**Part I – General information**

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| Project: **BUILD2LC Project****Boosting Low Carbon Innovative Building Rehabilitation in European Regions**Partner organisation:**Rzeszów Regional Development Agency**Country:**Poland**NUTS2 region: PL32 PodkarpackieContact person:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_email address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_phone number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Part II – Policy context**

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| The Action Plan aims to impact: € Investment for Growth and Jobs programme X European Territorial Cooperation programme € Other regional development policy instrumentName of the policy instrument addressed:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Part III – Details of the actions envisaged**

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| **ACTION 1****UMBRELLA PROJECTS FOR ENERGY REHABILITATION OF INDIVIDUAL HOUSES**1. **The background** (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)

The action bases on the good practice from Gloucestershire “Countdown to Low Carbon Homes” as well as on other projects conducted in partner regions and countries. Another case which was taken as an example is programme of asbestos removal already implemented in Podkarpackie region. What is important element that can be used here is combination of measures for activating demand and for innovative financing. These elements need to come together in order to get synergy effect and acquire real change. All these cases share common threat – appropriate measures make people more active and help them raise their awareness in daily application of energy efficiency measures. For this purpose financial mechanisms are necessary as an incentive that support people’s efforts. This is especially true in case of households that suffer from energy poverty or are close to it. Apart from other effects in Podkarpackie this is also connected with low emission problems caused very often by poor quality of solid fuel that is used in individual furnaces (such as garbage, float etc.).Due to high energy demand of individual houses the need for such fuel is really big, meaning intense air pollution and health problems caused by it.1. **Action** (please list and describe the actions to be implemented)

The action aims to activate demand through an innovative financing. Regional Operational Programme for Podkarpackie 2014 - 2020 has a measure for energy rehabilitation of buildings. So far this measure was specially addressed for public institutions as well as for housing cooperatives and social housing companies. The measure covers:Deep energy rehabilitation of public buildings and multi-apartment dwellings (meaning dwellings with at least two apartments), together with the replacement of lighting of these buildings with energy-saving lighting, The projects may include such elements as:* Insulation of walls, ceilings, foundations, foundations, ceilings of different types and of roofs
* Modernisation or replacement of window and door woodwork, or to replace glazing in buildings with energy-efficient ones,
* Installation of window shading devices (e. g. shutters, blinds),
* Thermal insulation, hydraulic balancing or comprehensive modernisation of heating or hot water installations, including connection to a district heating network or the replacement of a heat source (such as gas-fired boilers, biomass boilers),
* Modification and/or construction of air conditioning and cooling systems,
* Liquidation of linear and point thermal bridges,
* Modernization of the ventilation system through installation of the heat recovery system (recuperation),
* Application of weather automation and of energy consumption management systems in the building (including thermostatic valves),
* modernization of electrical installations in a building which reduce energy losses,
* Installation of RES systems in energy modernized buildings,
* installation of high-efficiency micro-cogeneration equipment,
* Modernization or replacement of lighting permanently mounted in or on the building.

As a precondition for application for these sources it is necessary to have the potential energy rehabilitation of a building covered by an energy audit which provides information on the necessary energy improvements to have the building in high energy standard.Entities that can apply for these support are:* local authorities, their unions and associations,
* entities in which majority of shares hold local authorities or their associations
* Public finance sector entities with legal personality
* Cooperatives and housing associations,
* Non-governmental organizations,
* Medical entities that function in public sector medical care system
* Agreements of the entities mentioned above, represented by a leader

