Technical Design ToR

Document for the ToR Technical Design

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#  Background

The energy consumption for space heating in public, commercial and residential buildings accounts for more than 30% of the total energy consumption in most countries of the region, as previous construction and heating methods did not focus on energy efficiency. As a result, a highly inefficient energy use intensifies the impact of rising energy prices on households and public institutions.

The majority of the housing stock, especially in urban areas, consists of pre-fabricated multi-story apartment buildings that are generally of poor construction, badly insulated and maintained and as a result the buildings show a low level of energy efficiency and provide poor living comfort. Mostly based on the soviet GOST and SNIP (State Standard and Sanitary Norms and Rules) standards, current construction standards and practices for residential or public buildings or are behind the corresponding Western European and international standards and not effectively applied in the refurbishment of old buildings and the construction of new buildings. Furthermore many public facilities such as district heating systems, public lighting systems etc. are in a poor technical condition and are operated at a low efficiency.

The Union “Energy Efficiency Center Georgia” in partnership with Telavi Municipality intends to implement several high quality energy efficiency and/or renewable energy measures in order to decrease the energy consumption against baseline energy consumption public buildings/facilities.

It is expected that the implemented measures will be developed and implemented according to proven Western European standards and practices in order to ensure the sustainability of the investment.

The project will be implemented according to the developed Sustainable Energy and/or Climate Action Plans aligned with the Covenant of Mayors requirements.

# Scope of Work

## . Definitions, Abbreviations

EE: Energy Efficiency

RE: Renewable Energy

EE/RE measure: individual and independent EE/RE measures (the measures can be planned and implemented individually from each other)

Example EE/RE measure 1: Insulation of the top floor in a kindergarten

Example EE/RE measure 2: Installation of a thermal solar system on the roof of the kindergarten

Sub project: a functional set of EE/RE measures which are usually implemented at the same construction site shall be defined as a sub project.

Example sub project 1: refurbishment of a public kindergarten comprising of insulation of the top floor, replacement of windows& doors and insulation of exterior walls (functional set of EE/RE measures which shall be implemented together)

Project: a project is defined as one sub project or several sub projects.

## 2.2. General Scope of Work

The Service Provider shall elaborate and deliver two (2) separate packages of final technical designs: Technical Design №1 for complete rehabilitation/refurbishment measures of Ikalto Kindergarten building and Technical Design №2 for complete thermal refurbishmentof the Ikalto Kindergarten building.

* **Technical Design №1** for complete rehabilitation/refurbishment of the building in the village of Ikalto in Telavi municipality means/implies and includes following drawings and design-estimated documentations:
1. List of the drawings;
2. Explanatory note;
3. Photos reflecting current situation;
4. Current plans, cuts;
5. Plans for dismantling (in case of works);
6. Rehabilitation works of rooms and corridors located on I and II floors;
7. Reconstructed plans of internal repairs of the building (classification of flooring);
8. Flooring arrangement (according to the type of floor);
9. Functional plans (taking into account the inventory);
10. After installation of new PVS windows & doors filling the grooves/airspaces on the perimeter (finishing works);
11. Finishing works related to the installation of internal new electric system;
12. A constructive design/project (in case of constructive measures). Explanatory card on the sustainability and reconstruction works of the existing building, plans, slopes, armature drawings, nodes, strengthening of existing structures and so on;
13. Project organization project;
14. The plan/schedule of works;
15. Volumes and costs of performance works;
* **Technical Design №2** for complete thermal refurbishmentimplies the introduction of various EE/RE measures in the building, which will facilitate energy saving and CO2 emissions’ reduction. In accordance with developed Energy Audits (Annex 5), the following EE/RE measures are planned for the Ikalto kindergarten.
1. **Thermal refurbishment of one (1) municipal building located in Ikalto Village of Telavi municipality**

Elaboration of the final Technical Design №2 of the thermal refurbishment measures for the following building:

|  |  |  |
| --- | --- | --- |
| **No** | **Building type/address** | **Building description (existing situation)** |
| **1** | ***Municipal Building:*** ***Ikalto Kindergarten***Address:Village Ikalto, Telavi municipality; GEORGIA | The municipal building which should be refurbished is a kindergarten comprising of one (1) building block located in village Ikalto of Telavi municipality. The 2-storeid building was constructed in 1969 year and the most recent reconstruction/repair works was undertaken in 1971. The kindergarten contains with playing rooms, bedrooms, hall, administration, gym and kitchen and toilets. The building is connected with cold water supply and sewage systems as well as electricity and natural gas (NG) supply. The Building is built with clay bricks (outside walls) with thickness 40cm. Just small part of it includes concrete blocks with 20 cm thickness which is also source of heat losses. The building mainly has old wooden frame windows with single glazing and old wooden doors in very poor condition; also about 30% from total windows is PVC framed windows with double-glazing that are not good condition. The sloped roof renovated in 2012 with unheated attic space is covered with tin plates. The ground floor of concrete slab from inside is covered mainly with wooden parquet in bad condition. The floor of the entrances and kitchen/toilets is paved with ceramic plates. From outside ground floor without thermal insulation has unheated space which is source of the heat losses. The building has a rainwater management system though not in good condition and needs to be repaired; the front side of the building (balcony) has a leakage of rain water. The existing original/natural ventilation system is not working any more.The Kindergarten has (5) five groups and occupies following rooms: play/dining rooms, bedrooms, event hall, gym, teachers’ room, nurse’s room, governor’s room, manager’s room, dressing rooms, store-rooms, kitchen/toilets, entrance/corridors; the building is 2-storied with sloped roof + basement. Total area of the building: 1125m2; Total heated area: 961m2; Basement area: 533m². For general layouts of the building see annex #1 Technical Design Ikalto Kindergarten[[1]](#footnote-2).The general technical condition of the building needs to be checked. |
| Type of EE/RE measures to be implemented | 1.1.Refurbishment of the sloped roof along with rain water management system and thermal insulation of the roof (attic floor); 1.2.Thermal insulation of the exterior walls; 1.3.Thermal insulation of the basement ceiling;1.4.Replacement of old wooden windows/doors with PVC double glazed ones; 1.5.Replacement of the existing lighting system with EE lighting system along with refurbishment of internal electric system;1.6. Installation of (central and/or individual) new ventilation system for groups/playing rooms, bedrooms, gym and kitchen; 1.7. Installation the autonomous heating system (AHS) working on solid fuel (vineyard pruning resides) and construction of boiler and storage houses;1.8. Installation of solar water heating system for preparing hot water connected to the AHS and other refurbishment measures that are required to implement the EE measures. |

**Detailed description of RE/EE measures for Ikalto kindergarten**

## 1.1Thermal insulation of pitched roof (insulation of the attic floor)

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| **Measure: Thermal insulation of the attic floor** |
| **Description of the measure:** Insulation of the attic floor (which is 20cm concrete slab) with 20 cm mineral wool along with vapour barrier membrane and with consideration of rainwater system installation; For recommended U-values (R) for refurbished structures of buildings please see Annex 2.**Roof area (attic floor):** 533 m². |

## 1.2Thermal insulation of the exterior walls

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| **Measure: Thermal refurbishment of exterior walls** |
| **Description of the measure:** Insulation of the exterior walls with10 cm mineral wool boards**Wall surface to be insulated (excl. windows/doors):** Totalarea441m² of exterior walls: 371m²(10cm mineral wool); basement walls (from ceiling down by 0.8 m)- 70 m² (XPS 10cm) with consideration of construction protective measures**Wall construction:** Brickwall - 40 cm; concrete block wall – 20 cm; For recommended U-values (R) for refurbished structures of buildings please, see Annex 2. |

## 1.3Thermal insulation of the basement ceiling;

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| **Measure: Thermal refurbishment of basement ceiling** |
| **Description of the measure:*** Insulation of the ceiling area by 10 cm EPS (expanded polystyrene foam) or XPS boards.
* Basement walls (inside) about 0.60 - 1 m down from the ceiling with 10cm EPS or XPS boards.

Total area:533 m²For recommended U-values (R) for refurbished structures of buildings, please see Annex 2. |

## 1.4Replacement of old wooden windows/doors with PVC double glazed ones;

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| **Measure: Installation of 241.4 m² of new 68 windows; Installation of 29.4 m² of new 9 doors;** |
| **Description of the measure:*** Replacing 241,4m² old wooden windows with double glazing PVC framed windows with advanced coating;
* Replacing 29.4 m² old doors with double glazing PVC framed windows with advanced coating
* Replacing standard PVC frame double glazing windows with double glazing PVC framed windows with advanced coating;

Total windows/door area:271 m²Windows to be replaced:241 m²Doors to be replaced: 30 m²For recommended U-values (R) for refurbished structures of buildings, please see Annex 2. |

1.5Replacement of the existing lighting system with EE lighting system along with refurbishment of internal electric system;

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| **Measure: Replacement of incandescent bulbs with LED luminaries along with refurbishment of internal electric system** |
| **Description of the measure:*** Replacement of the existing 85 units bulbs with new LED luminaries;
* The existing power supply system has to be renovated with consideration of safety rules;
 |

1.6Installation of (central and/or individual) new ventilation system(s) for groups/playing rooms, bedrooms, gym and kitchen& etc;

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| --- |
| **Measure: To install new ventilation system:** (**5) groups (playing/dining rooms& bedrooms), event hall, gym, teachers’ room, nurse’s room, governor’s room, manager’s room, store-rooms, dressing rooms, kitchen/toilets, entrance hall/corridors;** |
| **Description of the measure:**Install automatic (central and/or individual) ventilation system with heat recovery system. For the basic requirements for ventilation systems (individual and/or centralised), see annex 3. |

1.7. Installation the autonomous heating system (AHS) which includes solid fuel boiler working on vineyard pruning resides

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| ***Measure*: Removing non EE wooden stoves and installing new heating system**  |
| **Description of the measure:****The following measures will be implemented:*** Construction of a technical room for the boiler;
* Refurbishment/construction of a storage room for fuel;
* Installation of the biomass boiler incl. control system (vineyard pruning resides);
* Installing new central heating system (pipes, pumps, valves, expansion system, storage tank, etc.);
* Installation of a fuel supply system;
* Installation of a chimney;
* Installation of a 2-string heating system including radiators and thermostatic valves;
* Hydraulic balancing of the entire system;
 |

1.8. Installation of solar water heating system for preparing hot water connected to the AHS

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| **Measure: Installing new solar water heating system with capacity of 200 L** |
| **Description of the measure:*** Replacing existing hot water natural gas heating unit with solar water heating system 200L capacity;
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The scope of work includes the elaboration of the final technical design, the elaboration of the investment/operational costs, the elaboration of all documents for receiving all required permits, receiving all authority approvals (permits), the elaboration of the final tender documents and the assistance of “Energy Efficiency Centre Georgia” in cooperation with the Telavi Municipality during the project implementation.

The Service Provider will elaborate all documents in close cooperation with “Energy Efficiency Centre Georgia” and the Telavi Municipality and/or its delegated Project Team.

The final design of the EE/RE measures shall consider Western European standards and practices in order to secure the sustainability of the measures. In particular thermal refurbishment projects should consider advanced Western European energy performance standards for materials and approved installation practices. Technical guidelines which will be provided by the “Energy Efficiency Center Georgia” shall be considered during the elaboration of the final design of the EE/RE measures (see Annex 4:“Building Refurbishments”\_ENG&RU).

## Recommendation to EE measures on buildings refurbishment

**Refurbishment pitched roof:**

The measure should include the following working steps:

* Demolition of existing roof construction;
* Support construction;
* Roof cladding;
* Sub-roof (i.e. sub roof membrane);
* Rain gutter system;
* Roof penetrations;
* Natural ventilation of attic;
* Optional: loads and supporting system for solar systems;

Insulation of the attic roof see “thermal refurbishment of attic floor”.

**Thermal insulation of attic floor of pitched roof:**

The measure should include the following working steps:

* Cleaning of the attic floor
* Evening the attic floor with screed (in case of unevenness)
* Vapour barrier (sd>1500 mm)
* 2 layers of insulation material i.e. mineral wool 2 x 100 mm (total 200 mm insulation)
* Support construction for plywood boards as walk-able surface
* Diffusion open foil
* Plywood boards as walk-able surface

***In case the project doesn’t foresee the refurbishment of the roof, the existing roof construction must be structural in an acceptable condition (structural report is recommended) and the roof has to be water tight****.*

**Installation of new windows/doors:**

The measure should include the following working steps:

