

Amendment 1 to Request for Proposals RFP-UESP-2021-016

**Activity Title: “Heat Supply Scheme for Kropivnitskiy city
developed and approved in the prescribed manner”**

Issuance Date: April 15, 2021

Amendment issuance date: April 21, 2021

Deadline for Receipt of Questions: April 29, 2021 at 14:00

Closing Date and Time: May 21, 2021 at 14:00

Issuance of this RFP does not constitute an award commitment on the Tetra Tech ES, Inc., nor does it commit to pay for any costs incurred in preparation or submission of comments/suggestions of a proposal. Proposals are submitted at the risk of the offerors. All preparation and submission costs are at the offeror’s expense.

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1. INTRODUCTION

The purpose of this RFP is to solicit proposals for **Heat Supply Scheme for Kropivnitskiy city developed and approved in the prescribed manner** within the Scope of Work (SOW) specified in the Attachment A – Technical Specification within the Energy Security Project implementation funded by the U.S. Agency for International Development (USAID) and implemented by Tetra Tech ES, Inc. (Tetra Tech).

2. OFFEROR'S QUALIFICATIONS

Offeror must provide the following information and references in order to be qualified for the procurement process:

1. Company's information, including official registered title, type of business, address, and contact person information.
2. A short description of the company and of past similar experience in providing the services described in the Attached A -Technical Specification.
3. Overall technical approach to fulfill the specifications defined in Attachment A – Technical Specifications.
4. Certification that company is not owned or controlled in total or in part by any entity of any government.
5. Certification by any subcontractor engaged by the company for this project that the subcontractor is not owned or controlled in total or in part by any entity of any government.
6. The Offeror shall complete and sign the Representation and Certifications found in Attachments C to this document and include them with the Offeror's proposal. Proposals that do not include these certifications will not be considered.
7. A certificate of current cost or pricing data – Attachment D
8. Offerors listed in the Excluded Parties List System will not be considered. The Excluded Parties List can be found at <https://www.sam.gov/SAM/pages/public/searchRecords/searchResults.jsf>

3. SOURCE, ORIGIN AND NATIONALITY RESTRICTIONS

The USAID authorized geographic code for the Energy Security Project is 935. Code 935: Consists of any area or country including the cooperating country, but excluding the “prohibited sources”

Reference: USAID ADS Chapter 310, and all its sub-sections. These documents are available on the Internet.

4. SUBMISSION OF PROPOSALS

All proposals are due on **May 21, 2021** by no later than **14:00** local time in Ukraine. Proposals must be submitted via e-mail at the address **UESPprocurement@tetrattech.com** in the following formats: Adobe Acrobat and Microsoft Word and/or Excel.

All proposals must fully respond to the Technical Specifications enclosed as **Attachment A** and must include quotes in the format provided in the **Attachment B - Table 1 – Detailed Budget**. Proposals received after the above-stated due date and time will not be considered for this procurement.

5. QUESTIONS AND CLARIFICATIONS

All questions or clarifications regarding this RFP must be in writing and submitted, in English, to **UESPprocurement@tetratech.com** on **April 29, 2021** no later than **14:00** local time in Ukraine. Questions and requests for clarification, and the responses thereto, will be circulated to all RFP recipients.

Only written answers from ESP Procurement Office of Tetra Tech will be considered official and carry weight in the RFP process and subsequent evaluation. Any answers received outside the official channel, whether received verbally or in writing, from employees or representatives of Tetra Tech, or any other party, will not be considered official responses regarding this RFP.

6. PROPOSALS PREPARATION INSTRUCTIONS

All Offerors must follow the instructions set forth herein in order to be qualified for the procurement process. If an Offeror does not follow the instructions set forth herein, the Offeror's proposal may be eliminated from further consideration or the proposal may be downgraded and not receive full credit under the applicable evaluation criteria.

Separate Technical and Cost Proposals must be submitted. All proposals should be submitted in English and be signed by Offerors.

I. TECHNICAL PROPOSAL

The technical proposal (excluding CVs) shall not exceed **11** pages. Proposals will be scored on a 100-point scale. Available points for each evaluation factor are given below. Offerors must address each evaluation factor.

The suggested outline for the technical proposal is stated below:

A. Organization's Information (maximum 2 pages)

- Organization's information, including official registered title, type of business, list of offices if applicable, address, telephone, fax and website.
- Organization's DUNS number.
- Authorized point of Contact with phone number(s) and email address.

B. Company Technical Capability (maximum 2 pages)

Description of organization, including activities/qualifications carried out like the scope of work requested.

C. Technical Approach (maximum 3 pages)

Present a narrative that describes how the Offeror would implement the tasks identified in the scope of work. This narrative must also include:

- A management approach which describes how the Offeror will manage the delivery of the services and how the Offeror will interact with ESP.
- A draft work plan that outlines the proposed activities over the course of the period of performance.
- Proposed performance indicators to measure the impact of the Offeror's planned activities and the progress of the Awardees as a result of the Offeror's assistance.

Information which the Offeror considers proprietary, if any, should be clearly marked “proprietary” next to the relevant part of the text and it will then be treated as such.