This list does not include private household owners and individual dwellings while in fact this is the biggest problem and most of the time are in worst condition (in energy efficiency terms), with final energy demand often exceeding 200 kWh/m2/year. There is a problem with direct support for private people with the ERDF funds due to Polish and the EU regulations on public support schemes. However, there is a solution for this which has been successfully tested with other measures, particularly in 3.4 Development of RES – umbrella projects dedicated to development of microgeneration for private households. Call for proposals which was implemented in 2017 proved great social interest in this kind of solutions, and the demand exceeded several times the available sources for this measures. Most important was financial and legal engineering that allowed support for individual people. As an umbrella type of projects this call was dedicated to local authorities and their associations. Other entities could act as partners (not a lead one). This included:local government units, their unions and associations.Other entities entitled to apply for co-financing in Measure 3.1 Development of RES, were: * entities in which local authorities or their associations hold the majority of shares,
* public finance sector entities with legal personality,
* enterprises,
* housing associations and cooperatives
* Higher education institutions,
* non-governmental organisations,
* Medical entities that function in public sector medical care system
* the agreements of the entities mentioned above, represented by the leader

Final beneficiaries of the support were inhabitants of given municipality. The support was dedicated to construction works and/or equipment for renewable energy projects based on water, wind, solar, geothermal, hydrothermal, aerothermal, biogas and biomass. Local authorities before applying recognised need as to number, kind installation and its power, gathered declaration from potential participants and prepared regulations. Inhabitants could get support with some restrictions: * VAT is not qualifying cost,
* Supported microinstallation is property of the local authority for the time of the sustainability of the project (after which it is transferred without charge to the installation user – meaning inhabitant of given municipality),
* Interested parties have to pay their share of qualifying costs and in full all costs that do not qualify for support (like taxes, parts of installations that are not directly involved in energy production etc.).

Taking into account all these previous experiences as well as lessons learnt from good practices a new instrument could be developed aiming at support to energy renovation of individual houses. This action requires a lot of elaboration due to several elements that need particular attention:* What should be the target value [in kWh/m2 /year]for final energy use? On one hand it should comply EPBD (recast) requirements as well as national regulations for 2021. On the other such a high standard is very expensive and in case of many buildings it would not be possible to adapt them to such low energy demand. Even in case it would be feasible it wouldn’t be affordable for house owners.
* It is not possible, as in the case of RES microinstallation to make local authorities owner or tenant of the houses for the time of project sustainability.

The action aims to create a support scheme that include financial grant mechanism for individual households. Important criteria that would be taken into account are:* Support for people suffering or endangered with energy poverty,
* Support in municipalities with overconcentration of low emission pollutants in air,
* Support should include optimisation of heat source
* Support should include education on energy efficiency at home in everyday life.

The support will be organised in form of umbrella projects with local authorities alone or in cooperation with other entities (same as in case of measure 3.1). Municipalities will be responsible for gathering final beneficiaries.1. **Players involved** (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)

**Urząd Marszałkowski Województwa Podkarpackiego (Podkarpackie Regional Authority)** – Podkarpackie Regional Operational Programme managing authority. It is responsible for applying changes to the programme. Its role is to adapt the measure taking into account all regulations considering structural funds, public support, Polish and EU legislation. The authority will coordinate works and participation of other stakeholders in the process.**Local municipalities** – potential applicants. They know the problems of their inhabitants and also legal, organizational and other obstacles that can be encountered during preparation and implementation of such a project. They will recognize needs of inhabitants and local situation with pollution, prepare projects, gather final beneficiaries etc. **Non-governmental organisations** (engaged in environmental education, air pollution control, energy poverty etc.) - they will add input on how to speak with people, how to address their problems and about air pollution.**Professional organisations in construction and civil engineering** – they will elaborate feasible solutions that compromise need for high energy efficiency standard and affordability.**House owners** – especially the ones suffering from energy poverty or endangered with it. They will be final beneficiaries.1. **Timeframe**

Preparation of this measure requires substantial time.II quarter – IV quarter 2018 elaboration of the measure, legal framework, conditions etc.2019 – legal procedures in local parliament, provision of funds, notification of support scheme with the European Commission.2020 – possible call for proposals1. **Costs** (if relevant)

Estimated value for one project, basing on experiences with RES umbrella project is 15 million PLN (3,5 million euro) gros (all costs included), of which some 10 million PLN (2,3 million euro) of expected grants. Expected need is some fifty projects (750 million PLN, 175 million euro). This is not feasible in financial terms, but what would be the exact amount of money available is difficult to estimate.1. **Funding sources** (if relevant):

