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1. BACKGROUND INFORMATION

1.1. Partner country

Republic of North Macedonia

1.2. Contracting authority

Municipality of Bitola
Boulevard 1-st of May 61
7000 Bitola

1.3. Country background

The cross-border cooperation programme Greece – North Macedonia supports regional cooperation between Greece and North Macedonia. The Programme's overall objective is to enhance territorial cohesion by improving living standards and employment opportunities holding respect to the environment and by using the natural resources for the upgrading of the tourism products.

The Pelagonia Region is among eligible Programme regions, where the Contracting Authority, Municipality of Bitola is located and carries out the regular activities.

The project „Building ENergy EFficiency ImprovemenT- Benefit“ is supported by the cross-border programme “Interreg IPA Cross-border Cooperation Programme Greece- Republic of North Macedonia 2014-2020”. The cross-border cooperation is considered essential for successful implementation of the project BENEFIT from the objectives, activities, and results, because:

- EE is a key priority within the EU 2020 Strategy, and this translates into common EU policies for the Member States, including those addressing energy-efficiency in buildings (2010/31/EC, 2012/27/EU). To accelerate the achievement of strategic targets, an integrated approach is needed with coordination between EU/national/regional/local energy policies.
- The strengthened CoM for Energy & Climate provides common guidelines to local/regional authorities across Europe for developing SEAPs committing to joint targets of 40% CO2 reduction by 2030.
- There are common key challenges identified faced by public administrations in the CB area: Municipality of Bitola has significant expertise in planning and implementing EE improvements in public buildings, whereas others have more limited past experience. From the IPA Cross-Border Cooperation Programme Greece - Republic of North Macedonia programming period 2007-2013 successfully was implemented the project “Protection of the environment through the promotion of biomass for substitution of fossil fuels in heating and power generation/Biofoss.”
- some EE building materials/technologies
- may be widely used in one country whereas in the other they may be considered innovative
- some public authorities (e.g., Thessaloniki) are already in the process of implementing a local SEAP for the CoM, including actions for public buildings, whereas others (e.g., Bitola) have not adhered yet to the initiative

Considering the above, cross-border cooperation will benefit all participating partners/target groups, as it will allow exchanging/transferring of experiences on methodologies/tools/best practices used in partner territories, sharing lessons learned, identifying common ways of responding to challenges, supporting authorities with insufficient capacities, eventually leading to more informed and

integrated planning, financing and implementation of energy retrofit projects and cost-optimal interventions.

1.4. Current situation in the sector

The Municipality of Bitola is a local public authority with the capacity to influence local/regional/national policies. It has 140 staff, 10 of which dedicated to national/EU projects implementation. Also, Municipality of Bitola is owner/occupier of public buildings – including the pilot demonstration buildings and they are responsible for developing/implementing energy-efficiency (EE) policies and action plans for public building stock, have capacities to influence public policies in their area of activity directly. Overall all governance levels are represented (local/regional/national) ensuring wide applicability of project outcomes and uptake at all policy levels. The responsibility of the municipality is to increase the insufficient capacities of public administrations to develop reliable, cost-effective EE action plans for the public buildings' stock.

The current situation is:

- insufficient level of expertise to apply advanced energy modeling methodologies, therefore, needing a simpler but reliable decision support system
- difficulty in buildings' energy data collection
- lack of specific methodology to categorize them in typologies
- lack of a specific decision-support system for planning energy retrofits

The project „Building ENergy EFFiciency ImprovemenT- Benefit” aims to address all the above challenges by undertaking the following activities:

- developing and testing an integrated decision-support platform for public authorities to facilitate them in planning, financing, implementing and monitoring public Buildings' Energy-Efficiency (BEE) plans and projects; outputs will provide packaged retrofit solutions of cost-prioritized interventions per building typology, accompanied by energy & cost indicators and suitable financial mechanisms;
- Pilot implementation of one demonstration public building energy retrofit project (and study of four bankable projects) per territory, providing a leading example for increasing energy-awareness of the wider society.
- Policy uptake and community engagement. The direct involvement of partners in the project who have a multiplier role will ensure wide dissemination-awareness raising of the relevant target groups.

Such an approach goes far beyond current practice in public authorities in the cross-border area which in their majority: i) use generic /statistical indices for calculating energy consumption of their building stock ii) often make uninformed decisions on cost-effectiveness/priorities of building typologies/energy retrofit measures to target iii) have insufficient technical capacities on BEE projects' planning, financing and implementation and monitoring iv) do not have integrated long-term plans for gradual public buildings' renovation.

1.5. Related programmes and other donor activities

N/A

2. OBJECTIVE, PURPOSE & EXPECTED RESULTS

2.1. Overall objective

The overall objective of the project of which this contract will be a part is as follows:

The main common cross-border challenge tackled by BENEFIT is insufficient capacities of public administrations in the cross-border area to develop reliable, cost-effective EE action plans for their public buildings' stock. Other key challenges include: i) their insufficient level of expertise to apply advanced energy modeling methodologies, therefore, needing a simpler but reliable decision support system ii) difficulty in buildings' energy data collection iii) lack of specific methodology to categorize them in typologies iv) lack of a specific decision-support system for planning energy retrofits.

BENEFIT aims to address all the above challenges by undertaking activities along three key axes:

(1) Developing and testing an integrated decision-support platform for public authorities to facilitate them in planning, financing, implementing and monitoring public Buildings' Energy-Efficiency (BEE) plans and projects; outputs will provide packaged retrofit solutions of cost-prioritized interventions per building typology, accompanied by energy & cost indicators and suitable financial mechanisms.

(2) Pilot implementation of one demonstration public building energy retrofit project (and study of four bankable projects) per territory, providing a leading example for increasing energy-awareness of the wider society.

(3) Policy uptake and community engagement. The direct involvement of partners in the project who have a multiplier role will ensure wide dissemination-awareness raising of the relevant target groups.

Such an approach goes far beyond current practice in public authorities in the cross-border area which in their majority: i) use generic /statistical indices for calculating energy consumption of their building stock ii) often make uninformed decisions on cost-effectiveness/priorities of building typologies/energy retrofit measures to target iii) have insufficient technical capacities on BEE projects' planning, financing and implementation and monitoring iv) do not have integrated long-term plans for gradual public buildings' renovation.

The overall objective of BENEFIT is to strengthen the capacities of public authorities in the cross-border area of Greece-FYROM towards energy-efficiency (EE) planning for upgrading public buildings' energy performance, as well as to increase energy awareness of the wider society on benefits from EE. An integrated decision-support tool will be introduced to support public authorities in EE planning using a common framework. The foreseen demonstration energy retrofit projects will provide great dissemination-awareness raising opportunities on the benefits from EE (e.g., reducing environmental impact; improving living/working conditions; achieving cost savings). The energy upgrades will lead to growth, jobs creation, and new innovative markets. Therefore, BENEFIT's overall objective links to the Programme strategy statement "to enhance territorial cohesion by improving living standards and employment opportunities, respecting the environment and by using the natural resources for tourism."

The overall objective of the project of which this contract will be a part is as follows:

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Specific objectives of the project BENEFIT include:

1. Testing of typologies' classification, energy analyses and IT protocols for creating a decision-support platform for public authorities to facilitate EE planning and EE interventions in public buildings
2. Increase energy management capacities of public authorities through the pilot implementation of energy retrofit in one public building per country and monitoring progress from the ex-ante to the ex-post condition
3. Involve target groups and increase energy-efficiency plans for local/regional authorities in the cross-border area, through dissemination activities, i.e., training seminars, clustering activities, creation of networks, etc.
4. Overcoming barriers on increasing impact/replication of public buildings EE interventions promotion on wider society
5. Mobilize networking/cooperation/exchange of experience in the cross-border area between involved stakeholders in the fields of EE planning and EE improvements in public buildings

2.2. Purpose

The purposes of this contract are as follows:

- a) Development of web-based Energy Efficiency Platform that includes an integrated decision-support tool for the support of public authorities in EE planning.
- b) Implementation of web-based Behaviour Change Platform for energy efficiency
- c) Translations and publishing of texts on the project website what will be developed by Greek partners.

2.3. Results to be achieved by the contractor

The expected results by the contractor are

- Development & Management of Buildings Energy Efficiency-BEE Platform (into Macedonian and English language) and collection of data, the platform will be developed on the internet.
- Implementation of the “behavioural change platform.”
- Project website translation and update during the project.

3. ASSUMPTIONS & RISKS

3.1. Assumptions underlying the project

- Good cooperation between all parties involved in the project
- Constant and timely support from the Project team;

3.2. Risks

- Low level of communication among the project stakeholders
- Failure to comply with the respective deadlines for completion and launching of the tender procedures;

4. SCOPE OF THE WORK

4.1. General

4.1.1. Description of the assignment

Municipality of Bitola in the frame of the project intends to hire external expertise and services that should work on Development & Management of Buildings Energy Efficiency-BEE Platform (into Macedonian and English language), Implementation of the “behavioural change platform” and Project website translation and update during the project.

TECHNICAL INFORMATION

The contractor should make following assumptions:

- Development & Management of Buildings Energy Efficiency-BEE Platform - an integrated decision-support tool to support public authorities in EE planning (in Macedonian and English).
- External expert for Implementation of Behaviour Change Platform (in Macedonian and English).
- Project web site translations and updates during project implementation (in Macedonian and English).

FINANCIAL INFORMATION

The maximum available value of the contract is

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- Development & Management of Buildings Energy Efficiency-BEE Platform (in Macedonian and English) = 7500 EUR

- External expert for the Implementation of Behavior Change Platform (in Macedonian and English) 8000 EUR

- Project web site translations and updates during project implementation (in Macedonian and English) = 2000 euro

Total 17.500,00 EUR without VAT.

Payments will be realized on the basis of the issued invoice by the contactor according Special Conditions of the Draft Contract.

4.1.2. Geographical area to be covered

Bitola

4.1.3. Target groups

The main target groups for the project BENEFIT include:

- Municipalities' personnel (policy makers; technical/financial/planning departments) involved in: preparing, financing, implementing local energy-efficiency action plans such as Sustainable Energy Action Plans (SEAPs) for the Covenant of Mayors (CoM); planning and implementation of public buildings' energy retrofit projects
- Regions' personnel (policy makers; technical/financial/planning departments) involved in: regional energy policy and action plans; buildings' energy retrofit projects; support to local Municipalities as territorial CoM coordinators/supporters
- Ministries' personnel (e.g. Energy, Development etc.) involved in: National Energy Efficiency Action Plans; Buildings' Energy Efficiency Regulations; transposition of EU Directives (EPBD, EED); preparation of public buildings' 3% annual energy renovation plan
- Local/regional/national energy and development agencies/funds involved in: support to public authorities in planning, financing, implementing energy action plans and energy retrofit projects; CoM Coordinator/supporters
- Building industry professionals: engineers, energy auditors, ESCOs, suppliers of building technologies/materials, Technical Chambers etc. involved in the field of energy-efficient buildings' design and renovation
- Citizens/wider public, as end users of public (and residential) buildings, engaged through communication/awareness-raising activities >

4.2. Specific work

A) Development & Management of Buildings Energy Efficiency (BEE) Platform - an integrated decision-support tool to support public authorities in EE planning (in Macedonian and English).

The BEE Platform for energy efficiency should be interactive, computer-based information system developed to help decision-makers as evaluators to incorporate their subjective opinions and attitudes, for prioritization (ranking) of problems in this field of work, through a user-friendly graphical interface.

BEE Platform should allow creation of databases and hierarchical models, which will become its integral part through an interactive approach. DSS should be able to compare and rank problems through direct interaction (analysis and synthesis) with the models and data and to propose decision-making, based on appropriate mathematical calculations.

The inputs into BEE Platform should be:

- Building typology including data about building: total area and volume, area and volume heated/ cooled.
- Human benefits - persons affected by EE measures (number of persons using the building).
- Financial benefits (estimated savings in money) by EE measure implemented: insulation (walls, ceilings/roofs, floors), change of windows, lighting, etc.
- Environmental benefits - reduction of air pollution, and greenhouses gasses emission by EE measure implemented: insulation (walls, ceilings/roofs, floors), change of windows, lighting, etc.
- Costs (needed investments) per EE measure implemented: insulation (walls, ceilings/roofs, floors), change of windows, lighting, etc.
- Costs/Benefits per EE measure implemented: insulation (walls, ceilings/roofs, floors), change of windows, lighting, etc.

BEE Platform should be multi-attribute decision-making tool which takes into account quantitative and qualitative aspects of decisions and ranks. Based on the above input parameters BEE should rank (prioritize) buildings to be refurbished by EE measures.

BEE Platform should provide individually, and, what is even more important, group decision making that includes more people. Each group member has his/her own opinion and judgment, which entered into the system. Upon receipt of all the individual evaluations, the system should generate a priority list of alternatives with their graphical presentation and the possibility of sensitivity analysis.

In the Organization and Methodology, the tenderer should propose and explain the method to be used for prioritization (ranking) of EE measures, i.e., for multi-attribute group decision making

Taking into consideration the primary goal of the BEE Platform is to be practically implemented and applied in real conditions, it should have possibilities to be tested before its application.

The BEE Platform should be simultaneous:

- WEB-based decision support system.
- Multi-attribute decision support system.

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- Group decision support system.

Safety should be an important aspect of the developed BEE Platform. To achieve that goal, the user should be able to access the system through at least three levels with different privileges that will provide adequate protection of software components and databases, included in its structure/composition.

The BEE Platform should protect the privacy of every user in order to feel secure (sure) that the information, which he updates are safe and secure from unwanted access. It should be realized with the possibility for user login/logout to the system through his/her user name and password.

The BEE Platform should have a user-friendly interface, with an appropriate aesthetic design, form, and content that corresponds to the previously stated requirements.

The development, installation, and configuration of the BEE Platform should be done for 4 months from the date when the contract will be signed.

B) External expert for the Implementation Behaviour Change Platform (in Macedonian and English)

Behaviour Change Platform (BCP) will be an innovative and user-friendly web portal which will make available and understand energy consumption data in a range of buildings (dwellings, public buildings) and to try to initiate change in user behaviour to save energy.

The BCP web tool will use holistic approach incorporating the visualization of energy data, which will be selected by the user, as well as the creation of proposals for energy-saving, smart control and adaptive motivation through gamification techniques. The BCP will be developed by Greek partners in the BENEFIT Project to achieve a sustainable change in energy consumption patterns without compromising on user comfort levels.

In particular, the platform should allow the user to choose a type of building (dwelling, public building), and then be able to choose its key features in order to formulate an initial scenario of energy consumption. The platform will have several alternative scenarios for the integration of energy systems, shell technologies, with their basic thermal insulation capability, and options for automated control systems. The user should be given the opportunity to proceed with the options after being informed of their characteristics (energy level - energy saving potential, cost), and depending on each technology will be led to choose the additional provisions that will lead to a positive result energy, environmental and economic benefits, as well as the optimal energy classification of the building according to the national legislation for energy efficiency.

The BCP will incorporate gamification or other techniques to encourage user interaction and make it more direct and effective to provide information to the user and to use the platform to change its behaviour towards energy savings.

In particular, a BCP will be developed in a free programming language for web applications such as PHP or NodeJS to be supported by a free database such as MySQL or MariaDB. The site should support various user categories, such as administrators, registered users, and anonymous users. The site will be created in accordance with the standards for secure web development by the OWASP (Open Web Application Security Project, https://www.owasp.org/index.php/Main_Page) community. The web site will consist of a front end for the introduction of scripts and variables and a backend that will be processed. The BCP will be developed with libraries that allow the graphical interface to be automatically adjusted to each screen (e.g., bootstrap): mobile, tablet, laptop, or desktop computer.

Assignments of the contractor in North Macedonia will include: selection of contents for BCP, translation of contents for BCP, preparation, optimization and editing media files, publishing all content on web-based BCP.

The contractor in North Macedonia will administer Macedonian part of the BCP and should be able to create script categories and will place scenarios within the categories. For each scenario, media should go up (for example, pictures or floor plans). The contractor should be able also to create categories of energy systems and place the parameters for each category. It should be able to upload accompanying files (text, PDF, image, or video) for that particular system to let the users know their particular needs and capabilities.

In the Organization and Methodology, the tenderer should propose content of the BCP for North Macedonia.

The implementation of BCP should be done for 4 months after the platform will be developed by the Greek partners in the project.

C) Project web site translations and updates during project implementation (in Macedonian and English)

Under this activity, the contractor should translate materials about the project what will receive by the Contracting Authority and publish them on the project website, which is under the development of Greek partners. Also, the contractor should process images, videos, etc., what will receive by the Contracting Authority and publish them on the project website. Estimated volume for translation is max 200 standard translator's pages (1500 characters without spaces) + images and videos

The contractor should provide report about implemented activities for web site translations and updates, every three months, and payments will be per report - 25% of total value of this deliverable.

4.3. Project management

4.3.1. Responsible body

The Contracting Authority for the contract is Municipality of Bitola

4.3.2. Management structure

The Contracting Authority is Municipality of Bitola, the Republic of North Macedonia and in that capacity, it is responsible for launching the service tender procedure, sign the service contract, authorize payments to the contractor and handle the financial management and control during project implementation.

The project management structure is consisting of a project manager and two project assistants from the Municipality of Bitola

4.3.3. Facilities to be provided by the contracting authority and/or other parties

The contracting authority has no obligations to provide any facilities

5. LOGISTICS AND TIMING

5.1. Location

Municipality of Bitola

5.2. Start date & period of implementation of tasks

The intended start date is the date when the contract will be signed and the period of implementation will be until the end of October 2020. Please see Articles 19.1 and 19.2 of the special conditions for the actual start date and period of implementation.

6. REQUIREMENTS

6.1. Staff

Note that civil servants and other staff of the public administration of the partner country, or of international/regional organisations based in the country, shall only be approved to work as experts if well justified. The justification should be submitted with the tender and shall include information on the added value the expert will bring as well as proof that the expert is seconded or on personal leave.

6.1.1. Key experts

Key expert 1: Energy efficiency expert

Qualifications and skills

University degree (bachelor, master or Ph.D.) in technical sciences - mechanical, civil, architectural, electrical engineering or similar.

In the case of absence of degree as required in previous paragraph, the expert should prove that has competence in energy efficiency on the basis of previous similar assignments for at least 5 years.

General professional experience

Minimum of five years of professional experience in fields related to energy efficiency.

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Specific professional experience

Experience with preparation of energy efficiency programs or plans AND Licence for Energy Auditor from Energy Agency of the Republic of North Macedonia.

Key expert 2 – Web platforms/ Decision Support Systems development expert

Qualifications and skills

University degree (bachelor, master or Ph.D.) in natural sciences – informatics, mathematics or similar, or technical sciences – computer, industrial, electrical, mechanical engineering or similar.
In the case of absence of degree as required in previous paragraph, the expert should prove that has competence in Web platform/ Decision Support Systems development on the basis of previous similar assignments for at least 5 years.

General professional experience

Minimum of five years of professional experience in fields related to web platforms development.

Specific professional experience

Experience with decision support system development.

All experts must be independent and free from conflicts of interest in the responsibilities they take on.

6.1.2. Other experts, support staff & backstopping

CVs for experts other than the key experts should not be submitted in the tender but the tenderer will have to demonstrate in their offer that they have access to experts with the required profiles. The contractor shall select and hire other experts as required according to the needs. The selection procedures used by the contractor to select these other experts shall be transparent, and shall be based on pre-defined criteria, including professional qualifications, language skills and work experience.

The costs for backstopping and support staff, as needed, are considered to be included in the tenderer's financial offer.

6.2. Office accommodation

Office accommodation for each expert working on the contract is to be provided by the contractor.

6.3. Facilities to be provided by the contractor

The contractor shall ensure that experts are adequately supported and equipped. In particular it must ensure that there is sufficient administrative, secretarial and interpreting provision to enable experts to concentrate on their primary responsibilities. It must also transfer funds as necessary to support their work under the contract and to ensure that its employees are paid regularly and in a timely fashion.

6.4. Equipment

No equipment is to be purchased on behalf of the contracting authority / partner country as part of this service contract or transferred to the contracting authority / partner country at the end of this contract. Any equipment related to this contract which is to be acquired by the partner country must be purchased by means of a separate supply tender procedure.

7. REPORTS

7.1. Reporting requirements

The contractor will submit the following reports in English in one original and 2 copies:

- Report about structure and functioning (user manual) of the BEE Platform.
- Report about Behaviour Change Platform implementation and administration (contents).
- Reports about Web site translations and updates during project implementation (every three months one report).

The reports referred to above must be submitted to the project manager identified in the contract.

Responsible for approving the reports is the Contracting Authority.

8. MONITORING AND EVALUATION

8.1. Definition of indicators

All activities for monitoring and evaluation, which will be a part of this Contract will be realized according to the planned time and measures of progress towards expected results.

8.2. Special requirements

N/A