D. Proposed Staff (maximum 2 pages, excluding CVs)

Present a narrative that includes the following:

- Team composition (names, specialties/area of expertise, position/role, etc.), with detailed bios, and task assignments to perform the activities described in the SOW.
- Curriculum Vitae (CV) for all labor categories named in the Attachment A. (CVs shall be limited to 3 pages each) that describes their experience and lists the following:
 - Affiliation/Organization
 - Education
 - Years of Professional Experience
 - Relevant Experience to the SOW in this RFP
 - Fluency in English

In addition to presenting the CVs, offerors should complete and include the table below:

Proposed Personnel’s Name, Last Name	Proposed Position Under This Assignment	Qualification	Years of Professional Experience

E. Company Past Performance (maximum 2 pages)

Offerors should provide a summary of relevant studies or other assignments including the Title, Client, Date, and a brief description. The qualifications section is limited to 5 of the most relevant studies or other assignments performed in the last 5 years, presented in the following table format. If the client is confidential, simply list “confidential”.

Project (task) name (title)	Description of the project (task) and services provided	Client name, phone number and email address	Dates of execution

II. FINANCIAL PROPOSAL

a. Detailed Budget

Offeror shall complete the **Table 1 of the Attachment B “Detailed Budget”** in order to allow Tetra Tech ES, Inc. to compare all quotes and make a competitive selection. The budget should be provided in Excel format with unlocked cells and formula.

A price must be provided for each project component to be considered compliant with this request. The price proposal should include the individual line items shown in the template, e.g., fully-burdened daily rates, travel costs, and other direct costs. Offers must show unit prices, quantities, and total price. All items, services, etc. must be clearly labeled and included in the total offered price. The price proposal shall also include a budget narrative that explains the basis for the estimate of every cost element or line item. Supporting information must be provided in sufficient detail to allow for a complete analysis of each cost element or line item. Tetra Tech reserves the right to request additional cost information if the evaluation committee has concerns of the reasonableness, realism, or completeness of an Offeror’s proposed price.

Offeror shall provide unit pricing in **US dollars (USD)**. Prices quoted in this document shall be valid for a 60-day time period, include all taxes and other costs but excluding the VAT tax originated in Ukraine.

b. 1420 Forms for the proposed personnel

For each staff member proposed, the Offeror shall submit a completed and signed USAID 1420 forms.

USAID form 1420 can be downloaded here: <https://www.usaid.gov/forms/aid-1420-17>

c. Proposed Billing Rates Certification

Document on company letterhead certifying the labor rates being proposed are standard rates and have been previously billed to clients for similar work.

d. Representations and Certifications

These documents can be found in Attachments C of this RFP and must be submitted as part of the Cost Proposal.

e. Non-government owned certification

Certification that company is not owned or controlled in total or in part by any entity of any government.

f. Certificate of current cost or pricing data

These documents can be found in Attachments D of this RFP and must be submitted as part of the Cost Proposal.

Under no circumstances may cost information be included in the technical proposal. No cost information or any prices, whether for deliverables or line items, may be included in the technical proposal. Cost information must only be shown in the cost proposal.

7. EVALUATION CRITERIA

Award will be made to the offeror representing the best value in consideration of past performance, qualifications, and price factors. Technical criteria are more important than cost, although prices must be reasonable and will be considered in the evaluation. Offeror are encouraged to provide a discount to their standard commercial rates.

Tetra Tech reserves the right to conduct discussions with selected offeror (s) in order to identify the best value offer. Award of any resulting Subcontract Agreement shall be made by Tetra Tech on a best value basis. Tetra Tech reserves the right to request a test assessment from offerors to assess their qualifications.

The submitted technical information will be scored by an evaluation committee using the following technical evaluation criteria (80 points) and cost proposal (20 points).

Given the specific expertise required to perform the services in question only offers with a technical score of 50 points or more will be considered for evaluation of their cost proposals.

Proposals will be scored on a 100-point scale. Available points for each evaluation factor are given below.

TECHNICAL PROPOSAL (80 POINTS)

Evaluation Criteria for Technical Proposal		Points
I.	Technical Approach	35
II.	Proposed Staff	25
III.	Company Past Performance	20
TOTAL		80

FINANCIAL PROPOSAL (20 POINTS)

The lowest qualified financial proposal will receive the maximum score of 20 points.

The other proposals will be scored inversely proportional to their price and computed as follows:

$$S_f = 20 * F_m / F$$

where

S_f = financial Score of the proposal evaluated

F_m = price of the lowest priced Financial Proposal among those qualified

F = price of the Financial Proposal under consideration

Offeror should submit a Detailed Budget reflecting the cost of completing the scope. Offerors shall complete the Attachment B – Detailed Budget. Labor rates quoted in this document shall be fully-burdened with all indirect costs, taxes and fee, if any. The period of performance is **40 weeks**.

Tetra Tech reserves the right to conduct discussions with selected offeror(s) in order to identify the best value offer. Award of any resulting Subcontract Agreement shall be made by Tetra Tech on a

best value basis, with evaluation of proposed price as well as proposed services and implementation schedule.

8. TERMS OF PAYMENT

Payment terms for the awarded Subcontract Agreement shall be forty-five (45) days after satisfactory completion and acceptance and of services and deliverables according to the schedule in the Table 2. Payment shall be made by Tetra Tech ES, Inc. via bank wire transfer in **Ukrainian Hryvnias** per National Bank of Ukraine exchange rate on the effective date of the subcontract **or US dollars**.

9. DUNS NUMBER AND SAM.GOV REGISTRATION

Active DUNS number or evidence of process of registering for DUNS number is required at stage of submitting proposal. DUNS Number shall be active and SAM.gov registration completed before finalization of subcontract agreement. All second-tier subcontractors must comply with the requirements outlined in the RFP, including obtaining DUNS and SAM numbers if the proposed second-tier subcontract price is above \$30,000. Only legal entities need DUNS numbers. Information regarding obtaining a DUNS number may be found here:

<https://fedgov.dnb.com/webform>

10. NEGOTIATIONS

Best offer proposals are requested. It is anticipated that a subcontract will be awarded solely on the basis of the original offers received. However, Tetra Tech reserves the right to conduct discussions, negotiations and/or request clarifications prior to awarding a subcontract. Furthermore, Tetra Tech reserves the right to conduct a competitive range and to limit the number of offerors in the competitive range to permit an efficient evaluation environment among the most highly-rated proposals. Highest-rated offerors, as determined by the technical evaluation committee, may be asked to submit their best prices or technical responses during a competitive range.