ERDF, local authorities, house owners. |
| **ACTION 2****STANDARISED MEASURES FOR EASY APPLICATION OF ENERGY SAVING SOLUTIONS IN INDIVIDUAL HOUSES**1. **The background** (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)

The action bases to large extent on Collaborating partner companies in the management of the Incentives Programme for Sustainable Construction in Andalusia project. It shows that it can foster the collaboration between engaged companies to enable the participation in big projects. It is particularly important in case of Podkarpackie region, where there is a large number of small companies working in construction sector (In case of construction, which in statistical terms is a subsector of industry, average employment rate in percent comparing to former year (where the former year is 100%) in 2014 the rate was 94.7 % and in 2015 only 92.4 %. Total number of people working in Podkarpackie region in construction sector for 2015 was 17.7 thousand). The other lessons from partner that will be used are trainings for professionals - Warm & Well – Energy Efficiency Advice and Installation Scheme and Casaclima training course for artisans and small enterprises. It is necessary on one hand to train professionals in energy efficiency measures to get coherent and up-to-date solutions for interested parties (especially individual household owners, who do not have knowledge on energy efficiency solutions) and on the other hand to facilitate potential investors access to construction sector companies.1. **Action** (please list and describe the actions to be implemented)

This action addresses professionalization of the construction sector as well as activation of demand and combating energy poverty.The action will be composed of several measures.* Creation of database of architects, building designers, civil engineers, construction companies etc. that operate in Podkarpackie region and that are already implementing or are willing to implement energy efficiency measures. Podkarpackie Chamber of Civil Engineers will address its members as well as other potential stakeholders with survey on their knowledge of energy efficiency, interest of their customers in the subject, and their own will to develop skills in that area. All interested will be put in the database which will be made available for people that look for architects, engineers, construction companies for their investments. One precondition for representatives of construction sector is obligatory participation in trainings.
* Cycle of trainings on modern techniques and technologies in energy efficiency in buildings. It will provide thorough knowledge on state-of-the-art solutions in building materials, construction, insulation, boilers, micro RES installations as well as easy ways to save energy in everyday life. This is to support their customers to make better choices while renovating houses.
* Development of database of standardised energy efficiency measures. To ease the investment decision of beneficiaries and collaborating companies, a closed catalogue of measures to receive the incentives will be developed for access as an online tool alongside the database of companies that offer such solutions. The user friendly catalogue will be segmented into different categories and also will guide and help the beneficiary to navigate through the incentives call for proposals, directed to Rzeszów Regional Fund of Environmental Protection and Water Management.
* A support scheme for private house owners, led by Rzeszów Regional Fund of Environmental Protection and Water Management. This would base on preferential loans with some grants (if they will be possible for financial and legal reasons).
1. **Players involved** (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)

**Podkarpacka Izba Inżynierów Budownictwa (Podkarpackie Chamber of Civil Engineers)** – responsible for coordination of the database creation and of trainings. Most of the professionals involved in the action are members of the Chamber so it has an easy access to them. The Chamber will gather data of all interested parties, will prepare guidelines for them on the necessary preconditions to participate in the project. It will also conduct survey on the knowledge of the professionals on the energy efficiency measures and shape training programme. It will also gather experts to create set of standard energy efficiency measures that could be implemented by individual **Wojewódzki Fundusz Ochrony Środowiska i Gospodarki Wodnej w Rzeszowie (Rzeszów Regional Fund of Environmental Protection and Water Management)** – the fund will provide financing for individual people willing to invest in energy rehabilitation of their houses in form of preferential loans, with some grant (if it turns out to be possible).**Rzeszowska Agencja Rozwoju Regionalnego (Rzeszów Regional Development Agency)** – the agency will coordinate all activities and act as an intermediary organization among the Chamber, the Fund, and house owners. It will also manage project and supervise all procedures and in case of receiving grant from Operational Programme for East Poland (Measure 1.3 – cooperative links). The Agency would also organize meetings of experts setting the standardized measures, and assist in development and maintaining the database. **Individual house owners and tenants** – they will look for advice and for support in house renovation or building a new one.1. **Timeframe**