* Preparation of the window reveal, trowel-finished layer;
* Fixing of the window door element;
* Sealing of the window in three layers: inner sealing (diffusion tight), heat insulation, outer sealing layer (diffusion open, resistant to heavy rain);
* Application of interior/exterior window sills;

**Thermal refurbishment of walls and socle (dado)**

The measure should include the following working steps:

* Removal of all kind of equipment that is mounted onto external walls such as metal service staircase and ladders, air conditioning units, pipes, electric equipment, etc.
* Demolition of all building elements which jut out the façade like cantilevered porch roofs. Porch roofs should be replaced/renewed and reinstalled after insulation of the wall without heat bridges;
* Preparation of the wall surface/plaster (even surface and no loosen plaster etc.)
* Installation of insulation system including (adhesive, anchors, base coat, reinforcement, finishing coat);
* Application of reinforcement net for edges, window connection profiles, base profile, etc.
* Insulation of the plinth approx. 0.8 m below ground level with extruded polystyrene boards (XPS) and an additional protective and drainage layer. If the building has a heated basement, the hydrophobic insulation and the thermal insulation shall be applied until the foundation.
* Backfilling and installing of a new concrete sidewalk around the buildings;
* Heat bridge free reinstallation of removed equipment;

**Thermal insulation of basement (basement ceiling)**

The measure should include the following working steps:

* Removal of all pipes, cables, lamps, etc. from the ceiling;
* Preparation of the surface (even, solid surface), structural damages such as exposed and corroded reinforcement steel have to be improved;
* Application of a suitable insulation board (diffusion open, incombustible, resistant to moisture);

**Installation of LED lighting system along with refurbishment of internal electric system;**

The measure should include the following working steps:

* Removal of existing outdated incandescent and EE bulbs and electrical system;
* Preparing the walls’ surface for installing of electrical system;

Installation

* The arrangement and installation of cables, rosettes, switchers with consideration of contour isolation;
* Installation of LED luminaries (providing 75% energy saving compared to incandescent bulbs with consideration of lighting level/lux) in playrooms, bedrooms, gym, hall, corridors, kitchen/toilets, storerooms & etc in accordance of EU/International standards;
* It is recommended to consider applications (shields for rosettes) and/or other mechanisms needed for children’s safety (safety rules of lighting system) as well;

**Installation of (central and/or individual) new ventilation system for groups/playing rooms, bedrooms, hall, gym and kitchen;**

* The ventilation rates according to EN 15251 shall be considered – kindergarten (playrooms/sleeping rooms): 4,2 l/s per child + 0,7 l/s per m² (approx. 17 m³/h per child);
* It is recommended to have the ventilation system that is **fully automatically managed** in dependence of the CO2 concentration in the classroom and a timer. It is recommended that the CO2 concentration shall not exceed the outdoor air CO2 concentration by 1,000 ppm;
* Recommended maximum noise level of the ventilation system in classrooms: 35 dB(A);
* The installation of the ventilation systems shall consider limiting noise/vibration transmission;
* Energy efficiency Label according to the Commission Regulation EU 1253/2014 : A+ or better;

Installation:

* The contractor has to deliver a “ready to work” ventilation system incl. all required installation works and required installation materials (installation of the unit, wall lead through, electricity connection, condensate connection, etc.). The wall lead-through (duct holes) must be properly integrated and sealed into the thermal insulation system of the façade (rain or moisture must not penetrate the insulation material of the façade);
* The ventilation units shall be suitable for installation either onto the ceiling/wall or the floor in the classrooms. The ventilation system must be installed in a way that students/children cannot be harmed. Furthermore, the ventilation system must be sufficiently protected against mechanical damages (depending on the location of the installation);
* The installation works includes also the electricity connection;
* Installed equipment (e.g. pumps, valves, filters, etc.) and pipes must be permanently and distinctly marked. The name of the equipment must be logic and consistent with the scheme (unit 1, etc.).

**Installation the autonomous heating system (AHS) which includes solid fuel boiler working on vineyard pruning resides**

The measure should include the following working steps

* Installation of AHS system with consideration of hot water supply system working on solid fuel (vineyard pruning residues);
* Construction of technical room for boiler;

Installation

* Installation of the biomass boiler incl. control system (vineyard pruning resides);
* Installing new central heating system (pipes (thermally insulated), pumps, valves, expansion system, storage tank, etc.);
* Installation of a fuel supply system;
* Installation of a chimney;
* Installation of a 2-string heating system including radiators and thermostatic valves;
* Hydraulic balancing of the entire system;

**Installation of solar water heating system for preparing hot water connected to the AHS**

The measure should include the following working steps:

* To check the roof’s condition for considering the load of solar collectors on the roof;

Installation

* Installation of solar water heating system integrated with AHS with capacity 200L on the roof of building and/or boiler house;

**Others**

The project should include the following addition working steps that typically have to be included in the refurbishment project:

* Demolition of the sidewalk, reconstruction of the sidewalk around the building
* Reconstruction of emergency stairs
* Refurbishment of the rain gutter system incl. controlled removal of rain water
* Construction of an access to the building for handicap persons (ramp, etc.)
* Replacement/refurbishment of porch roofs and other attached items (if needed)

## Detailed description of the Scope of Work

### Elaboration of the final technical designs of №1 & №2

The Service Provider shall provide the following activities during the elaboration of the final technical designs №1 & №2:

* Assessment of all available project documents (e.g. Energy Audit Report, technical guidelines, etc.) for final technical design №2.
* Assessment of the existing situation (site visits, actual measurements, photo documentation, technical deficits, etc.) for final technical designs №1 & №2.
* Elaboration of quality and performance criteria’s for the sub projects for final technical design №2 (e.g. U-values of windows, walls, roof, thermal comfort, indoor air quality, boiler efficiency, etc.). Those criteria’s shall be discussed and agreed on with the “Energy Efficiency Centre Georgia” in cooperation with Telavi Municipality and/or its delegated Project Team.
* Assessment of the required authority approvals and permits for each of the selected rehabilitation/refurbishment (technical design №1) as well as EE/RE measures (technical design №2).
* Assessment of the legal requirements for each of the selected rehabilitation/refurbishment and EE/RE measures (e.g. fire safety, accessibility for disabled people, lightning protection, ventilation requirements, etc.) for Technical Designs №1 & №2.
* Coordination with other potential projects which are planned to be implemented by third parties in the same building or construction site.
* Elaboration of the draft final technical designs №1 & №2. The Service Provider shall elaborate all technical documents which are required for the implementation of the sub projects (technical drawings, calculations, draft technical specification document, etc.). The both package of draft final designs (№1 & №2) shall be elaborated in close cooperation with the union “Energy Efficiency Centre Georgia” in cooperation with Telavi Municipality and its delegated Project Team.
* Elaboration/request of expert’s opinions and surveys which are required for achieving the authority approvals or which are required for the project implementation (e.g. static expert opinion of the building structure, soil survey, etc.)
* Coordination with the Service Provider’s subcontracted companies.
* Elaboration of a detailed project implementation plan for both packages (№1&№2) in coordination with the union “Energy Efficiency Centre Georgia” in cooperation with Telavi the Municipality and its delegated Project Team.
* Presentation and discussion of the both packages (draft final technical designs №1 & №2) with union “Energy Efficiency Centre Georgia” in cooperation with the Telavi Municipality and/or its delegated Project Team. The both packages of draft final technical designs №1 & №2 shall be approved by union “Energy Efficiency Centre Georgia” in cooperation with the Telavi Municipality.

### Investment costs, operational costs, energy savings, cost savings for the sub project

The Service Provider will estimate the investment costs and the operational costs (energy consumption, maintenance, etc.) based on the draft final design of the measures. The reliability of the cost estimation should be in the range of +/- 15% of the real costs. Furthermore the Service Provider should provide the basic data for the calculation of the expected annual energy savings and cost savings to the Municipality and/or its delegated Project Team.

### Authority approvals, permits

The Service Provider shall provide the following activities:

* Introduction of the planed project to all relevant authorities to receive preliminary comments.
* Elaboration of all required project documents (descriptions, drawings, calculations, expert opinions, etc.) for receiving all legal approvals and permits.
* Submission of the project documents to the relevant authorities (incl. the preparation of the required copies of the project documents).
* Support of the union “Energy Efficiency Centre” in cooperation with Telavi Municipality during the authority approval procedure (participation in meetings, coordination between authorities and Municipality, etc.).
* Adopting the final technical designs (№1& №2) according to the comments from the authorities.
* Updating the project implementation plan for the sub project of the Technical Design №1 & №2.
* Updating the project cost estimation for the sub project of the Technical Design №1 & №2.
* Other activities which are required to achieve the authority approvals/permits and fulfil obligations from the authorities.

### Elaboration of the tender documents

The Service Provider shall provide the following activities:

* Compiling/elaboration of all required drawings for the tender book.
* Updating of the project implementation plan for the Technical Design №2.
* Elaboration of the technical specification document (each component of the EE/RE measures must be described in all details incl. their technical specifications and installation practices etc.) for the Technical Design №2.
* Elaboration of the required components/services as well as quantities according to the legal requirements (“bill of quantities”).
* Elaboration of the general technical terms of condition (e.g. conditions for accounting, prove and warn obligations, actual measurements, etc.).
* Investment costs according to the requirements of the Contracting Authority.
* Other technical documents which are required by the Contracting Authority.
* Assistance of the union “Energy Efficiency Centre Georgia” during the tender procedure/contracting of a construction company (on request).

### Support during the project implementation

The Service Provider shall support the union “Energy Efficiency Centre Georgia” in cooperation with Telavi Municipality and its delegated Project Team during the implementation of the sub project for Technical Design №1&№2. Please note that this activity should be complementary to the activities of the site supervision during the project implementation.

The Service Provider shall provide the following activities:

* The Service Provider shall assist the union “Energy Efficiency Centre Georgia” during the project implementation to assure the compliance with the approved project design.

# Deliverables

## Draft final design

The Service Provider is responsible to elaborate and deliver both packages (№1& №2) of draft final designs to the union “Energy Efficiency Centre Georgia” in cooperation with the Telavi Municipality for approval. The following documents shall be delivered:

* Draft final technical drawings for the project implementation (the Technical Designs №1&№2);
* Draft final project description (incl. technical specification of the complete rehabilitation/refurbishment measures (the Technical Design №1) as well as EE/RE measures (the Technical Design №2);
* Project implementation plan for the Technical Designs №1 & №2);
* Detailed estimation of the investment costs of the rehabilitation/refurbishment measures (Technical Design №1) as well as EE/RE measures (Technical Design №2 (the reliability of the cost estimation should be in the range of +/- 15% of the real costs).
* Expert opinions, surveys which are required for the implementation of the project.

All deliverables must be provided in hardcopy and in electronic format (pdf, acad, word, excel, etc.) for both type of the Technical Designs №1 & №2.

## Deliverables for receiving the required authority approvals (permits)

The Service Provider is responsible to elaborate and deliver all required documents for receiving all authority approvals/permits for the implementation of the sub project. The following documents shall be delivered:

* Project description (incl. technical specification of the EE/RE measures).
* Technical drawings which are required for the authority approvals/permits.
* Cost estimation according to the requirements of the authorities.
* Expert opinions, surveys which are required for receiving the authority approvals/permits.
* Other documents which are required by the relevant authorities for receiving the permits.

All deliverables must be provided in hardcopy and in electronic format (pdf, acad, word, excel, etc.)

## Tender documents of the Technical Designs №1 & №2

* Final technical drawings (approved by the relevant authority) which are required for the implementation of the project.
* Technical specification document (each component of the rehabilitation/refurbishment as well as EE/RE measures must be described with all details incl. their technical specifications and installation practices).
* List of components and services (“bill of quantities”).
* Detailed project implementation plan.
* Investment costs according to the requirements of the Contracting Authority.
* General technical terms of conditions.
* Other documents which are required by the Contracting Authority as part of the tender documents.

All deliverables must be provided in hardcopy and in electronic format (pdf, acad, word, excel, etc.)

The deliverables shall be provided according to the draft implementation schedule see Annex.

# Assessment of the Technical Design by the Support Team

The design of the EE/RE measures will be assessed by the Support Team for relevance to Western European standards and practices in order to secure the sustainability of the measures. The Service Provider must follow reformations from the Support Team and/or provide well-justified clarification why these recommendations cannot be applied.

# Budget

The Service Provider receives the remuneration for the delivery of the above described outcomes and services as a lump sum payment. The lump sum includes all expenses such as applicable taxes, personal costs, travel expenses, insurances, social welfare charges, etc.

# Payment Conditions

The implementation of the task should start right after signing the service contract (=start date) within the terms specified in the contract. There will be made advance payment (up to 25% of the total cost of the contract) after the contract signing; as for final payment it will be done after approval of the final technical design by the “Energy Efficiency Centre Georgia” in agreement with the Telavi municipality and Support Team within 10 working days. More detailed payment conditions will be reflected in the contract. In case of failure to complete the service within the terms specified in the contract, the union “Energy Efficiency Centre Georgia” will impose penalties envisaged in the contract.

# Requirements for the Service Provider

The Service Provider should be qualified for the elaboration of the services and works described above. In particular he shall fulfil the following requirements:

* The Service Provider shall have elaborated the technical design of at least 3 similar projects during the last 3 years;
* Insurance for services and works delivered by the Service Provider;
* The Service Provider must fulfil all legal requirements and national standards/norms;
* The Service Provider must have all certificates/licenses to provide the requested services and works (see also chapter subcontracting).
* Detailed engineering knowledge in the relevant field.
* Knowledge of Western European standards, norms and best available technologies in the relevant field of the sub project. Ability to apply those standards, norms and practices in the technical design of the sub project.
* Ability to produce high quality documents, in Georgian language.
* Experience in providing consultancy services and work experience with donor-funded projects.

# Subcontracting

The Service Provider has to provide all the required legal design competences and certificates which are required for the delivery of the Services and works under this contract.

In the event the Service Provider has not all of the required design certificates or competences, he is entitled to subcontract other engineering companies which provide the lacking competences/certificates. The Service Provider is obliged to announce the Subcontractor and the services he is providing prior to the signature of this contract. The union “Energy Efficiency Centre Georgia” in cooperation with the Telavi Municipality is entitled to reject the proposed Subcontractor.

The Service Provider remains solely responsible for carrying out the Services and works under this contract.

# Confidentiality

The Service Provider and his subcontractors will keep any information made available in relation to the project and the mandate strictly confidential and will not disclose such information to third parties except where required by law. This clause also applies after the finalization of the contract.

# Contact Details

Contact Person of the Union “Energy Efficiency Centre Georgia”

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# 11 Annexes

* Annex 1: Technical Design Ikalto Kindergarten
* Annex 2: Recommended U-values (R) for refurbished structures of buildings;
* Annex 3: Basic requirements for ventilation systems (individual and/or centralised);
* Annex 4:“Building Refurbishments”\_ENG&RU (technical guidelines for the elaboration of the final design)
* Annex 5:Energy Audit Report for Ikalto Kindergarten
* Annex 7: Draft implementation schedule

# Annexes

Annex 1: Technical Design Ikalto Kindergarten

See attached document technical design Ikalto kindergarten

## *Annex 2: Recommended U-values (R) for refurbished structures of buildings (see below):*

|  |  |  |
| --- | --- | --- |
| **Structure** | **Heat transfer factor U****(W/m2°C)** | **Heat resistance factor R****(m2°C /W)** |
| Roof slab | ≤ 0.2 | ≥ 5 |
| Walls | ≤ 0.24 | ≥ 4.17 |
| Windows | ≤ 1.3 | ≥ 0.77 |
| Basement slab (ceiling) | ≤ 0.3 | ≥ 3.33 |
| Doors | ≤ 1.8 | ≥ 0.56 |

Annex 3: Basic requirements for ventilation systems (individual and/or centralised);

Please, see attached document in ENG

Annex 4: Building refurbishments/ENG&RU (technical guidelines for the elaboration of the final design)

Please, see attached document in ENG and/or RUS languages:

Annex 5: Energy audit report for Ikalto kindergarten

Please, see attached documents in ENG and/or GEO languages:

## *Annex 6: Draft implementation schedule (see below)*

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| --- |
| **Village IKALTO (Telavi Municipality)****Kindergarten Ikalto** |
| **Terms** | **Start** | **End** |
| **Announcement on Tender Technical design** | 31 December, 2019 | 31 January, 2019 |
| **Evaluation of received documents** | 1 February , 2019 | 8 February, 2019 |
| **Contract signing**  |  11 February, 2019 | 15 February, 2019 |
| **Term for preparation of technical design documents by selected company for its final submission**  | 2 months (60 calendar days) after contract signing |

1. Information presented in document/layout needs to be rechecked [↑](#footnote-ref-2)