11. MULTIPLE AWARDS/NO AWARD

Tetra Tech ES, Inc. reserves the right to issue multiple awards. Tetra Tech ES, Inc. also reserves the right to issue no awards.

ATTACHMENT A – TECHNICAL SPECIFICATION

SCOPE OF WORK: Heat Supply Scheme for Kropivnitskiy city developed and approved in the prescribed manner

PERIOD OF PERFORMANCE: 40 weeks

PLACE OF PERFORMANCE: Ukraine

1. Background

Energy security project is USAID project implemented by Tetra Tech ES, Inc. Energy security project works with Ukrainian government, private sector, and civil society leaders to improve Ukraine's energy security, and transform Ukraine's energy sector into a modern, market-oriented, EU-integrated, engine of growth. Energy security project's goals include *inter alia* promoting competitive energy markets, facilitating European integration, strengthening energy independence, facilitating renewable energy development, supporting empowered sector regulation, increasing public trust and ensuring environmental and social responsibility.

One of specific directions of the Energy security project is to provide technical assistance to municipal stakeholders in the implementation of DH sector reforms and projects to improve overall performance and management of their DH systems, and the efficiency, affordability, and reliability of heat supply.

Energy security project, Kropivnitskiy City Council and the Municipal Enterprise "Teploenergetyk" concluded for partnership. Specifically, the Memorandum of Understanding on international technical assistance between the Kropivnytskyi City Council and Tetra Tech ES, Inc., ESP USAID, was signed on 28th December, 2020. The partnership provisions include, *inter alia*, support by Energy Security Project to be provided for Heat Supply Scheme development and subsequent endorsement.

The following is the basis for the development of Heat Supply Scheme for Kropivnitskiy city:

- Law of Ukraine "On Heat Supply";
- Order of the Ministry of Community and Territory Development of Ukraine No. 235 of 10/02/2020 "On Approval of the Methodology for Development of Heat Supply Schemes for the Settlements of Ukraine";
- Kropivnytskyi City Council Resolution No. 105 of 02/02/2021 "On Approval of Comprehensive Program for Development of Housing and Utilities Sector and Road Traffic Safety in Kropivnytskyi for 2021-2025".

For the purposes of this procurement:

- Customer – TETRA TECH ES, Inc., ESP USAID.
- Recipient – KROPYVNYTSKYI CITY COUNCIL.
- Financing SOURCE – Customer's funds

2. Objectives

To develop the heat supply scheme for Kropivnitskiy city, for the period 2022 through 2032. The Heat Supply Scheme shall aim to implement the objectives:

- Improving energy efficiency, quality, reliability, and environmental safety of heat supply in Kropivnitskiy;

- Establishing optimal combination of district heating, autonomous heat supply, individual heat supply (as relevant); elimination of blended (district and individual) heating cases in residential multiapartment apartment buildings (and other building if applicable);
- Development of assessed measures to ensure the break-even point of operations of the municipal heat supply company.

3. Scope of Work

Objects of the analysis

In order to develop the heat supply scheme of Kropyvnytskyi, the subcontractor shall analyse the following objects: the CHP, heat generating units (sources), heat networks, pumping stations, central heat substations, and installed individual heat substations, multiapartment buildings connected to the district heating system, where all or part of apartments are supplied with heat by Kropivnitskiy district heating entity (part of apartments transferred to individual heating).

Structure of the Heat Supply Scheme

To develop the heat supply scheme of Kropyvnytskyi, the subcontractor shall duly follow the provisions prescribed in the Methodology for Development of Heat Supply Schemes in Settlements of Ukraine. The product under the subcontract, i.e. Heat Supply Scheme of Kropivnitskiy city, shall include the following structural parts:

- Explanatory Note;
- Graphic part;
- Passport of the Heat Supply Scheme;
- Financing plan and Implementation plan;
- Environmental Impact Analysis, consolidated; and
- Annexes.

SOW 3.1 Development of Explanatory Note

The subcontractor is expected to organize an establishing meeting with participation of representatives of the ESP, Kropivnitskiy local government bodies, Kropivnitskiy heat supply organization, and other stakeholders, as relevant. The purpose of meeting shall be to inform on this project (development of Heat Supply Scheme of Kropivnitskiy), phases of the project, timeline for actions, roles of engaged parties, milestones, etc. The subcontractor will organize the meeting in close coordination with the ESP team.

The subcontractor shall conduct necessary data collection and data analysis to develop the Explanatory Note to the Heat Supply Scheme of Kropivnitskiy city. To collect necessary data, the subcontractor will conduct purposeful data collection. For data collection, the subcontractor will develop questionnaires and other forms, as needed, to determine and refine necessary indicators. The subcontractor will use other available trusted sources of information on Kropivnitskiy heat supply system. The subcontractor will be shared with results of consumer survey, conducted under subcontract of ESP, when the results are available.

The Explanatory Note shall objectively disclose the following:

A. General information on the city of Kropivnitskyj, including but not limited to:

- City description:
 - Information on the current size of population and its dynamics;
 - Information on housing stock: amount, localities, structure, and condition; administrative and social buildings shall be included into analysis (current condition and projected condition for the HSS period shall be assessed); the analysis of the building stock shall disclose *inter alia* the distribution of stock at the city's administrative, residential, and industrial areas;
 - Information on the structure of heat supply of the city: share of thermal energy produced from renewable energy sources, %; share of thermal energy produced with the use of waste heat energy, %; share of thermal energy produced as a result of combined generation of heat and electricity, %; level of integration of heating networks, %; share of district heating, % in total heat demand in Kropivnitskiy;
 - Information and analysis on consumers disconnected from the DH system in multiapartment buildings;
 - Analysis of implemented and planned projects and programs of thermal modernization of buildings;
 - The major infrastructural objects of the city with identification of characteristic features, problems, and potential opportunities of utilization/integration into heat supply scheme (gas supply systems, power supply systems, water supply, and sanitation systems, solid waste management, etc.);
 - Climate characteristics of the city;
 - Description of the industrial complex of the city.
- Current state, projects for construction of new buildings, state and projects of thermal modernization of buildings; plans for transferring to an individual or autonomous heating those residential buildings, where more than 50% of apartments have already transferred to individual heating. Information on the developed plans of residential blocks, industrial, business and social zones, other materials available on zoning of the city territory;
- Analysis of the availability and potential use of conventional fuel and energy resources at present and in the future, for heat supply needs;
- Analysis of the availability and potential use of renewable and alternative energy sources, local fuels at present and in the future, for heat supply needs;
- Thermal energy balance for Kropivnitskiy, revealing primary fuels, types of heat supply (DH system, individual, autonomous, etc.), types of consumers (residential, public buildings, etc.), in t.o.e./year, and in %;
- Current and projected demand for heat energy (heat load) in the city, taking into account the dynamics new construction and thermal modernization of existing buildings.

B. Analytical description and assessment of the existing heat supply system in Kropivnitskiy. Specifically, the centralized district heat supply system (DH system) shall be analyzed and assessed:

- Heat supply system structure:
 - Analysis of existing city program documents in the area of heat supply, as well as implemented and planned projects and programs for modernization of the municipal heating system (district heating system);
 - Characteristics of existing heat sources providing for DH system: CHP, boiler houses in districts, blocks, industrial and other boiler houses;
 - Characteristics of existing heat networks which connect city's generation units to the city's DH system;

- Characteristics of heat energy consumption (by consumer categories);
- Availability of meters, to measure consumption at building level (or/and apartment level, if applicable); availability of meters, to measure heat supplied to the network;
- Identification and analytical assessment of heat supply zones in the city of Kropivnitskiy:
 - Development of a spatial scheme of heat supply zones, including zones of district, moderately district, decentralized, autonomous, individual heat supply; when identifying heat supply zones, the subcontractor shall duly assess the rationality to complete the transfer into individual or autonomous heat supply option those residential multiapartment buildings, where 50% or more apartments are already using individual heat supply;
 - Proposed heat supply zones shall be provided with data on installed thermal generation capacities and the heat load connected. The subcontractor shall specify the connected load, inform on current load and projected (estimated) load after completion of proposed transfer to individual and autonomous systems of heat supply in residential apartment buildings, when applicable, after commissioning new construction buildings, if any, and implementation anticipated programs of thermal modernization of buildings, as relevant;
 - The subcontractor shall compile balances of fuel use and heat consumption for each zone of heat supply. The subcontractor shall compile the integrated balance of fuel use and heat consumption for the entire heat supply system in the city of Kropivnitskiy. If detected, the subcontractor shall provide any heat generation capacity deficits in specific heat supply zones. The information shall be developed on annual basis for the HSS duration;
 - The subcontractor shall determine the density of heat energy consumption at specific heat supply zones, and for the entire heat supply system in Kropivnitskiy.
- Analysis of fuel and energy annual balances for the previous periods (5 years) for the entire city;
- Establishment and analysis of indicators informative on the current state of the existing heat supply system in Kropivnitskiy.
- Efficiency indicators of the existing municipal DH system:
 - Establishment of the base year;
 - Efficiency of heat thermal energy generation: specific consumption of fuel equivalent to generate thermal energy, kg o.e./Gcal; cost of thermal energy generated, UAH/Gcal (in baseline year prices; quantity of production employees per 1 thousand Gcal released from heat energy sources;
 - Efficiency of thermal energy transportation: technical losses in heat networks, actual, in Gcal and %; specific water consumption for the replenishment in the network, m³ and %; quantity of production employees directly involved in the technological process of thermal energy transportation, staff per 10 km of network; specific consumption of electricity for transportation of thermal energy, total MWh and comparative kWh/Gcal; cost of heat energy transportation, UAH/Gcal (in baseline year prices);
- Reliability indicators of the DH system:
 - Share of emergency sections of heat network pipes, km and %;
 - comparative share of network damageability in each specific district heat supply zone, number of damages per year in each district heat supply zone

- and number of damages of year per 1 km of heat networks in each district heat supply zone;
- identification of sections with the highest level of damage;
- compliance of the reliability levels of heat supply sources and heat transport networks to established legal requirements, concluding on reliability gaps, if any;
- Quality indicators of the DH system:
 - equivalence (nonequivalence) of actually supplied heat quantity and the estimated (provisioned) heat quantity;
 - statistical analysis of the correspondence among fuel consumption, heat production and ambient air temperature, for specific heat sources;
 - statistical analysis of the number and duration of interruptions of heat supply to consumers, when interruptions are due to damages in heating networks and they are due to other reasons (specify);
 - statistical analysis of the average duration of interruptions of the heat supply to consumers, when interruptions are due to damages in heating networks and they are due to other reasons (specify);
 - statistical analysis of registered complaints of heat consumers regarding service quality, provided with the terms of contracts;
- Environmental indicators, provided separately for DH system in Kropivnitskiy, and for the city of Kropivnitskiy:
 - specific emissions of nitrogen oxides per 1 Gcal of released thermal energy;
 - specific emissions of sulfur oxides per 1 Gcal of released thermal energy;
 - specific emissions of solid particles per 1 Gcal of released thermal energy;
 - specific emissions of greenhouse gases (CO₂, N₂O, CH₄, estimated as equivalent of CO₂) per 1 Gcal of released thermal energy;
 - specific emissions of carbon oxide (CO) per 1 Gcal of released thermal energy.
- Existing and projected demand for DH system supplies (heat load) taking into account the connection/disconnection of consumers, new construction, and thermal modernization of existing buildings, including other energy efficiency measures, for eg., IHSs;
- Disclose the heating modes of buildings which fully or partially are not connected to DH system;
- Resume (executive summary) of the analysis conducted on the current state of the heat supply system in Kropivnitskiy and specifically for the DH system.

C. Identification of long-term goals for sustainable heat supply development of Kropivnitskiy. Target indicators for the City's heat supply system shall be provided, including:

- Structure of municipal heat supply: share of district heating in city's final heat Consumption, %; individual heating, in the city's final heat Consumption, %; autonomous heating, in the city's final heat Consumption, %.
- Structure of thermal energy generation (at heat source): from renewable energy sources, %; share of thermal energy produced utilizing waste heat energy, %; share of thermal energy produced at CHP facilities, %; other gas fueled facilities, %; other fuels using facilities, %. The subcontractor shall provide information in such a way, which allows to distinguish DH system structure, autonomous systems' structure and individual heat supply input to city's structure of the thermal energy generated.
- Level of integration of heating networks (DH system), %;
- Efficiency indicators of thermal energy production in municipal DH system and autonomous heat supply: specific consumption of fuel equivalent to generate

thermal energy, kg o.e./Gcal; cost of thermal energy generated, UAH/Gcal (in baseline year prices);

- Efficiency indicators of heat energy transportation in municipal DH system: technical losses in heat networks, projected, in Gcal and %; specific water consumption for the replenishment in the network, m³ and %; specific consumption of electricity for transportation of thermal energy, total MWh and comparative kWh/Gcal; cost of heat energy transportation, UAH/Gcal (in baseline year prices);
- Reliability of supply by municipal DH system: share of emergency sections of heat network pipes, km and %;
- Quality of heat supply by municipal DH system and autonomous heating system(s), if relevant: alignment of fuel consumption, heat production and ambient air temperature, for specific heat sources;
- projected number of unplanned (emergency) interruptions in the heat transportation, specifying by duration below 6 hours and above 6 hours, when unplanned (emergency) interruption is due to DH entity's responsibility;
- Environmental sustainability of DH system, autonomous heat supply and individual heat supply in Kropivnitskiy: specific emissions of nitrogen oxides per 1 Gcal of released thermal energy; specific emissions of sulfur oxides per 1 Gcal of released thermal energy; specific emissions of solid particles per 1 Gcal of released thermal energy; specific emissions of greenhouse gases (CO₂, N₂O, CH₄, estimated as equivalent of CO₂) per 1 Gcal of released thermal energy;
- The target indicators that will be achieved after the implementation of the measures planned in the municipal heat supply scheme over the projected period should be compared to the similar indicators of the baseline year.

D. Development and assessment of potential projects on modernization and development of the heat supply system of Kropivnitskiy, when the projects are aiming to implement the proposed (optimal) heat supply scheme. The projects shall be based on the conducted analysis of the state of heat supply system, analysis of the energy resource availability, and assessment of potential of use of renewable and alternative energy sources, and local fuels. The potential projects shall include:

- Projects on construction, reconstruction, and modernization of heat sources - Projects on the use of waste energy potential, Projects on the introduction of heat energy sources that use alternative fuels, Projects on the introduction of cogeneration units;
- Projects on optimization of the heat supply system structure, including changes to heat supply zones, elimination of inefficient heat sources and connecting consumers to more efficient ones; expansion of the zones of operation of CHP and other efficient heat sources; disconnection of remote consumers from sources of district heating. Under this scope, the subcontractor shall assess potential modernization of the heating district of PZK (South-West Boiler House) – and consider *inter alia* the option of closing this boiler house and the distribution of heat load between local boiler houses located in close proximity to heat consumers, including boiler houses in reserve (conserved). Under this scope, the subcontractor shall assess potential project of modernization of the heating district of Kropyvnytskyi CHP – and consider, at least, construction of a modern gas-fired boiler house to replace the current CHP capacity, construction of a modern mini-CHP fueled on natural gas to replace the current CHP capacity, and construction of a modern mini-CHP fueled on biofuel (sunflower husks, other agricultural waste, or other) to replace the current CHP capacity;
- Projects on optimization, construction, and reconstruction of DH heat networks;

- Other projects on construction, reconstruction, and modernization of integral elements of DH system, for eg., pump stations, heat substations, others;
- Installation of IHSs at a scale, in buildings connected to DH system;
- Projects to create and/or improve the energy management system at municipality level and at the DH entity, if relevant;
- Small-scale projects, that increase energy efficiency of the DH system;
- Under the scope and in respect to the potential investment projects , the subcontractor shall provide:
 - cost-benefit analysis per project and prioritizing (ranking) the projects; the subcontractor shall apply CBA and ranking on stand-alone basis (per project) and applying a package approach (merging two or more projects together into a set of interdependent projects);
- The subcontractor shall discuss and agree with the relevant electricity and gas supply organizations on projects which are going to be included into the new municipal heat supply scheme of Kropyvnytskyi and which are anticipated to cause changes on power load and gas consumption;
- The subcontractor shall clearly indicate and provide unbiased assessment to those investment projects, that have to be commissioned to implement the proposed (optimal) heat supply scheme, but which (investment projects) are beyond DH system.

E. Assessment of at least two sound options (scenarios), developed by the subcontractor, for the municipal heat supply scheme on top to the base (BAU) scenario. The Subcontractor shall:

- assess the scenarios using CBA approach; anticipated impact of DH tariff and spending of Kropivnitskiy heat consumers (by consumer groups and total); projected technical-economic indicators of the heat supply (for the DH system, and for the entire heat supply system of the city as per specific HSS scenario); environmental indicators (for the DH system, and for the entire heat supply system of the city as per specific HSS scenario).
- make comparative analysis of the scenarios developed; make a selection of the recommended (optimal) scenario; provide extensive justification of the choice to be pursued for the development of the heat supply system for Kropivnitskiy.
- conducting the in-depth technical, economic, and environmental analysis of the recommended (optimal) scenario for HSS development: assessment of the technical and technical-and-economic, and technical-environmental interdependencies and impacts of individual projects of the recommended HSS option; sensitivity analysis; risks and uncertainties analysis.
- project fuel and energy balance for Kropivnitskiy city.

F. Thermal and hydraulic calculations for the DH network. The subcontractor shall conduct analysis and conclude on temperature graphs recommended to implement by the municipal DH network operator under the recommended (optimal) HSS scenario. The subcontractor shall provide substantiation for the recommended temperature graphs.

G. Organizational (management) plan to implement the recommended (optimal) municipal heat supply scheme. Risk analysis and risk management plan to mitigate the identified risks or reduce anticipated consequences.

H. List of assumptions used for analysis; assessment of probability of change of influencing factors.

The subcontractor will present draft Explanatory Note and the developed draft at least new 2 HSSs and the baseline HSS to ESP team at a dedicated meeting. In case ESP has comments to the drafts, the subcontractor is expected to address the comments provided.

The subcontractor will organize technical meeting with representatives of Kropivnitskiy, to present and discuss draft deliverables, namely Explanatory Note and the developed draft HSSs. In case Kropivnitskiy representatives have comments to the drafts under discussion, the subcontractor is expected to address the comments provided. The subcontractor will organize the meeting in coordination with ESP team.

SOW 3.2 Development of Graphical representation of the Heat Supply Scheme

The subcontractor will develop graphical representation of the recommended (optimal) heat supply scheme. The graphical part shall contain the city plan, and shall, in accordance to the recommended (optimal) HSS, provide for:

- existing and prospective development of the city;
- zones allocated for individual heat supply, zones allocated for autonomous heat supply, and ones allocated for DH supply;
- location of heat sources, of all types, for each type of heat supply zone, i.e. heat sources with the indication of the area of operation of these sources;
- heat sources (generation facilities) shall have key information / characteristics identified;
- location of alternative energy sources;
- location/scheme of transmission (main) heating network;
- location, prospective scheme(s) for modernized distribution (local) heating network, with identification of existing segments and prospective segments.

The subcontractor shall develop the graphic part using electronic tools for modeling the heat supply system, including but not limited to using GIS.

SOW 3.3 Development of Passport of Heat Supply Scheme

The subcontractor will develop passport of the heat supply scheme, in accordance to the recommended (optimal) HSS. The passport will follow provisions of the Methodology and shall contain the key indicators for the base year and the subsequent years of HSS under implementation.

SOW 3.4 Heat Supply Scheme Project Financing and Implementation Plan

The subcontractor will develop financing plan, which will provide all relevant and systematized information on Financial issues of the HSS implementation: projects under the HSS; capital expenditures; financial indicators (NPV, IRR, as provided in the Methodology, but not limited to that, if relevant); identification of financing institutions; anticipated terms of financial provision; other information of relevance.

The subcontractor will develop implementation plan, which will provide all relevant and systematized information on Implementation issues of the HSS project: phases of HSS implementation; allocation of specific projects under the phases; parties involved, their roles, timeline of actions; milestones; other information as relevant. The subcontractor will provide sensitivity analysis, and other tools to support managing implementation of the HSS project.

SOW 3.5 Consolidated Environmental Impact Analysis

The subcontractor will develop a consolidated environmental impact analysis for the recommended (optimal) heat supply scheme. The environmental impact analysis shall *inter alia* include an assessment of the potential for reducing greenhouse gas emissions and other environmental

indicators, anticipated at implementation of the recommended (optimal) municipal heat supply scheme.

SOW 3.6 Passage Support

The subcontractor will organize a Round Table meeting with participation of representatives of Kropivnitskiy local government bodies, Kropivnitskiy heat supply organization, and other stakeholders, as relevant, and ESP. The purpose of the Round Table shall be to inform and discuss the recommended (optimal) heat supply scheme developed for Kropivnitskiy city, at its final technical fulfillment, and to agree on next steps to have the HSS approved. The subcontractor will organize the meeting in close coordination with the ESP team.

The subcontractor will provide support to passage the developed Kropivnitskiy Heat Supply Scheme, until it is adopted by mandated institution. The passage support will include actions and products needed by the adopting institution, for eg., drafting explanatory notes, organizing and participating in round tables and discussions, acting as a member of working groups if any, developing presentations and other support materials. Approval and coordination of the heat supply scheme are performed in accordance with the regulatory and legal acts of Ukraine. In case the HSS under passage received comments by mandated bodies, the subcontractor shall address the comments.

4. Deliverables and Due Dates

The subcontractor shall deliver to ESP the following deliverables, in accordance with the schedule set forth below. Deliverables are to be developed in Ukrainian.

The subcontractor will provide all the deliverables in electronic form, when a deliverable does not have the label “Final”. The subcontractor will provide all the deliverables in electronic form and 4 printed copies, when a deliverable has the label “Final”.

In addition, the subcontractor will provide electronically: initial data set, thermo-hydraulic calculations, technical, economic and environmental calculations, in a spreadsheet format.

SOW task	Deliverable Name	Due Date
SOW 3.1	1. Kick off meeting, organized with Representatives of Kropivnitskiy and ESP	2 weeks after signing the subcontract
	2. Questionnaire for data collection; GANTT chart for implementation the entire SOW	2 weeks after signing the subcontract
	3. Draft Explanatory Note (analytical part)	20 weeks after signing the subcontract.
	4. Draft: at least two newly developed HSSs and the base option for HSS	24 weeks after signing the subcontract.

	5. Presenting to ESP team the draft deliverables, technical meeting (3, 4, 8)	25 weeks after signing the subcontract
	6. Presenting to Representatives of Kropivnitskiy the draft deliverables, technical meeting (3, 4, 8)	26 weeks after signing the subcontract
	7. FINAL: Explanatory Note (in entirety)	30 weeks after signing the subcontract.
SOW 3.2	8. Draft: Graphical representation of the Heat Supply Scheme	24 weeks after signing on the subcontract
	9. FINAL: Graphical representation of the Heat Supply Scheme	30 weeks after signing the subcontract
SOW 3.3	10. Draft: Passport of Heat Supply Scheme of Kropivnitskiy City	24 weeks after signing on the subcontract
	11. FINAL: Passport of Heat Supply Scheme of Kropivnitskiy City	30 weeks after signing the subcontract
SOW 3.4	12. Draft: HSS project financing plan and implementation plan	24 weeks after signing on the subcontract
	13. FINAL: HSS project financing plan and implementation plan	30 weeks after signing the subcontract
SOW 3.5	14. Draft: Consolidated Environmental Impact Analysis	24 weeks after signing on the subcontract
	15. FINAL: Consolidated Environmental Impact Analysis	30 weeks after signing the subcontract
SOW 3.6	16. Round Table organized with Representatives of Kropivnitskiy, stakeholders, and ESP	32 weeks after signing the subcontract
	17. Acceptance and Approval of the HSS	38 weeks after signing the subcontract.
	18. Transfer of the Documentation to the Customer	40 weeks after signing the subcontract.

ATTACHMENT B – DETAILED BUDGET
PROPOSED DETAILED BUDGET
TABLE 1 – Overall Subcontract Detailed Budget

Cost element	unit cost	Total units	cost
Total Direct Labor			
LABOR (rate; level of effort; total)			
Title,Labor Category - Name, Last Name (Full time / Short Term)	\$0.00	days	\$ -
Title,Labor Category - Name, Last Name (Full time / Short Term)	\$0.00	days	\$ -
Title,Labor Category - Name, Last Name (Full time / Short Term)	\$0.00	days	\$ -
Title,Labor Category - Name, Last Name (Full time / Short Term)	\$0.00	days	\$ -
Subtotal Direct Labor			\$ -
Travel, Transportation & Per Diem			
Airfare	\$0	0 trips	\$ -
Per Diem Meal	\$0	0 days	\$ -
Per Diem Lodging	\$0	0 days	\$ -
Travel Miscellaneous	\$0	0 trips	\$ -
Insurance	\$0	0 people	\$ -
Local Ground Transportation	\$0	0 days	\$ -
Communications	\$0	0 trips	\$ -
Subtotal Travel, Transportation & Per Diem			\$ -
Other Direct Costs/Інші прямі витрати			
Subtotal Other Direct Costs			\$ -
TOTAL ESTIMATED COST			\$ -

*LOE = Level of Efforts, budgeted number of days assigned for the work

Rate = fully loaded daily rate

Prices quoted must be valid for **60** days, and account for ALL remuneration, per diem, travel, communications, report reproduction and other out-of-pocket expenses, taxes and other costs, but excluding the VAT tax that may be originated in **Ukraine**. On this basis Tetra Tech will issue a **Fixed Price Subcontract**, and payment shall be based upon acceptance of services and deliverables described in the Table 2.

TABLE 2 – Payment schedule

Offeror Deliverable	Expected Due Date	Fixed Price Payment Amount
1. DEL 3 (SOW3.1): Draft Explanatory Note (analytical part)		15%
2. DEL 7 (SOW3.1): FINAL: Explanatory Note (in entirety)		20%
3. DEL 9 (SOW3.2): FINAL: Graphical representation of the Heat Supply Scheme		15%
4. DEL 11 (SOW3.3) FINAL: Passport of Heat Supply Scheme of Kropivnitskiy City		10%
5. DEL 13 (SOW3.4) FINAL: HSS project financing plan and implementation plan		10%
6. DEL 15 (SOW3.5): FINAL: Consolidated Environmental Impact Analysis		10%
7. DEL 17 (SOW3.6): Acceptance and Approval of the HSS		20%

ATTACHMENT C – REPRESENTATIONS AND CERTIFICATIONS

Offeror Representations and Certifications

1. Organizational Conflict of Interest Representation

The offeror represents, to the best of its knowledge and belief, that this award:

does [] or does not [] involve an organizational conflict of interest.

Please see FAR 52.209-8 for further explanation.

2. Data Universal Numbering System (DUNS) Number (required if cost proposal is more than USD \$30,000)

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(please use one box per number or dash)

3. Source and Nationality of Goods and Commodities

(i) This is to certify that the Offeror is:

- a. an individual who is a citizen or legal resident of _____.
- b. a corporation or partnership organized under the laws of _____.
- c. a controlled foreign corporation of which more than 50% of the total combined voting power of all classes of stock is owned by United States shareholders; or
- d. a joint venture or incorporated association consisting entirely of individuals, partnerships or corporations. If so, please describe separately the citizenship or legal status of the individuals, the legal status of the partnership or corporations, and the percentage (%) of voting power of the corporations.

(ii) This is to certify that the **Source** (the country from which a commodity is to be shipped from) of the Equipment to be supplied under this Order is:

name of country or countries

4. 52.204-24 Representation Regarding Certain Telecommunications and Video Surveillance Services or Equipment (Aug 2020).

The Offeror shall not complete the representation at paragraph (d)(1) of this provision if the Offeror has represented that it “does not provide covered telecommunications equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument” in the provision at [52.204-26](#), Covered Telecommunications Equipment or Services—Representation, or in paragraph (v) of the provision at [52.212-3](#), Offeror Representations and Certifications-Commercial Items.

(a) *Definitions.* As used in this provision—

Backhaul, covered telecommunications equipment or services, critical technology, interconnection arrangements, reasonable inquiry, roaming, and substantial or essential component have the



meanings provided in the clause [52.204-25](#), Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

(b) Prohibition.

(1) Section 889(a)(1)(A) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2019, from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. Nothing in the prohibition shall be construed to—

(i) Prohibit the head of an executive agency from procuring with an entity to provide a service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(ii) Cover telecommunications equipment that cannot route or redirect user data traffic or cannot permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(2) Section 889(a)(1)(B) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2020, from entering into a contract or extending or renewing a contract with an entity that uses any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. This prohibition applies to the use of covered telecommunications equipment or services, regardless of whether that use is in performance of work under a Federal contract. Nothing in the prohibition shall be construed to—

(i) Prohibit the head of an executive agency from procuring with an entity to provide a service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(ii) Cover telecommunications equipment that cannot route or redirect user data traffic or cannot permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(c) Procedures. The Offeror shall review the list of excluded parties in the System for Award Management (SAM) (<https://www.sam.gov>) for entities excluded from receiving federal awards for “covered telecommunications equipment or services”.

(d) Representation. The Offeror represents that—

(1) It will, will not provide covered telecommunications equipment or services to the Government in the performance of any contract, subcontract or other contractual instrument resulting from this solicitation. The Offeror shall provide the additional disclosure information required at paragraph (e)(1) of this section if the Offeror responds “will” in paragraph (d)(1) of this section; and

(2) After conducting a reasonable inquiry, for purposes of this representation, the Offeror represents that—

It does, does not use covered telecommunications equipment or services, or use any equipment, system, or service that uses covered telecommunications equipment or services. The Offeror shall provide the additional disclosure information required at paragraph (e)(2) of this section if the Offeror responds “does” in paragraph (d)(2) of this section.

(e) *Disclosures.*

(1) Disclosure for the representation in paragraph (d)(1) of this provision. If the Offeror has responded “will” in the representation in paragraph (d)(1) of this provision, the Offeror shall provide the following information as part of the offer:

(i) For covered equipment—

(A) The entity that produced the covered telecommunications equipment (include entity name, unique entity identifier, CAGE code, and whether the entity was the original equipment manufacturer (OEM) or a distributor, if known);

(B) A description of all covered telecommunications equipment offered (include brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); and

(C) Explanation of the proposed use of covered telecommunications equipment and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(1) of this provision.

(ii) For covered services—

(A) If the service is related to item maintenance: A description of all covered telecommunications services offered (include on the item being maintained: Brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); or

(B) If not associated with maintenance, the Product Service Code (PSC) of the service being provided; and explanation of the proposed use of covered telecommunications services and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(1) of this provision.

(2) Disclosure for the representation in paragraph (d)(2) of this provision. If the Offeror has responded “does” in the representation in paragraph (d)(2) of this provision, the Offeror shall provide the following information as part of the offer:

(i) For covered equipment—

(A) The entity that produced the covered telecommunications equipment (include entity name, unique entity identifier, CAGE code, and whether the entity was the OEM or a distributor, if known);



(B) A description of all covered telecommunications equipment offered (include brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); and

(C) Explanation of the proposed use of covered telecommunications equipment and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(2) of this provision.

(ii) For covered services—

(A) If the service is related to item maintenance: A description of all covered telecommunications services offered (include on the item being maintained: Brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); or

(B) If not associated with maintenance, the PSC of the service being provided; and explanation of the proposed use of covered telecommunications services and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(2) of this provision.

By signing below, the Offeror certifies that the representations and certifications made, and information provided herein, are accurate, current and complete.

Signature: _____ Date: _____

Name of and title of authorized signature: _____



ATTACHMENT D – CERTIFICATE OF CURRENT COST OR PRICING DATA

This is to certify that, to the best of my knowledge and belief, the cost or pricing data (as defined in section 2.101 of the Federal Acquisition Regulation (FAR) and required under FAR subsection 15.403-4) submitted, either actually or by specific identification in writing, to Tetra Tech in support of [Firm/Organization] are accurate, complete, and current as of [DATE]. This certification includes the cost or pricing data supporting any advance agreements and forward pricing rate agreements between the offeror and the Government that are part of the proposal.

Firm: _____

Signature: _____