2018 – organisational works, development of measures, trainings, application for external funding (if available)2019 – start of the action for individual stakeholders1. **Costs** (if relevant)

Not estimated yet.1. **Funding sources** (if relevant):

Operational Programme for East Poland (Measure 1.3 – cooperative links. National funds - Rzeszów Regional Fund of Environmental Protection and Water Management |
| **ACTION 3****SUPPORT SCHEME FOR NEW NZEB-TYPE PUBLIC BUILDINGS**1. **The background** (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)

The action doesn’t base on any particular good example, instead it uses all gathered knowledge and need to create a financial instrument that would support public institutions to erect new buildings of high energy standards that would play exemplary role while conforming provisions of EPBD (recast) Directive and implementing Nearly Zero Energy Buildings (NZEBs). Such buildings are still expensive in comparison to standard energy use ones. Meanwhile public institutions lack sufficient financial sources for such buildings. It was necessary then to create a support scheme that would face these needs and expectations.1. **Action** (please list and describe the actions to be implemented)

The action aims to implement high energy standards to public building. It will be possible thanks to elaboration of appropriate measure in Regional Operational Programme for Podkarpackie 2014 – 2020. A special type of project for this purpose. It is Measure 3.3 Improvement of air quality, Sub-measure 3.3.1 Implementation of low-carbon plans - General competition, Type of project: 5. Construction or modernization of public utility buildings which will meet the passive construction standards under ROP 2014 - 2020.The first stage was to define what conditions should be met by new public buildings to apply for the support. The definition that was developed is a functional one. According to it a building with the characteristics corresponding to a passive building is an object with the following parameters and features, such as primary energy demand ≤ 120 kWh/m2 year; final energy demand ≤ 15 kWh/ m2 year; U-value for opaque building envelope? 0,15 W/m2K; windows with a U-values of less than 0.8 W/m2K for frame and glazing, with a total solar energy transmission coefficient for glazing g ≥ 50%;.tightness of the building envelope, as confirmed by a pressure test, during the test with an external and internal pressure difference of 50 Pa; heat recovery (performance of recuperation ≥70% and energy consumption ≤ 0.4 Wh/m3); Use of renewable energy sources covering min. 20% of the building's primary energy needs; Use, whenever necessary, of external elements increasing energy efficiency of investments (e. g. shading by trees), SPBT (Simple Payback Time) for the total investment? 30 years with the proviso that the life to return on investment ratio 2:1.Next step was to define catalogue of qualifying costs. They were divided into several categories:* **Heat source.** Is should be renewable energy source or district heating network, natural gas, alternative solutions. Heat source should be integrated with the building, i. e. located on its grounds or located directly next to it (not applicable for district heating network). The cost includes the purchase, installation, all necessary connections, water tanks and other installations in the building itself and which are related to the heat source (necessary for its operation). Total costs of heat source and hot water. together with the necessary installations, they may not exceed 10% of the costs of the building itself. The source may not be used for the needs of another building (except for district heating network).
* **A source of domestic hot water**. Renewable energy source or district heating, natural gas, alternative energy sources. The use of dual function solutions (i.e. comprising heating with domestic hot water) is permitted provided that the requirements specified for heat source are met. The qualifying cost includes purchase, installation, all necessary connections and installations, water tanks in the building itself. Total costs of heat source and hot water. along with the necessary installations, may not exceed 15% of the costs of the building itself.
* **Electricity source.** Electricity grid, renewable energy source, natural gas (only in cogeneration or trigeneration), alternative solutions. The cost includes the purchase, installation, all necessary connections and installations, water tanks on the building side. The total cost of the electricity source including the necessary installations shall not exceed 15 % and, in the case of high-efficiency cogeneration or trigeneration, 30 % of the cost of the building itself. The electricity generated must only cover the building's needs, operate off-grid or have a blockade of access to the network.
* **Preparatory and verification costs.** This includes design and construction documentation, energy audits, building tightness test, certification costs etc. Total costs in this category may not exceed 10 % of eligible costs.
* **Cost of construction works and materials.** This includes such elements as: preparation of land for construction works; construction work including finished building shell; connection and installation of all necessary installations; ensuring heat recovery in a building, including the purchase and installation of a heat exchanger; purchase and installation of passive building specific elements; completion works; purchase and installation of low-energy lighting; land development around the building in necessary elements for its functioning as a passive building as well as purchase and installation of an energy management system.

