in Ukrainian.

Information on the heating system objects must be organized irrespective of their graphical representation, but their graphic symbols should not contradict information filling of these objects. The software must include templates for the characteristics of the heating system objects (for example, pipeline materials, heat supply source equipment, pump equipment, etc.), and allow for expansion of such templates, their editing/filling, i.e. creation of the objects reference catalogues. The software should be able to support a single, current address database in accordance with the existing list of municipal names in the heat energy metering system.

The software should be multi-user and provide the opportunity to work simultaneously with the data of several users. The Supplier should specify maximum number of users for the software.

The software must support the relevant databases and have a client-server architecture (Intranet and Internet).

All the basic software components should not be created, but used in the form of licenses for standard industrial solutions. In the case of software supply, the Supplier must provide the licensing documents confirming the legality of the use of such software by the Customer. The licensing should be not limited in time.

The terms of licensing should allow for free of charge licenses transfer from RTI (Customer) to utility companies.

2.2 Requirements to Structure

The client part of the software must run under control of Microsoft Windows operating system.

Data exchange with the servers, data processing and presentation (rendering) on user side, must be performed in the right form and in a timely fashion. The Vendor should specify (estimate) target processing time depending on the used hardware components and the approximate size of the databases or number of objects (as provided in Section 6 of this SOW). The target time of rendering in seconds should be provided for minimal and optimal hardware configurations.

Software should be user friendly with at least the following features:

- Graphical user interface allowing model inputs, additions, and changes to the data, and must provide for display of operating parameters;
- Capability to import from and export to MS Excel file;

- Capability to import data from GIS or any SQL database.

The software should include, but not be limited to the following independent modules:

1. Data input (with perspective of automated collection);
2. Keeping, archiving, export/import of data;
3. Thermohydraulic calculations and modelling;
4. Search and formation of the reports;
5. Data output to high aspect ratio displays, and to mobile devices (like tablets);
6. Module for analysis of switching on heat networks – modeling of switching impact, in order to find the nearest shut-off valve, which allows to disconnect, for example, in emergency situations the necessary element of the heat network (section, consumer or a district of heat supply) from the source of heat energy, analysis of changes in the system of heat supply;
7. Failure and maintenance module – possibility to maintain accident statistics;
8. Module of financial calculations – financial and economic model of technical solutions to substantiate measures for planning investments in case of expansion or reconstruction of the heat network, as well as connection of the new consumers (for the future).
9. Notification module – possibility to inform the operators, attendants and users through notifications using various communication methods (for example: SMS, Viber, email) and with different levels of importance (emergency and informational).

2.3 Requirements to Software Functions

1. Availability of a tool for graphic display of the heat supply system objects on a large-scale terrestrial plan with ties to the topographic basis and map data;
2. Availability of necessary heat supply system objects (sources of heat energy, sections of heat networks, heat chambers, pumping stations, central and individual heat substations, consumer inlets);
3. Availability of the editing function for the existing heat supply scheme with possibility of displaying both available and perspective data for the purpose of modeling the perspective heat energy consumption;
4. Availability of the editing function for the fields of the databases of the heating system objects to create an information and reference system with ability to integrate text documents (for example, Microsoft Word), spreadsheets (for example, Microsoft Excel), graphic editor drawings (for example, AutoCAD) and digital images;
5. Availability of the group change function in the database of necessary parameters of the heat supply system objects according to identified criteria in order to model the necessary operating modes;
6. Availability of the function of export or import of graphic information into the formats of the most common geoinformation systems or automated design systems;
7. Availability of the function of export of the required attribute data on the heat supply system objects in the standard spreadsheets formats;
8. Availability of the function of displaying the necessary parameters of the database of the heating system objects on the general map with the scheme of heat networks (for example, the length and diameter of the heat network section);
9. Availability of the function of selection and/or addition of various coordinate systems. Mainly, the most common coordinate systems are needed: WGS 84 – global system, USK 2000 – the Ukrainian coordinate system;
10. Availability of a thematic coloring of the heat supply system objects;
11. Availability of the function of creation and printing of the operational or technological scheme of the heat supply system objects, in which elements of the heat network are represented by

the non-scale symbols and connected with the general scale map with the scheme of heat networks (for example, the scheme of the heat chamber with the installed shut-off valves).

12. Possibility of thermohydraulic calculations of the heat supply system.
13. Possibility of constructing a Piezometric graph for graphical representation of the results of hydraulic calculation.
14. Possibility of determining the minimum required temperature of the heat carrier at the outlet from the source, to ensure the estimated indoor air temperature for the consumers, as well as support for different temperature charts during heat network calculations.
15. Function of calculation of heat losses through pipeline insulation;
16. Availability of calculation of heat network transmission capacity in order to determine the maximum possible heat carrier consumption which can be connected in the units or in the heat network sections for providing the estimated amount of water and heat energy to the customers, with the necessary placed pressure, for example, for the case of connection to the district heat supply sites of the perspective development; and
17. Availability in the calculation module of the schemes for connection of the central heat substations (CHS) and consumers widespread in the heat supply systems of Ukraine (mixed, parallel, sequential connection schemes).

2.4 Requirements to Information Protection

1. The software should be protected against unauthorized access. Both software and hardware protection is allowed;
2. Possible access to the reference information should only be supported at the lowest access level – “read only”. The information contained in the database should be closed for reading only with standard programs and tools;
3. The software should provide a mechanism for data preservation in case of their loss in the process of editing (automatic saving). And also the mechanism of data duplication is required to protect against loss of information in cases of hardware failure;
4. The software should provide full recovery after emergencies, hardware failures, hacker attacks, etc.

2.5 Requirements to Documentation

Documentation to the software should be written in English and optionally – in Ukrainian.

Documentation to the software should include: a) User manuals for the software administrator; b) Instruction for use for the operators.

3. Operation

It is expected that after a proper level of training, the model will be populated and operated by the technical personnel of the utility.

4. Guarantees

The supplier is required to provide guaranty of highest quality. In case of required update due to software error, supplier will provide software update including required technical assistance free of charge for the duration of maintenance period. Minimum of one year of maintenance must be included in the cost of the license.

5. Technical Support

5.1 Training

For software implementation, the Supplier shall conduct training for up to 10 experts in each utility (Ukraine) as identified by MERP and utility management of the CU “KyivTeploEnergo” and utility of Bila Tserkva.

Supplier will develop detailed training process agenda, venue and logistic requirements and will obtain utility management concurrence. Training content must consider the characteristic of the

system of respective utilities (size, complexity, etc.), but will cover all software modules and capabilities.

Supplier may be required to facilitate visit of the utility experts (from Kyiv and Bila Tserkva) and MERP representatives to an organization which is using the proposed software in their system which would provide opportunity for the utility experts and MERP representatives to see the system in practical, real application, thus advancing their understanding of its use and benefits. The Supplier will not cover cost of this visit for the travelers.

5.2 System Model Development (Population by Data)

After the completion of training of the utility personnel, supplier's expert will continue working with the utility team, and will actively assist with the population of the model with specific technical data through "hands-on" involvement, solving problems and by responding to the questions. Supplier will use their previous experience with this process and will make proposal as per time required for this effort. After the initial on-site activity, supplier's expert must be available for technical assistance remotely, either vial calls, emails or by other means.

5.3 Technical Support

Following the completion of the model population, supplier must assist the utility staff with model "debugging", calibration and overall test of performance and quality. Supplier's experts must provide hands-on training of the utility staff with system model operation and demonstrate and train on all model capabilities. After completion of the training phase, supplier's experts must be available for remote support during the 12 months period following the successful implementation of the software model.

5.4 Technical assistance

The supplier must provide technical support for the software for 6 months following the completion of installation. The technical support beyond this time will be subject to relevant utility company decision. Annual maintenance program contract for periods after that must be negotiated outside of this activity.

For efficient interaction of the Supplier with the Customer in the process of implementation, the service level agreement (SLA) should be developed.

6. Technical parameters of the District Heating Systems (preliminary values)

6.1. Kyiv

- Installed heat capacity – 8,867.276 Gcal/h.
- Productive heat energy supply – 8,443,210.59 Gcal/year.
- Number of sources – 187 pcs, including CHPs.
- Number of heating districts – 9 RTM (District Heat Networks).
- Length of heat networks in double-pipe measurement – 2,707.753 km, including:
 - main – 914.165 km;
 - distribution – 1,297.445 km;
 - Hot water supply (HWS) networks – 495.648 km.
- Number of heat substations – 9,677 pcs.

6.2 Bila Tserkva

- Installed heat capacity – 581.833 Gcal/h.
- Productive heat energy supply – 880,760 Gcal/year.
- Number of sources – 42 and CHP.
- Length of heat networks in double pipe measurement – 290.79 km.
- Number of heat substations – 41 CHS (central) and 1437 HIS (individual).



Pricing

Pricing should be provided separately for Kyiv and Bila Tserkva cities.

All bids have to be in US Dollars.

Pricing for Kyiv (10 users)

Item #	Description of Preferred Commodity or Services Specifications	Quantity	Unit Fixed Price (Each)	Total Fixed Price (Each)
1	Software product			
2	Each additional license			
3	Technical support:			
3.1	Training			
3.2	System Model Development			
3.3	Technical Support			
3.4	Technical Assistance			
Total Value, USD				

Pricing for Bila Tserkva (5 users)

Item #	Description of Preferred Commodity or Services Specifications	Quantity	Unit Fixed Price (Each)	Total Fixed Price (Each)
1	Software product			
2	Each additional license			
3	Technical support:			
3.1	Training			
3.2	System Model Development			
3.3	Technical Support			
3.4	Technical Assistance			
Total Value, USD				

By signing this attachment, the bidder confirms he has a complete understanding of the specifications and fully intends to deliver items that comply with the above listed specifications.

Signature:

Title:

Date:

Attachment “B” Instructions to Bidders/Sellers

1. **Procurement Narrative Description:** The Buyer (RTI) intends to purchase commodities and/or services identified in Attachment A. The Buyer intends to purchase the quantities (for commodities) and/or services (based on deliverables identified in a Statement of Work). The term of the Ordering Agreement shall be from Award Date to the Delivery date of the Offeror unless extended by mutual agreement of the parties. The Buyer intends to award to a single “approved” supplier based on conformance to the listed specifications, the ability to service this contract, and selling price. If an Ordering Agreement is established as a result of this RFP, supplier understands that quantities indicated in the specifications (Attachment A) are an estimate only and RTI does not guarantee the purchase quantity of any item listed.

2. **Procuring Activity:** This procurement will be made by **Research Triangle Institute (RTI International)**, located at

USAID “Municipal Energy Reform Project in Ukraine”, Research Triangle Institute (RTI)
9a, Tolstoho Street, Ground Floor Kyiv 01004, Ukraine

who has a purchase requirement in support of a project funded by

United States Agency for International Development (USAID)

RTI shall award the initial quantities and/or services and any option quantities (if exercised by RTI) to Seller by a properly executed Purchase Order as set forth within the terms of this properly executed agreement.

3. **Proposal Requirements.** All Sellers will submit a proposal which contains offers for all items and options included in this RFP. All information presented in the Sellers proposals will be considered during RTI’s evaluation. Failure to submit the information required in this RFP may result in Seller’s offer being deemed non-responsive. Sellers are responsible for submitting offers, and any modifications, revisions, or withdrawals, so as to reach RTI’s office designated in the RFP by the time and date specified in the RFP. Any offer, modification, revision, or withdrawal of an offer received at the RTI office designated in the RFP after the exact time specified for receipt of offers is “late” and may not be considered at the discretion of the RTI Procurement Officer. The Seller’s proposal shall include the following:
 - (a) The solicitation number: **RFP-RTI-MERP/01-2018**
 - (b) The date and time submitted:
 - (c) The name, address, and telephone number of the seller (bidder) and authorized signature of same:
 - (d) Validity period of Proposal: 90 days
 - (e) Technical proposal requirements:
 - The supplier should provide information on:
 - Proposed software and describe if and how it complies with technical requirements/SOW;
 - Technical approach to implementation, including installation, training and support to initial data entry;

- Overview of project management resources and team members who will be involved in software deployment and other activities:
 - Names, background, and experience of all proposed team members;
 - CVs of proposed project leads.
- Overview of technical support (SLA example with estimated response time, schedule support, etc), which can be provided in the future (beyond RTI subcontract SOW requirements).

Delivery schedule

Supplier should provide implementation schedule covering software installation, training, population by data, technical support and technical assistance to initial data entry and other as required under SOW. The following table format is provided as an example:

Project													
Deliverabl	Week 1	2	3	4	5	6	7	8	9	10	11	...	Comments
Step I	Activity												

Demonstration version

Supplier should provide access to demonstration version of working software to estimate package functionality and usability.

- (f) Terms of warranty describing what and how the warranties will be serviced.
- (g) Special pricing instructions: Price and any discount terms or special requirements or terms (special note: pricing must include guaranteed firm fixed prices for items requested.
- (h) Payment address or instructions (if different from mailing address)
- (i) Acknowledgment of solicitation amendments (if any)
- (j) Past performance information
 The Supplier shall provide:
 List of projects completed/companies using Supplier software for purposes outlined in SOW and:
 - web links to relevant projects or utility companies as appropriate;

- at least two positive written references from DH utility companies currently utilizing software (including points of contact with telephone numbers, and other relevant information).

(k) **Special Note:** *The Seller, by his response to this RFP and accompanying signatures, confirms that the terms and conditions associated with this RFP document have been agreed to and all of its attachments have been carefully read and understood and all related questions answered.*

4. **Forms:** Sellers (potential bidders or suppliers) must record their pricing utilizing the format found on Attachment “A”. Sellers must sign the single hardcopy submitted and send to address listed on the cover page of this RFP.
5. **Questions Concerning the Procurement.** All questions in regards to this RFP to be directed to at this email address:

procurement@merp.org.ua

The cut-off date for questions is

07/27/2018 17:00 Kyiv time

6. **Notifications and Deliveries:** Time is of the essence for this procurement. Seller shall deliver the items or services no later than the dates set forth in the contract that will be agreed by both parties as a result of this RFP. The Seller shall immediately contact the Buyer’s Procurement Officer if the specifications, availability, or the delivery schedule(s) changes. Exceptional delays will result in financial penalties being imposed of Seller.
7. **Documentation:** The following documents will be required for payment for each item:
 - (a) A detailed invoice listing Purchase Order Number, Bank information with wiring instructions (when applicable)
 - (b) Packing List
 - (c) All relevant product/service documentation (manuals, warranty doc, certificate of analysis, etc.)
8. **Payment Terms:** Refer to RTI purchase order terms and conditions found in www.rti.org/poterm, <http://www.rti.org/POterms>, http://www.rti.org/files/PO_FAR_Clauses.pdf, or [http://www.rti.org/files/PO_FAR_Clauses Commercial Items.pdf](http://www.rti.org/files/PO_FAR_Clauses_Commercial_Items.pdf). Payment can be made via wire transfer or other acceptable form. Sellers may propose alternative payment terms and they will be considered in the evaluation process.
9. **Alternative Proposals:** Sellers are permitted to offer “alternatives” should they not be able to meet the listed requirements. Any alternative proposals shall still satisfy the requirements set forth in Attachment A Specifications.
10. **Inspection Process:** Each item shall be inspected prior to final acceptance of the item. All significant discrepancies, shortages, and/or faults must be satisfactorily corrected and satisfactorily documented prior to delivery and release of payment.
11. **Evaluation and Award Process:** The RTI Procurement Officer will award an agreement contract resulting from this solicitation to the responsible Seller (bidder) whose offer conforms to the RFP will be most advantageous to RTI, price and other factors considered. The award

will be made to the Seller representing the **best value** to the project and to RTI. For the purpose of this RFP, price, delivery, technical and past performance are of equal importance for the purposes of evaluating, and selecting the “best value” awardee. RTI intends to evaluate offers and award an Agreement without discussions with Sellers. Therefore, the Seller’s initial offer should contain the Seller’s best terms from a price and technical standpoint. However, RTI reserves the right to conduct discussions if later determined by the RTI Procurement Officer to be necessary.

Supplier shall confirm his availability to demonstrate the proposed software in working, if Buyer provides such a request. Supplier should provide the demonstration within five calendar days after such a request is placed by Buyer. Such a demonstration of proposed software shall not mean that Buyer must proceed with the purchase in any way.

The evaluation factors will be comprised of the following criteria:

(a) PRICE – Maximum Weight – 35 Points

Lowest evaluated ceiling price (inclusive of option quantities).

(b) DELIVERY – Maximum Weight – 10 Points

Seller provides the most advantageous delivery schedule.

(c) TECHNICAL – Maximum Weight – 35 Points

- Software complies or exceeds technical requirements stated in SOW described in RFP Attachment A.
- Technical approach to software implementation
- Managerial and technical capacity of Supplier

(d) PAST PERFORMANCE – Maximum Weight – 20 Points

Seller can demonstrate his/her capability and resources to provide the items/services requested in this solicitation in a timely and responsive manner.

Total weightage – 100 Points

12. **Award Notice.** A written notice of award or acceptance of an offer, mailed or otherwise furnished to the successful supplier within the time acceptance specified in the offer, shall result in a binding contract without further action by either party.
13. **Validity of Offer.** This RFP in no way obligates RTI to make an award, nor does it commit RTI to pay any costs incurred by the Seller in the preparation and submission of a proposal or amendments to a proposal. Your proposal shall be considered valid for **90** days after submission.



14. **Representations and Certifications.** Winning suppliers under a US Federal Contract are required to complete and sign as part of your offer RTI Representations and Certifications for values over \$10,000.
15. **Anti- Kick Back Act of 1986.** Anti-Kickback Act of 1986 as referenced in FAR 52.203-7 is hereby incorporated into this Request for Proposal as a condition of acceptance. If you have reasonable grounds to believe that a violation, as described in Paragraph (b) of FAR 52.203-7 may have occurred, you should report this suspected violation to the RTI's Ethics Hotline at 1-877-212-7220 or by sending an e-mail to ethics@rti.org. You may report a suspected violation anonymously.

Acceptance:

Seller agrees, as evidenced by signature below, that the seller's completed and signed solicitation, seller's proposal including all required submissions and the negotiated terms contained herein, constitute the entire agreement for the services described herein.

By: (*Seller Company Name*)

Signature: _____

Title:

Date: