



REQUEST FOR QUOTATION (RFQ)

Provision and installation of vacuum solar water heaters in eight Municipalities

RFQ Reference: UNDP Georgia project Improving Rural Development in Georgia/00101419	Date: 15 February 2021
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SECTION 1: REQUEST FOR QUOTATION (RFQ)

UNDP kindly requests your quotation for the Provision and installation of vacuum solar water heaters as detailed in Annex 1 of this RFQ.

A pre-proposal conference for the interested bidders will be held on:

Date: 22 February 2021

Time: 1:00 PM

Venue: Via Zoom

Link: <https://undp.zoom.us/j/88655663499>

This Request for Quotation comprises the following documents:

Section 1: This request letter

Section 2: RFQ Instructions and Data

Annex 1: Schedule of Requirements

Annex 2: Quotation Submission Form

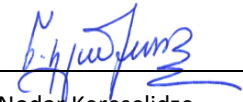
Annex 3: Technical and Financial Offer

When preparing your quotation, please be guided by the RFQ Instructions and Data. Please note that quotations must be submitted using Annex 2: Quotation Submission Form and Annex 3 Technical and Financial Offer, by the method and by the date and time indicated in Section 2. It is your responsibility to ensure that your quotation is submitted on or before the deadline. Quotations received after the submission deadline, for whatever reason, will not be considered for evaluation.

Thank you and we look forward to receiving your quotations.

Issued by:

Signature:



Name:

Nodar Kereselidze

Title:

National Project Manager

Date:

15 February 2021

SECTION 2: RFQ INSTRUCTIONS AND DATA

Introduction	<p>Bidders shall adhere to all the requirements of this RFQ, including any amendments made in writing by UNDP. This RFQ is conducted in accordance with the UNDP Programme and Operations Policies and Procedures (POPP) on Contracts and Procurement</p> <p>Any Bid submitted will be regarded as an offer by the Bidder and does not constitute or imply the acceptance of the Bid by UNDP. UNDP is under no obligation to award a contract to any Bidder as a result of this RFQ.</p> <p>UNDP reserves the right to cancel the procurement process at any stage without any liability of any kind for UNDP, upon notice to the bidders or publication of cancellation notice on UNDP website.</p>
Deadline for the Submission of Quotation	<p>9 March 2021, 5:00 p.m. GMT+4</p> <p>If any doubt exists as to the time zone in which the quotation should be submitted, refer to http://www.timeanddate.com/worldclock/.</p>
Method of Submission	<p>Quotations must be submitted as follows:</p> <p><input checked="" type="checkbox"/> Courier / Hand delivery</p> <p>Bid submission address: 9 Eristavi Str., Tbilisi, Georgia.</p> <p>The sealed envelopes must be clearly marked with the title of the Tender and respective project name (Improving Rural Development in Georgia).</p> <p>Contact person: Ms. Natia Gobejishvili,</p> <p>E-mail address: natia.gobejishvili@undp.org</p> <p>It shall remain your responsibility to ensure that your quotation will reach the address above on or before the deadline in sealed envelopes. Quotations that are received by UNDP after the deadline indicated above, for whatever reason, shall not be considered for evaluation.</p>
Cost of preparation of quotation	<p>UNDP shall not be responsible for any costs associated with a Supplier's preparation and submission of a quotation, regardless of the outcome or the manner of conducting the selection process.</p>
Supplier Code of Conduct, Fraud, Corruption,	<p>All prospective suppliers must read the United Nations Supplier Code of Conduct and acknowledge that it provides the minimum standards expected of suppliers to the UN. The Code of Conduct, which includes principles on labour, human rights, environment and ethical conduct may be found at: https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct</p> <p>Moreover, UNDP strictly enforces a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical or unprofessional practices, and obstruction of UNDP vendors and requires all bidders/vendors to observe the highest standard of ethics during the procurement process and contract implementation. UNDP's Anti-Fraud Policy can be found at http://www.undp.org/content/undp/en/home/operations/accountability/audit/office_of_audit_andinvestigation.html#anti</p>

Gifts and Hospitality	Bidders/vendors shall not offer gifts or hospitality of any kind to UNDP staff members including recreational trips to sporting or cultural events, theme parks or offers of holidays, transportation, or invitations to extravagant lunches, dinners or similar. In pursuance of this policy, UNDP: (a) Shall reject a bid if it determines that the selected bidder has engaged in any corrupt or fraudulent practices in competing for the contract in question; (b) Shall declare a vendor ineligible, either indefinitely or for a stated period, to be awarded a contract if at any time it determines that the vendor has engaged in any corrupt or fraudulent practices in competing for, or in executing a UNDP contract.
Conflict of Interest	<p>UNDP requires every prospective Supplier to avoid and prevent conflicts of interest, by disclosing to UNDP if you, or any of your affiliates or personnel, were involved in the preparation of the requirements, design, specifications, cost estimates, and other information used in this RFQ. Bidders shall strictly avoid conflicts with other assignments or their own interests, and act without consideration for future work. Bidders found to have a conflict of interest shall be disqualified.</p> <p>Bidders must disclose in their Bid their knowledge of the following: a) If the owners, part-owners, officers, directors, controlling shareholders, of the bidding entity or key personnel who are family members of UNDP staff involved in the procurement functions and/or the Government of the country or any Implementing Partner receiving goods and/or services under this RFQ.</p> <p>The eligibility of Bidders that are wholly or partly owned by the Government shall be subject to UNDP's further evaluation and review of various factors such as being registered, operated and managed as an independent business entity, the extent of Government ownership/share, receipt of subsidies, mandate and access to information in relation to this RFQ, among others. Conditions that may lead to undue advantage against other Bidders may result in the eventual rejection of the Bid.</p>
General Conditions of Contract	<p>Any Purchase Order or contract that will be issued as a result of this RFQ shall be subject to the General Conditions of Contract</p> <p>Select the applicable GTC:</p> <ul style="list-style-type: none"> ✓ General Terms and Conditions for Works <p>Applicable Terms and Conditions and other provisions are available at UNDP/How-we-buy</p>
Special Conditions of Contract	<ul style="list-style-type: none"> ✓ Cancellation of PO/Contract if the completion of works are delayed by [14 days]
Eligibility	<p>A vendor who will be engaged by UNDP may not be suspended, debarred, or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization. Vendors are therefore required to disclose to UNDP whether they are subject to any sanction or temporary suspension imposed by these organizations. Failure to do so may result in termination of any contract or PO subsequently issued to the vendor by UNDP.</p> <p>It is the Bidder's responsibility to ensure that its employees, joint venture members, sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by UNDP.</p>

	Bidders must have the legal capacity to enter a binding contract with UNDP and to deliver in the country, or through an authorized representative.
Currency of Quotation	Quotations shall be quoted in USD
Joint Venture, Consortium or Association	<p>If the Bidder is a group of legal entities that will form or have formed a Joint Venture (JV), Consortium or Association for the Bid, they shall confirm in their Bid that : (i) they have designated one party to act as a lead entity, duly vested with authority to legally bind the members of the JV, Consortium or Association jointly and severally, which shall be evidenced by a duly notarized Agreement among the legal entities, and submitted with the Bid; and (ii) if they are awarded the contract, the contract shall be entered into, by and between UNDP and the designated lead entity, who shall be acting for and on behalf of all the member entities comprising the joint venture, Consortium or Association.</p> <p>Refer to Clauses 19 – 24 under Solicitation policy for details on the applicable provisions on Joint Ventures, Consortium or Association.</p>
Only one Bid	<p>The Bidder (including the Lead Entity on behalf of the individual members of any Joint Venture, Consortium or Association) shall submit only one Bid, either in its own name or, if a joint venture, Consortium or Association, as the lead entity of such Joint Venture, Consortium or Association.</p> <p>Bids submitted by two (2) or more Bidders shall all be rejected if they are found to have any of the following:</p> <ul style="list-style-type: none"> a) they have at least one controlling partner, director or shareholder in common; or b) any one of them receive or have received any direct or indirect subsidy from the other/s; or b) they have the same legal representative for purposes of this RFQ; or c) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about, or influence on the Bid of, another Bidder regarding this RFQ process; d) they are subcontractors to each other's Bid, or a subcontractor to one Bid also submits another Bid under its name as lead Bidder; or e) some key personnel proposed to be in the team of one Bidder participates in more than one Bid received for this RFQ process. This condition relating to the personnel, does not apply to subcontractors being included in more than one Bid.
Duties and taxes	<p>Article II, Section 7, of the Convention on the Privileges and Immunities provides, inter alia, that the United Nations, including UNDP as a subsidiary organ of the General Assembly of the United Nations, is exempt from all direct taxes, except charges for public utility services, and is exempt from customs restrictions, duties, and charges of a similar nature in respect of articles imported or exported for its official use. All quotations shall be submitted net of any direct taxes and any other taxes and duties, unless otherwise specified below:</p> <p>All prices must:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> be exclusive of VAT and other applicable indirect taxes
Language of quotation	<p>English language</p> <p>Including documentation including catalogues, instructions and operating manuals.</p>

Documents to be submitted	<p>Bidders shall include the following documents in their quotation:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Annex 2: Quotation Submission Form duly completed and signed <input checked="" type="checkbox"/> Annex 3: Technical and Financial Offer duly completed and signed and in accordance with the Schedule of Requirements in Annex 1 <input checked="" type="checkbox"/> Company Profile. <input checked="" type="checkbox"/> Registration certificate; <input checked="" type="checkbox"/> List and value of projects performed for the last 2 years plus client's contact details who may be contacted for further information on those contracts <input checked="" type="checkbox"/> Minimum Annual turnover of USD 150 000.00 for past two years (2019-2020). <input checked="" type="checkbox"/> List and value of ongoing Projects with UNDP and other national/multi-national organization with contact details of clients and current completion ratio of each ongoing project; <input checked="" type="checkbox"/> Statement of satisfactory Performance (Certificates) from the top 2 clients in terms of Contract value in similar field; <input checked="" type="checkbox"/> Completed and signed CVs for the proposed key Personnel; <input checked="" type="checkbox"/> Minimum no. of staff with the required qualification and experience; 14 personnel, o/w 1 Civil Engineer, 2 H-vac (heating, ventilation, and air conditioning) Engineers, 1 safety assurance specialist, 10 Specialist (2 Installers, 4 Plumbers, 2 Electricians, 2 Semi-skilled workers); <ul style="list-style-type: none"> ✓ Civil Engineer: University degree in civil engineering, architecture of relevant field (Diplomas and CVs) with at least 5 years of professional experience in construction Works. ✓ Hvac (heating, ventilation, and air conditioning) Engineers: University degree in mechanical engineering or HVAC engineering technology or relevant field with at least 5 years of professional experience ✓ Safety assurance specialist: at least 2 years of relevant work experience (CV). <input checked="" type="checkbox"/> Quality certificates for the main materials and devices to be used: solar water heater with tank of at least 250l, electronic remote control for solar water heater, plastic pipe set with aluminium layer. <input checked="" type="checkbox"/> Warranty letter for solar water heater device - 3 years. <input checked="" type="checkbox"/> Necessary equipment (owned or rented) Diesel generator (2 KW, 2 pcs), Rotary hammer two-speed (0.5 KW, 2 pcs), Slow-speed drill (0.6 KW, 2 pcs), Electric screwdriver (0.3 Kw, 2 pcs), Iron for welding plastic pipes (1.2 KW, 2 pcs), Safety grinder (0.9 KW, 2 pcs).
Quotation validity period	Quotations shall remain valid for 90 days from the deadline for the Submission of Quotation.
Price variation	No price variation due to escalation, inflation, fluctuation in exchange rates, or any other market factors shall be accepted at any time during the validity of the quotation after the quotation has been received.
Partial Quotes	<input checked="" type="checkbox"/> Not permitted
Alternative Quotes	<input checked="" type="checkbox"/> Not permitted
Payment Terms	<input checked="" type="checkbox"/> 100% within 30 days after receipt of goods, works and/or services and submission of payment documentation.

	<input checked="" type="checkbox"/> Payment will be linked to every stage of works envisaged in the contract. UNDP shall effect payment of the invoices after receipt of the certificate of payment issued by the Engineer, approving the amount contained in the invoice. The Engineer may make corrections to that amount, in which case UNDP may effect payment for the amount so corrected. Payment will be made in GEL according to existing UN Official Rate of Exchange at the date of payment.
Conditions for Release of Payment	<input checked="" type="checkbox"/> Passing Inspection, Complete Installation <input checked="" type="checkbox"/> Passing all Testing <input checked="" type="checkbox"/> Written Acceptance of Goods and Works, based on full compliance with RFQ requirements
Contact Person for correspondence, notifications and clarifications	<p>E-mail address: Natia.gobejishvili@undp.org Attention: Quotations shall not be submitted to this address but to the address for quotation submission above. Otherwise, offer shall be disqualified. Any delay in UNDP's response shall be not used as a reason for extending the deadline for submission, unless UNDP determines that such an extension is necessary and communicates a new deadline to the Proposers.</p>
Clarifications	<p>Requests for clarification from bidders will not be accepted any later than 5 days before the submission deadline. Responses to request for clarification will be communicated Via e-mail by 04 March 2021</p>
Evaluation method	<input checked="" type="checkbox"/> The Contract or Purchase Order will be awarded to the lowest price substantially compliant offer.
Evaluation criteria	<input checked="" type="checkbox"/> Full compliance with all requirements as specified in Annex 1 <input checked="" type="checkbox"/> Full acceptance of the General Conditions of Contract
Right not to accept any quotation	<p>UNDP is not bound to accept any quotation, nor award a contract or Purchase Order</p>
Right to vary requirement at time of award	<p>At the time of award of Contract or Purchase Order, UNDP reserves the right to vary (increase or decrease) the quantity of services and/or goods, by up to a maximum twenty-five per cent (25%) of the total offer, without any change in the unit price or other terms and conditions.</p>
Type of Contract to be awarded	<input checked="" type="checkbox"/> Contract Face Sheet will be used for Long-Term Agreement and if an LTA will be signed, Contract for Civil Works will trigger the call-off and will be signed with the selected company for provision and installation of the SWH devices in specific households.)
Expected date for contract award.	<p>30 April 2021</p>
Publication of Contract Award	<p>UNDP will publish the contract awards valued at USD 100,000 and more on the websites of the CO and the corporate UNDP Web site.</p>
Policies and procedures	<p>This RFQ is conducted in accordance with UNDP Programme and Operations Policies and Procedures</p>
UNGM registration	<p>Any Contract resulting from this RFQ exercise will be subject to the supplier being registered at the appropriate level on the United Nations Global Marketplace (UNGM) website at www.ungm.org.</p>

	The Bidder may still submit a quotation even if not registered with the UNGM, however, if the Bidder is selected for Contract award, the Bidder must register on the UNGM prior to contract signature.
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ANNEX 1: SCHEDULE OF REQUIREMENTS

Provision and installation of Vacuum solar water heater in eight Municipalities

1. Background

Within the framework of the third phase of ENPARD (ENPARD III), UNDP Georgia is implementing the project “Improving Rural Development in Georgia” (IRDG). The project contributes to improved governance in rural development, rural economic diversification and sustainable environmental management. The project’s activities will be carried out at national level and focus at local level on 8 target municipalities (Lagodekhi, Dedoplistskaro, Tetritskaro, Borjomi, Akhalkalaki, Kazbegi, Keda and Khulo). It will continue until April 2022.

The project set the target to provide households within its target municipalities with Solar Water heaters (SWH) to improve their energy efficiency and the well-being of the occupants. In so doing, it wants to support Georgian companies to discover and develop the rural market for thermal insulation.

Households in rural Georgia cover over 84% of their heating needs with wood and other conventional sources. As a consequence, the extensive use of fuelwood and other inefficient biomass for cooking, heating and warm water in rural Georgia has direct negative consequences on the environment and the climate, as chopping down trees for fuelwood is causing forest and land degradation and generate sizeable carbon emissions. It also represents a high burden for rural households in terms of health due to indoor air pollution (Georgia has the world’s highest mortality rate due to outdoor and indoor air pollution) and generates negative social and economic impacts due to illegal logging and trading of timber.

But the negative effects of those traditional heating systems go beyond health, mortality and environment. Rural households suffer from widespread energy poverty, spending in average, depending upon the source used, between GEL 850 and GEL 1,900 annually for energy needs.

The potential market size is enormous: Within the 8 IRDG target municipalities, about 6% had (before COVID-19) a monthly household income of GEL 1,500 to GEL 3,000, and 5% of more than GEL 5,000 (vs. an average overall rural income of GEL 1,014.3). Together, these 8 municipalities comprise about 65,000 households. If only these top 11% income earners are considered as market it yields a potential market size of 7,150 households, i.e., 7,150 units.

Developing the market for insulation in these 8 municipalities shall only be the starting point. In the whole of Georgia, rural households spend annually between GEL 500 million and GEL 1,000 million only for room-heating, cooking and warm water, mostly based on traditional sources of fuel. Depending upon the targeted return on investment, the market potential is therefore staggering.

2. Statement of works

UNDP wishes to obtain quotations from qualified contractors with experience on provision of Vacuum Solar Water heater installation. Activities will be carried out at local level on 8 target municipalities (Lagodekhi, Dedoplistskaro, Tetrtskaro, Borjomi, Akhalkalaki, Kazbegi, Keda and Khulo).

- 1) Municipality Keda – climate Zone 2
- 2) Municipality Khulo - climate Zone 2
- 3) Municipality of Lagodekhi - climate zone 2
- 4) Municipality of Dedoplistskaro - climate Zone 2
- 5) Municipality of Tetrtskaro - climate Zone 3
- 6) Municipality of Borjomi - climate Zone 3
- 7) Municipality of Akhalkalaki - climate Zone 3
- 8) Municipality of Kazbegi - climate Zone 3

Within each municipality/municipal region selected by the UNDP IRDG project, the selected company is obliged to accept requests for the installation of vacuum SWH from anywhere within the eight municipal boundaries at the agreed prices offered under the LTA. It is not possible to refuse any location from where a request for works has been expressed.

General Standards and Codes:

- 1) While performing installation works all safety requirements and fire prevention measures must be strictly adhered to.
- 2) All danger zones during installation works must be clearly outlined and warning signs placed at the limits of these zones.
- 3) All workers must be instructed about occupational safety and health, including fire prevention activities.
- 4) All means for fire prevention must be provided at the work site.
- 5) The storage of materials must be performed according to technological requirements.

- 6) All workers must be transported in line with occupational health and safety standards.
- 7) All materials must be transported safely and in line with environmental standards to avoid any risk of pollution.
- 8) All material must be obtained through legal and officially licensed channels.
- 9) When performing any kind of construction, installation and transportation, the technical safety requirements must be adhered to: SNIP III – 4-80 "Safety Technic in Construction".
- 10) All workers must be registered, treated with dignity and respect, and punctually paid according to contractual agreements and in line with Georgian law.

The Bidder shall furnish the following warranties and certificates:

- ✓ Quality certificates for the main materials and devices to be used: solar water heater with tank of at least 250l, electronic remote control for solar water heater, plastic pipe set with aluminium layer.
- ✓ Warranty letter for solar water heater device - 3 years.

Description of the climatic conditions in the target municipalities

Akhalkalaki, Climate Zone 3

Latitude 41°25', longitude 43°29'; Elevation above sea level 1717 m; Climatic I b subregion; Average total solar radiation on the horizontal surface at 4.48 kWh / day / m²; Average total solar radiation on the vertical surface at 3.49 kWh / day / m²; According to European standard of heating: baseline heating temperature of 18 °C; threshold temperature 15,5 °C; HDD 15.5 = 4570 degrees / day; Duration of heating season 334 days; Calculated heating temperature -16 °C, average temperature of the heating season -1.2 °C. Absolute minimum air temperature -38 °C; Absolute maximum air temperature +37 °C; Average annual air temperature +4.9 °C; Highest wind speed of to 10 year period 26 m / s; Annual air relativity average humidity 73%; Snow cover weight 60 kg/m²; Annual rainfall amount 542 mm.

Will be used U value for zone 3. Normalized energy specific losses during heating season (kWh / m²): 36.6 from walls; 222.6 from windows; 24.5 from the roof; 27.7 from the overlap and 171.2 from the vertical window.

Borjomi, Climate Zone 2

Latitude 41°25', longitude 43°29'; Elevation above sea level 789 m; Climatic II b subregion; Average total solar radiation on the horizontal surface at 4.03 kWh / day / m²; Average total solar radiation on the vertical surface at 2,98 kWh / day / m²; According to European standard of heating:

baseline heating temperature of 18 °C; threshold temperature 15,5 °C; HDD 15.5 = 3230 degrees / day; Duration of heating season 243 days; Calculated heating temperature -11 °C, average temperature of the heating season 1.1 °C. Absolute minimum air temperature -28 °C; Absolute maximum air temperature +37 °C; Average annual air temperature +9,1 °C; Highest wind speed of to 10 year period 19 m / s; Annual air relative humidity 77%; Snow cover weight 50 kg/m²; Annual rainfall amount 653 mm

Will be used U value for zone 3. Normalized energy specific losses during heating season (kWh / m²): 36.6 from walls; 197,6 from windows; 20.3 from the roof; 23,1 from the overlap and 166,8 from the vertical window.

Dedoplistskaro, Climate Zone 2

Latitude 41°50', longitude 43°24'; Elevation above sea level 800 m; Climatic II b subregion; Average total solar radiation on the horizontal surface at 4.08 kWh / day / m²; Average total solar radiation on the vertical surface at 3,03 kWh / day / m²; According to European standard of heating: baseline heating temperature of 18 °C; threshold temperature 15,5 °C; HDD 15.5 = 3230 degrees / day; Duration of heating season 243 days; Calculated heating temperature -11 °C, average temperature of the heating season 1.1 °C. Absolute minimum air temperature -26 °C; Absolute maximum air temperature +35 °C; Average annual air temperature +10,1 °C; Highest wind speed of to 10 year period 30 m / s; Annual air relative humidity 76%; Snow cover weight 50 kg/m²; Annual rainfall amount 648 mm.

Will be used U value for zone 2. Normalized energy specific losses during heating season (kWh / m²): 36.6 from walls; 197,6 from windows; 20.3 from the roof; 23,1 from the overlap and 166,8 from the vertical window.

Kazbegi, Climate Zone 3

Latitude 42°40', longitude 44°39'; Elevation above sea level 1747 m; Climatic I g subregion; Average total solar radiation on the horizontal surface at 4.65 kWh / day / m²; Average total solar radiation on the vertical surface at 3,78 kWh / day / m²; According to European standard of heating: baseline heating temperature of 18 °C; threshold temperature 15,5 °C; HDD 15.5 = 4777 degrees / day; Duration of heating season 365 days; Calculated heating temperature -14 °C, average temperature of the heating season -0,2 °C. Absolute minimum air temperature -34 °C; Absolute maximum air temperature +32 °C; Average annual air temperature +4.9 °C; Highest wind speed of to 10 year period 21 m / s; Annual air relative humidity 68%; Snow cover weight 84 kg/m²; Annual rainfall amount 786 mm.

Will be used U value for zone 2. Normalized energy specific losses during heating season (kWh / m²): 37,3 from walls; 225,6 from windows; 25,0 from the roof; 28,3 from the overlap and 171,4 from the vertical window.

Keda, Climate Zone 3

Latitude 41°36', longitude 44°57'; Elevation above sea level 257 m; Climatic III b subregion; Average total solar radiation on the horizontal surface at 3,87 kWh / day / m²; Average total solar radiation on the vertical surface at 2,67 kWh / day / m²; According to European standard of heating: baseline heating temperature of 18 °C; threshold temperature 15,5 °C; HDD 15.5 = 2117 degrees / day; Duration of heating season 212 days; Calculated heating temperature -5 °C, average temperature of the heating season 4,6 °C. Absolute minimum air temperature -15 °C; Absolute maximum air temperature +42 °C; Average annual air temperature +12.7 °C; Highest wind speed of to 10 year period 22 m / s; Annual air relative humidity 77%; Snow cover weight 130 kg/m²; Annual rainfall amount 1652 mm.

Will be used U value for zone 2. Normalized energy specific losses during heating season (kWh / m²): 23,7 from walls; 164,5 from windows; 15,6 from the roof; 17,8 from the overlap and 154.1 from the vertical window.

Khulo, Climate Zone 3

Latitude 41°39', longitude 44°19'; Elevation above sea level 914 m; Climatic II b subregion; Average total solar radiation on the horizontal surface at 4,11 kWh / day / m²; Average total solar radiation on the vertical surface at 3,06 kWh / day / m²; According to European standard of heating: baseline heating temperature of 18 °C; threshold temperature 15,5 °C; HDD 15.5 = 2676 degrees / day; Duration of heating season 243 days; Calculated heating temperature -5 °C, average temperature of the heating season 3,3 °C. Absolute minimum air temperature -18 °C; Absolute maximum air temperature +39 °C; Average annual air temperature +10.4 °C; Highest wind speed of to 10 year period 19 m / s; Annual air relative humidity 70%; Snow cover weight 169 kg/m²; Annual rainfall amount 1228 mm.

Will be used U value for zone 2. Normalized energy specific losses during heating season (kWh / m²): 27,5 from walls; 183,1 from windows; 18,2 from the roof; 20,7 from the overlap and 162,1 from the vertical window.

Lagodekhi, Climate Zone 2

Latitude 41°49', longitude 46°18'; Elevation above sea level 435 m; Climatic II b subregion; Average total solar radiation on the horizontal surface at 3,91 kWh / day / m²; Average total solar radiation on the vertical surface at 2,86 kWh / day / m²; According to European standard of heating: baseline heating temperature of 18 °C; threshold temperature 15,5 °C; HDD 15.5 = 2421 degrees / day; Duration of heating season 212 days; Calculated heating temperature -8 °C, average temperature of the heating season 3,3 °C. Absolute minimum air temperature -23 °C; Absolute

maximum air temperature +38 °C; Average annual air temperature +12.6 °C; Highest wind speed of to 10 year period 24 m / s; Annual air relativity average humidity 72%; Snow cover weight 50 kg/m²; Annual rainfall amount 1076 mm.

Will be used U value for zone 2. Normalized energy specific losses during heating season (kWh / m²): 25,9 from walls; 175,2 from windows; 17 from the roof; 19,4 from the overlap and 159 from the vertical window.

Tetritskaro, Climate Zone 2

Latitude 41°33', longitude 44°28'; Elevation above sea level 1143 m; Climatic II b subregion; Average total solar radiation on the horizontal surface at 4,2 kWh / day / m²; Average total solar radiation on the vertical surface at 3,1 kWh / day / m²; According to European standard of heating: baseline heating temperature of 18 °C; threshold temperature 15,5 °C; HDD 15.5 = 3434 degrees / day; Duration of heating season 212 days; Calculated heating temperature -11 °C, average temperature of the heating season 1,7 °C. Absolute minimum air temperature -26 °C; Absolute maximum air temperature +34 °C; Average annual air temperature +8.6 °C; Highest wind speed of to 10 year period 31 m / s; Annual air relativity average humidity 71%; Snow cover weight 50 kg/m²; Annual rainfall amount 742 mm.

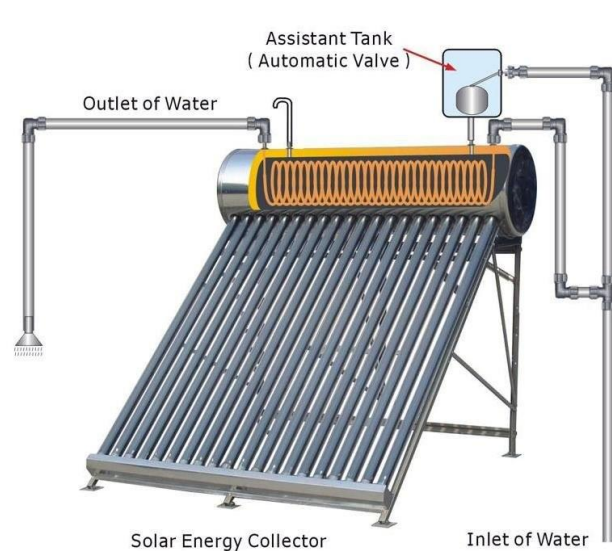
Will be used U value for zone 2. Normalized energy specific losses during heating season (kWh / m²): 31,7 from walls; 202,2 from windows; 21 from the roof; 23,9 from the overlap and 168 from the vertical window.

Installation of the solar water heater

The solar water heater should be installed on the roof of a up to 3 storey house plus attic, at a height of about 5-6 m. The metal bracket should be installed to the wooden constructions of the roof, on rafters and beam. The installation location of the solar water heater should be selected so as to receive the maximum amount of insolation during the day. Necessary condition, installation should be done on the south side. Should be installed as close as possible to hot water points. The total length of the pipeline should not exceed 30 m. The piping should be inserted from the installation into the attic and then should go to the hot water points. Pipes and all fittings must be sealed with thermal insulation. It is necessary to grounding the electric device placed in the tank.

Installation scheme of the solar water heater is given in fig. 1.

Fig. 1. Installation scheme of the solar water heater



Quality control of SWH installation works (monitoring)

- Hot water polypropylene pipes with aluminum foil should be used for installation. Pipes should be installed with a 2% inclination to drain the system if necessary;
- The roof at the metal supports should be carefully cut out on the perimeter of the support. After fixing the system, these places should be treated with waterproofing material;
- It is necessary to ground the electric heater placed in the tank;
- Should be checked sealing of pipe and fittings connections;
- After checking the system for tightness, all pipelines shall be covered with heat insulation.

- After completion of all installation work, hydraulic testing of the solar collecting system is carried out, after that the start-up and thermal testing of the system shall be performed. Thermal tests are subject to each system that is connected to solar collectors loop.

Technical specifications

1. Pressurized Solar Water Heater. Tank, at least -250 l., vacuum tube, at least -30 pc, absorber area, at least -4 m²

Inner tank: SUS 304 2B Food Grade Stainless Steel, Outer tank: Galvanized Metal, Insulation: 50 mm polyurethane, Working pressure of coil in the water tank : \leq 8 bar; Max. working temperature: 100°C, electric heater 1.5 KW.

2. Vacuum tube with heat pipe (Absorber)

Dimension: Φ 58mm \times 1800mm, Effective area 0.13 m², Vacuum degree $\leq 5 \times 10^{-3}$ Pa, Absorption coefficient: ≥ 0.93 , Hail proof: 35mm, Wind resistance: 30m/s (grade 11) Efficient: 8L/day per tube. By circulating antifreeze liquid (glycol or other) in the system, collector performance should be ensured - under condition of -40 degree celsius.

3. Polypropylene hot water pipe with aluminum foil:

Diameter 20, 25 mm. Operating pressure 16 bar, working temperature -10, + 95 degrees. Exploitation period 50 years, maximum deformation not more than 1 mm per 1 longitudinal meter.

ტექნიკური სპეციფიკაციები

1. მზის წყალგამაცხელებელი წნევიანი, არანაკლებ -250 ლ. ავზით, მილაკების რაოდენობა, არა ნაკლებ -30 ც. აბსორბერის ფართი, არანაკლებ -4 მ².

შიდა რეზერვუარის მასალა SUS 304 2B უჟანგავი ფოლადი, გარე რეზერვუარი : გალვანიზებული ლითონი, იზოლაცია: 50 მმ პოლიურეთანი, ხვეულას სამუშაო წნევა წყლის ავზში: \leq 8 ბარი; მაქსიმ. სამუშაო ტემპერატურა: 100 °C, ელექტრო ტენი 1.5 კვტ.

2. ვაკუუმური მილი გამათბობელი მილით (აბსორბერი)

ზომები - გარე დიამეტრი 58 მმ, სიგრძე 1800 მმ. მილაკის ეფექტური ფართი 0.13 მ², ვაკუუმის ხარისხი $\leq 5 \times 10^{-3}$ Pa, შთანთქმის კოეფიციენტი ≥ 0.93 , სეტყვაზე მდგრადობა 35 მმ., ქარის დატვირთვა 30 მ/წმ., სისტემაში უყინავი სითხის (გლიკოლი ან სხვა) ცირკულაციით უნდა იყოს უზრუნველყოფილი კოლექტორის მუშაობა -40 გრად. პირობებში.

3. ცხელი წყლის პოლიპროპილენის მილი არმირებული ალუმინის ფოლგით

დიამეტრი 20, 25 მმ. საექსპლოატაციო წნევა 16 ატმოსფერო, სამუშაო ტემპერატურა -10, + 95 გრად. ექსპლოატაციის პერიოდი 50 წელი, მაქსიმალური დეფორმაცია არა უმეტეს 1 მმ 1 გრძივ მეტრზე.

Quality Control:

The Contractor shall be responsible for the quality of the works for the entire installation work within the Contract. Together with the proposal, the Contractor shall submit to UNDP a detailed proposal for providing Quality Assurance and Control of the Work for all works to be conducted. The proposal shall give details of the following:

- Quality Assurance organizational arrangement with Names, Qualifications and Work Experiences for all staff proposed for Quality Assurance and Control;
- Procedures to be followed in the task of Quality Assurance and Control;
- All equipment used on the installation sites shall go through test and quality control;
- Construction materials, items and equipment should meet international standards and ecological requirements and must have appropriate certificate(s);
- Construction norms and regulations (SNiP-III-4-80 safety norms for construction) requirements must be followed;
- Safety rules must be strictly observed;
- If electrical equipment or wiring is required, it has to correspond to International Electrotechnical Commission standards.
- All installations and equipment, supplied for SWH works must ensure maximal protection against electrical stroke. This requirement has to be the first and the most important argument when decisions are taken by the Contractor regarding the choice of materials and working methods as well as the equipping with details.

- All materials, fixtures, fittings and supplies furnished under the Contract shall be new and unused, of standard first-grade quality and of the best workmanship and design. No inferior or low-grade materials, supplies or articles will be approved or accepted, and all work of assembly and construction shall be done in a first-class and workmanlike manner
- The work shall be performed in accordance with applicable local and national laws, codes, requirements and regulations including safety, health, welfare of persons and others. The Contractor shall in general be fully conversant and comply with the relevant sections of all construction regulations enforceable by the law.

ANNEX 2: QUOTATION SUBMISSION FORM

Bidders are requested to complete this form, including the Company Profile and Bidder's Declaration, sign it and return it as part of their quotation along with Annex 3: Technical and Financial Offer. The Bidder shall fill in this form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions shall be accepted.

Name of Bidder:	Click or tap here to enter text.	
RFQ reference:	Click or tap here to enter text.	Date: Click or tap to enter a date.

Company Profile

Item Description	Detail
Legal name of bidder or Lead entity for JVs	Click or tap here to enter text.
Legal Address, City, Country	Click or tap here to enter text.
Website	Click or tap here to enter text.
Year of Registration	Click or tap here to enter text.
Legal structure	Choose an item.
Are you a UNGM registered vendor?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, insert UNGM Vendor Number
Quality Assurance Certification (e.g. ISO 9000 or Equivalent) (If yes, provide a Copy of the valid Certificate):	<input type="checkbox"/> Yes <input type="checkbox"/> No
Does your Company hold any accreditation such as ISO 14001 or ISO 14064 or equivalent related to the environment? (If yes, provide a Copy of the valid Certificate):	<input type="checkbox"/> Yes <input type="checkbox"/> No

Does your Company have a written Statement of its Environmental Policy? <i>(If yes, provide a Copy)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Does your organization demonstrate significant commitment to sustainability through some other means, for example internal company policy documents on women empowerment, renewable energies or membership of trade institutions promoting such issues <i>(If yes, provide a Copy)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Is your company a member of the UN Global Compact	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Bank Information	Bank Name: Click or tap here to enter text. Bank Address: Click or tap here to enter text. IBAN: Click or tap here to enter text. SWIFT/BIC: Click or tap here to enter text. Account Currency: Click or tap here to enter text. Bank Account Number: Click or tap here to enter text.			
Previous relevant experience: 3 contracts				
Name of previous contracts	Client & Reference Contact Details including e-mail	Contract Value	Period of activity	Types of activities undertaken

Bidder's Declaration

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	Requirements and Terms and Conditions: I/We have read and fully understand the RFQ, including the RFQ Information and Data, Schedule of Requirements, the General Conditions of Contract, and any Special Conditions of Contract. I/we confirm that the Bidder agrees to be bound by them.
<input type="checkbox"/>	<input type="checkbox"/>	I/We confirm that the Bidder has the necessary capacity, capability, and necessary licenses to fully meet or exceed the Requirements and will be available to deliver throughout the relevant Contract period.
<input type="checkbox"/>	<input type="checkbox"/>	Ethics: In submitting this Quote I/we warrant that the bidder: has not entered into any improper, illegal, collusive or anti-competitive arrangements with any Competitor; has not directly or indirectly approached any representative of the Buyer (other than the Point of Contact) to lobby or solicit information in relation to the RFQ ;has not attempted to influence, or provide any form of personal inducement, reward or benefit to any representative of the Buyer.
<input type="checkbox"/>	<input type="checkbox"/>	I/We confirm to undertake not to engage in proscribed practices, , or any other unethical practice, with the UN or any other party, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to the UN and we have read the United Nations Supplier Code of Conduct : https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct and acknowledge that it provides the minimum standards expected of suppliers to the UN.
<input type="checkbox"/>	<input type="checkbox"/>	Conflict of interest: I/We warrant that the bidder has no actual, potential, or perceived Conflict of Interest in submitting this Quote or entering a Contract to deliver the Requirements. Where a Conflict of Interest arises during the RFQ process the bidder will report it immediately to the Procuring Organisation's Point of Contact.
<input type="checkbox"/>	<input type="checkbox"/>	Prohibitions, Sanctions: I/We hereby declare that our firm, its affiliates or subsidiaries or employees, including any JV/Consortium members or subcontractors or suppliers for any part of the contract is not under procurement prohibition by the United Nations, including but not limited to prohibitions derived from the Compendium of United Nations Security Council Sanctions Lists and have not been suspended, debarred, sanctioned or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization.
<input type="checkbox"/>	<input type="checkbox"/>	Bankruptcy: I/We have not declared bankruptcy, are not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against them that could impair their operations in the foreseeable future.
<input type="checkbox"/>	<input type="checkbox"/>	Offer Validity Period: I/We confirm that this Quote, including the price, remains open for acceptance for the Offer Validity.
<input type="checkbox"/>	<input type="checkbox"/>	I/We understand and recognize that you are not bound to accept any Quotation you receive, and we certify that the goods offered in our Quotation are new and unused.
<input type="checkbox"/>	<input type="checkbox"/>	By signing this declaration, the signatory below represents, warrants and agrees that he/she has been authorised by the Organization/s to make this declaration on its/their behalf.

Signature: _____

Name: Click or tap here to enter text.

Title: Click or tap here to enter text.

Date: Click or tap to enter a date.

ANNEX 3: TECHNICAL AND FINANCIAL OFFER – WORKS

Bidders are requested to complete this form, sign it and return it as part of their quotation along with Annex 2 Quotation Submission Form. The Bidder shall fill in this form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions shall be accepted.

Name of Bidder:	Click or tap here to enter text.	
RFQ reference:	Click or tap here to enter text.	Date: Click or tap to enter a date.

Technical Offer

Provide the following:

- *a brief description of your qualification and capacity that is relevant to the Scope of Works;*
- *a brief method statement and implementation plan;*
- *team composition and CVs of key personnel*

Financial Offer

Provision and Installation of Solar water heater System at least 250 l

წყლის გამათბობელის მონტაჟი არა ნაკლებ 250 ლ.

BOQ

#	Works description სამუშაოთა დასახელება	Unit განზომილება	Quantity რაოდენობა	Cost of materials, USD მასალების ღირებულება	Wages, USD ხელფასი	Total unit cost, USD სულ ერთეულის ღირებულება	Country of production მწარმოებელი ქვეყანა	Brand's Name ბრენდის დასახელება
1	2	3	4	5	6	7	8	9
	Installation works სამონტაჟო სამუშაოები							
1	Solar water heater at least -250 l.with pressure, vacuum tube 58*1800/30 - at least - 4 m2 მზის წყალგამაცხელებელი წნევიანი არა ნაკლებ - 250 ლ. ვაკუუმური მილაკი 58*180/30 -არა ნაკლებ -4 მ2	set	1.0					
2	Vacuum Collector's support metal construction ვაკუუმური კოლექტორის სამაგრი ლითონის კონსტრუქცია	set	1.0					
3	Electronic remote control for solar water heater მზის წყალგამაცხელებლის ელექტრონული მართვის პულტი	set	1.0					
4	Stuff of the automatic systems at least - 3 l. სისტემის ავტომატური შემავესებელი არა ნაკლებ - 3 ლ.	pc	1.0					

5	PPR pipe set with aluminium foil 25 mm, PN16 ალუმინით არმირებული პოლიპროპილენის ცხელი წყლის მილი 25 მმ, პნ-16	m	1.0					
6	PPR pipe set with aluminium foil 20 mm, PN16 ალუმინით არმირებული პოლიპროპილენის ცხელი წყლის მილი 20 მმ, პნ-16	m	1.0					
7	High temperature proofing Thermo-insulation 20, 25 mm შეფუთვა მაღალტემპერატურული 20, 25 მმ	m	1.0					
8	PPR pipe 20 mm, PN16 პოლიპროპილენის წყლის მილი 20 მმ, პნ-16	m	1.0					
9	PPR pipe 25 mm, PN16 პოლიპროპილენის წყლის მილი 25 მმ, პნ-16	m	1.0					
10	Spheric valve 25 mm სფერული ვენტილი 25 მმ	pc	1.0					
11	Spheric valve 20 mm სფერული ვენტილი 20 მმ	pc	1.0					
12	Fittings 20 mm, (elbow, adapter, clutch, tee) ფიტინგები 20 მმ (მუხლი, გადამყვანი, ქურო, სამკაპი)	pc	1.0					
13	Fittings 25 mm, (elbow, adapter, clutch, tee) ფიტინგები 25 მმ (მუხლი, გადამყვანი, ქურო, სამკაპი)	pc	1.0					
14	Sleeve with inner thread 20 mm "ამერიკანკა" შ/ხ 20 მმ.	pc	1.0					
15	Sleeve with inner thread 25 mm "ამერიკანკა" შ/ხ 25 მმ.	pc	1.0					
16	Safety valve 1/2" 8 bar დამცავი სარქველი 1/2" 8 ატმ.	pc	1.0					
17	Air-valve 1/2" ვანტუხი 1/2"	pc	1.0					

18	Thermometer -Pressure gauge 1/2" თერმომანომეტრი 1/2"	pc	1.0					
19	Electr. wire with double insulation 3X2.5 sq.mm +safety corrugated pipe ელ. სადენი ორმაგი იზოლაციით 3X2.5 მმ2 +დამცავი მილი გოფრე	m	1.0					
20	Electr. wire with double insulation 2X1,5 sq.mm +safety corrugated pipe ელ. სადენი ორმაგი იზოლაციით 2X1,5 მმ2 +დამცავი მილი გოფრე	m	1.0					
21	Starting-testing of the system, hydraulic and thermal test სისტემის გაშვება-გამართვა, ჰიდრავლიკური და თერმული ტესტი	set	1.0					
	Accruals დარიცხვები							
	Transportation expenses (material resources) სატრანსპორტო ხარჯები (მატერიალური რესურსიდან)	%						
	Overhead expenses ზედნაღები ხარჯები	%						
	Planned Profit გეგმიური დაგრვება	%						
	Unforeseen expenses გაუთვალისწინებელი ხარჯები	%						

Necessary equipment

1. Diesel generator 2 KW 2 pcs
2. Rotary hammer two-speed 0.5 KW 2 pcs

3.	Slow-speed drill	0.6 KW	2 pcs
4.	Electric screwdriver	0.3 Kw	2 pcs
5.	Iron for welding plastic pipes.	1.2 KW	2 psc
6.	Safety grinder	0.9 KW	2 psc

საჭირო მექანიზმები

1.	დიზელ გენერატორი	2 კვტ	2 ცალი
2.	პერფორატორი 2 სიჩქარიანი	0,5 კვტ	2 ცალი
3.	დრელი დაბალ სიჩქარიანი	0,6 კვტ	2 ცალი
4.	სჭვალსახრახნი	0,3 კვტ	2 ცალი
5.	უთო პლასტმასის მილების	1.2 კვტ	2 ცალი
6.	„ბალგარკა“ უსაფრთხო	0.9 კვტ	2 ცალი

Compliance with Requirements

	You Responses		
	Yes, we will comply	No, we cannot comply	If you cannot comply, pls. indicate counter – offer
Validity of Quotation	<input type="checkbox"/>	<input type="checkbox"/>	Click or tap here to enter text.
Payment terms	<input type="checkbox"/>	<input type="checkbox"/>	Click or tap here to enter text.

Quality Certificates	<input type="checkbox"/>	<input type="checkbox"/>	Click or tap here to enter text.
Warranty (remote control and SWH device)	<input type="checkbox"/>	<input type="checkbox"/>	Click or tap here to enter text.

I, the undersigned, certify that I am duly authorized to sign this quotation and bind the company below in event that the quotation is accepted.	
<i>Exact name and address of company</i> Company Name Click or tap here to enter text. Address: Click or tap here to enter text. Click or tap here to enter text. Phone No.: Click or tap here to enter text. Email Address: Click or tap here to enter text.	Authorized Signature: Date: Click or tap here to enter text. Name: Click or tap here to enter text. Functional Title of Authorised Signatory: Click or tap here to enter text. Email Address: Click or tap here to enter text.