Apart from this a catalogue of unqualified costs was also developedIt was also necessary to determine the level of support which on one hand would be a sufficient incentive effect and on the other conform all the regulations on ERDF financing. The cofinancing was set to 65% of qualifying costs.Another step necessary to undertake is to implement the defined solutions into the ROP. It needs decision by Managing Institution of the Regional Operational Programme (which is the Regional Management Board of Podkarpackie Region) and securing sufficient financial sources for this purpose.After finishing preparatory stage a call for proposals will be announced. It is expected that after conducting all procedures some 10 projects will be implemented in the region thanks to this support scheme.1. **Players involved** (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)

**Urząd Marszałkowski Województwa Podkarpackiego (Podkarpackie Regional Authority)** – Podkarpackie Regional Operational Programme managing authority. It is responsible for applying changes to the programme. Its role is to adapt the measure taking into account all regulations considering structural funds, public support, Polish and EU legislation. The authority coordinates works and participation of other stakeholders in the process.**Local municipalities** – potential applicants. They expressed interest in passive buildings and they describe their needs in this respect.**Professional organisations in construction and civil engineering** – they will elaborate feasible solutions that compromise need for high energy efficiency standard and affordability.1. **Timeframe**

2017 – elaboration of the scheme2018 – conforming legal obligations, securing financial sources2019 – call for proposals2019 – 2021 – implementation of the construction works1. **Costs** (if relevant)

Needs are very high, but it has to be adjusted to existing possibilities. It will be determined on a later stage.1. **Funding sources** (if relevant):

ERDF (Podkarpackie Regional Operational Programme 2014 – 2020) |
| **ACTION 4****ENERGY FOR EVERYBODY - LOCAL ENERGY ADVISORS IN EVERY MUNICIPALITY**1. **The background** (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)

The action uses lessons learnt from ZagEE project - Inducing change in behaviour through energy managers and end-users capacity building. This project used prepared guide for facilities managers of buildings renovated through ZagEE project. Facility managers were also involved as advisors during the planning process in order to receive maximum feedback from building users. This two-way communication was additionally reinforced with a series of capacity building events for facility managers that were held by City of Zagreb and REGEA’s experts. Another project that constitute basis for the development of the action was Target 2050, especially in the context of an expert advice programme to support whole house sustainable energy retrofit which included a home survey, a report and follow-on support. Another interesting example was Grant for municipal Energy and Climate Advisors (from Sweden) which enabled all Swedish municipalities to apply for a grant for a municipal Energy and Climate Advisor. The grant has been existing for most of the past 40 years. The size of the grant and the assignments for the advisors has evolved over the years as energy issues in society has changed. The problem in Polish conditions that must be faced is lack of knowledge (or insufficient knowledge) of house owners and of facility managers on energy efficiency measures that can be implemented in their dwellings. Very often people want to make economies at home and apply new solutions for this purpose, but their knowledge is very limited and what they get in the Internet is not a solid information. They don’t know whom they should address with their problems and often they come to municipal offices. Municipal officers have also limited knowledge on these subjects, and even if they have it is difficult to transfer it to local inhabitants.1. **Action** (please list and describe the actions to be implemented)

The action aims at preparation of energy advisors in every municipality in the region in order to support people in choosing and applying energy efficiency measures that are fit for them. This would involve local authorities which are in daily contact with their citizens. The action will be composed of the following:* Preparation of the training programme for energy advisors. This will be done with support of Rzeszów Regional Fund of Environmental Protection and Water Management, where there are already qualified energy advisors. They are only located in Rzeszów, so access to them, especially in small village communities is very limited. Still they have knowledge and experience that would help to develop training programme. Also materials from BUILD2LC project partners that proved to be successful in their conditions will be used and adopted to local situation. Other stakeholders, such as e.g. Podkarpackie Chamber of Civil Engineers and other professional companies, organisations and/or clusters as well as NGOs will assist in develop the programme. Apart from the training itself guide for energy advisors will be developed together with leaflet and/or brochure for final beneficiaries. Rzeszów Regional Development Agency will apply for financing the programme.
* Gathering participants for the trainings. All local authorities will be invited by Podkarpackie Regional Authority to take part in it and the project will open with a conference for mayors on the importance of energy advisory for local people. The conference will be held in the premises of the Regional Authority. The mayors will be encouraged to nominate candidates for the trainings and to raise salary of the officers who will successfully accomplish the trainings. As a follow up all interested parties will assign one or two officers who will be trainees in the project.
* Training programme. It will be composed of several units, each of them led by specialists – either energy advisors, experts, professionals etc. The trainings will concentrate on practical aspects that are most important for average people. Plain language for explanation of the energy related issues will be used. Trainees will be encouraged to discuss real issues they encountered in their communities. After successful completion of the training the participants will get status of energy advisors.
* “Warm-up”. Project trainers with newly appointed energy advisors will prepare and conduct trainings for school children on everyday aspects of energy usage and of the costs connected with it. Children will also get some small gadgets (e.g. paper thermometer which shows optimal temperature at home or something else) and contact data to local energy advisors.
* Energy advisors will send back information on the advice they provided. That will help to monitor needs of people in the region and shape future policy instruments.
1. **Players involved** (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)

**Rzeszowska Agencja Rozwoju Regionalnego (Rzeszów Regional Development Agency)** – the agency will coordinate all activities and act as project manager. It will also manage project and supervise all procedures and in case of receiving grant from National Fund of Environmental Protection and Water Management. The Agency would also organize meetings of experts setting the standardized measures, and assist in development of the training programme. **Podkarpacka Izba Inżynierów Budownictwa (Podkarpackie Chamber of Civil Engineers)** – The Chamber will provide expertise in the preparation of the training programme. It will also help to create guide for application of energy efficiency measures at home.**Wojewódzki Fundusz Ochrony Środowiska i Gospodarki Wodnej w Rzeszowie (Rzeszów Regional Fund of Environmental Protection and Water Management)** – the fund will provide energy advisors who already have some experience in advisory.**Local Authorities** – will provide officers who will learn to become energy advisors. They will also provide organizational assistance (e.g. for trainings at schools).**Urząd Marszałkowski Województwa Podkarpackiego (Podkarpackie Regional Authority)** – the authority will help at the organisational stage of the project, it will provide premises for the opening conference, invite mayors and take patronage over the entire action.**External experts, NGOs, clusters** – they will assist in the development of the training programme and materials. They will also provide trainers for the programme.**Inhabitants of the region** – they will look for advice and for support in energy related issues. They will be also final beneficiaries of the action.1. **Timeframe**

2018 – development of the project. Application for external funding, elaboration of the detailed training programme and materials.2019 – implementation of the project1. **Costs** (if relevant)

The costs still need to be estimated in detail. In general approximation it is about 1 000 000 PLN (some 227272 euro).1. **Funding sources** (if relevant):

Most likely source of financing is National Fund for Environmental Protection and Water Management (national sources). Other possible sources will be examined. |
| **Date**:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Signature**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Stamp of the organisation (if available):** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |