



Build to Low Carbon (build2LC) Action Plan

September 2018 – August 2020

Policy Context & Delivery Plan for

SLOVENIA

Collaboration between LEAG Lokalna energetska agencija Gorenjske and ApE Agencije za prestrukturiranje energetike on preparation of the action plan.

Managed by LEAG Lokalna energetska agencija Gorenjske, Slovenija

September 2018

Part I – General information

1.1.1 Background

The Build2LC is following an innovative multi-disciplinary approach by tackling challenges which impact the quality and uptake of domestic energy retrofit in order to find a more sustainable solution longer term. Therefore, the project is focusing on the six priority areas shown in **figure 1**.



Figure 1: Build2LC priority areas of work

The final outcomes of the project will include improvements to domestic properties and the awareness of households alongside wider benefits such as upskilling the labour force in the county and stimulating economic growth. The whole project is underpinned by a focus on relieving vulnerable groups from energy poverty: energy rehabilitation can have a greater impact on the health and well-being of these residents. We estimate that it will be very important for realisation of the Action plan, to acquire in the collaboration the most important stakeholders and decision makers in Slovenia.

Build2LC is part of the EU funded Interreg programme which focuses on collaboration and learning across member states. In this case, LEAG Lokalna energetska agencija Gorenjske, representing Slovenia, is working with partners from: Andalusia, Spain; Gloucestershire, UK; Jämtland, Sweden; Lithuania; Poland; and Croatia.

1.1.2 Sharing Good Practice

Each partner involved brings expertise in different fields and the project aims to develop regional cooperation between Member States to share good practice to inform the development of action plans within each partner region. This collaboration began with inter-regional seminars on: *innovative financial instruments* (Lithuania); *innovation* (Sweden), and *new energy culture, citizen involvement and energy poverty* (Gloucestershire, UK). Over 70 good practices have been shared between partners and their stakeholders to identify the most relevant good practices to adapt and adopt in each region before bi-lateral meetings took place.

In LEAG and ApE we have up to now shared good practice with:

- RJH, Jamtland, Sweden and AEA, Andalusia, Spain about the Warm & Well Scheme and Severn Wye Energy Agency's education projects.
- REGEA, Croatia about defining energy poverty and implementing mechanisms to tackle energy poverty nationally
- RRDA, Poland about defining energy poverty, the Energy Company Obligation (ECO), the Link to Energy Installer network, and Severn Wye Energy Agency's Target 2050, Countdown to Low Carbon Homes and Warm & Well programmes.

In bilateral meeting in Lithuania we learn further about:

- Procurement processes
- Engaging citizens and activating demand
- Financial instruments

Further learnings took place from REGEA, Croatia, about their System for monitoring, measuring and verification of energy savings (SMiV) and from Solsolar, Catalonia, Spain about their solar thermal installation ESCO model.

The Slovenian Build2LC action plan builds on the ideas of a wide range of stakeholders across the county, national policy and European policy and agendas as well as the direct learnings from project partners.

Part II – Policy context

Slovenia prepared in 2015 the Long-Term Strategy for Energy Rehabilitation of the Buildings (Strategy) and in 2018 the Addition to the mentioned Strategy. The strategy was prepared according the requests and guides, from the 4th paragraph of the Directive 2012/27/EU on Energy Efficiency. The amendments were focused on the following measures:

1. The quality management should follow the sustainable criteria in the whole life cycle of the buildings (design, construction/reconstruction, management/operation, etc). There is a need to get more adequately oriented collaboration between different sectors as building, architecture, space planning, energy, health, education, economy etc.
2. From the approval of the PURES (Regulation on Energy Efficiency) in 2010 a lot of changes happened in the EU and national level, so there is a need for renovation of the act, especially regarding the calculation and implementation of renewable energy sources.
3. The criteria for financial support of energy rehabilitation of cultural heritage buildings should be adapted in a way, that the owners of these type buildings will gain the appropriate interest for investments.
4. There are the interests for development of financial instruments for further deployment of the market of energy contracting for rehabilitation of public and multi-apartment houses.
5. Enlargement of the activities of the Eco found in the field of individual buildings, information, and awareness, energy poverty sector, energy consultancy network ENSVET, education of installers and others taking part in the rehabilitation and more support for the use of wood as construction material.
6. Better information system for energy rehabilitation of the buildings and use of renewable energy sources, especially for heating, where the statistics is rather poor.
7. Establishment of a systems for complete rehabilitation of buildings, together with earthquake safety and other technical improvements, important for health and functionalities.
8. Green public procurement should incorporate in the selection criteria not only the lowest investment price, but also the costs in the life time and environmental impacts.
9. Financial supports for energy efficient rehabilitation and sustainable construction of the buildings in the public sector with the aim to develop financial instruments and removal of the barriers for energy contracting and some pilot projects.
10. Implementation of the system for energy management in the public sector, with nomination of energy managers, regular following, bookkeeping and reporting on energy use.
11. For the efficient implementation of the energy rehabilitation of buildings in the public sector, the Office for Energy Rehabilitation of Buildings (OERB), was created within the Ministry for the infrastructure. The OERB should reinforce the work in the system for improving the quality of designs, analysis of already executed rehabilitations, better supervision, enhancement of preparation of the projects for energy rehabilitations in the public sector and preparation of standard documentation and protocols for energy contracting.
12. Financial supports for efficient energy rehabilitation and sustainable construction of multi-apartment residential buildings, with support of demonstration projects in criteria of nearly zero energy rehabilitation and energy contracting.
13. Special attention is given to the people in the category of energy poverty, where additional instruments, supports and approaches should be developed.
14. Enlargement of the activities of the energy consultancy network ENSVET in the field of promotion, availability of information and electronic interactions, more supports for services directly connected with implementation.
15. Financing of energy rehabilitation of multi-apartments buildings requires adequate, less bureaucratic formal basis for decision making, better involvement of commercial banks and less risks connected with potential loss of ownership.
16. Adequate split of supports between the owners and rentals in residentials multi-apartment buildings, where according the recent regulation, the rentals are not motivated for energy rehabilitation.

17. A guaranty scheme for individual persons is not available, its implementation would enhance the acquisition of financial means of individuals for energy rehabilitation.

The key assumptions of the Long-Term Strategy of Energy Rehabilitation of the Buildings are as follows:

- grants for up to 40% of investment's eligible costs,
- only deep energy renovations are co-funded,
- the minimum investment amounts set for Public Procurement (PP) and Public-Private Partnership (PPP).

The combination of grants and energy performance contracting shall nullify the problems of:

- exhausting economically interesting savings potential for easy partial renovation measures on building's systems,
- desire to implement only low-hanging fruit projects,
- implementing non-optimal projects in the view of technical solutions and costs.

The main targets of the Long-Term Strategy of Energy Rehabilitation of the Buildings in the period 2016-2023 is the energy rehabilitation of 3% of the area of governmental buildings yearly and 1,8 million m² of the areas in the larger public sector. In the years 2016 and 2017 the results were rather poor, so there is a request to be more intensive with the activities in the remaining period.

Part III – Details of the actions envisaged

ACTION 1 – Energy rehabilitation of the governmental public buildings

Present situation:

Innovative financial scheme with contracting, which will allow private equity / crowdfunding to participate in energy rehabilitation of governmental public buildings. The 3% yearly rehabilitation in the period to 2023 is foreseen in the Strategy and is in accordance of the EU Directive. The good results should serve also as proper motivation for all other sectors.

Four applications for energy rehabilitation of central government buildings were submitted insofar and all operations were granted cohesion funds. The total investment of 9.9 mio euros for net floor area of 57.800 m² will be granted 3.9 million EUR cohesion funds and result in 5.3 GWh/a total final energy savings. The projects are implemented in public procurement (PP) and will give many experiences and the lessons learnt. Together with the experiences from other projects, from other countries, will represent a good basis for further implementations. As the buildings are operated by different ministries there is a need to plan and operate the action by a coordinative body.



Figure 2: Planned energy rehabilitation of one of the Policy building

The ministry for Infrastructure continues the activities. On the 23.2.2018, the ministry published the Invitation for „Applications for proposals of energy rehabilitation of governmental building in the year 2018, 2019 in 2020,, with the following main data:

- The available tendering amount for subsidies is 7.647.059 EUR
- Eligible for applications are narrow public sector - governmental entities
- The tender will be opened till the money disbursement

The ministry for infrastructure published on the 2.3.2018 also the Public tender for concession of the services for energy contracting, based on energy efficiency measures for the following buildings: policy building at Kotnikova Ljubljana, Nova Gorica and Idrija, Policy academy Tacen and Center for supply Gotenica.

The partner selection will be made in three phases:

1. Phase of approval of competence of contractors
2. Phase of dialog
3. Phase of contracting

The main criteria for the partner selection are:

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- level of achieved energy decrease,
 - amount of proposed measures,
 - time of concession period,
 - guaranties after the concession period,
 - level of investments.

The base for proposals are the deep energy audits.

Proposed activities:

According the Strategy the Office for Energy Rehabilitation of Buildings (OERB) within the Ministry of infrastructure was created for the efficient implementation of the energy rehabilitation of buildings in the public sector. The OERB should reinforce the work in the system for improving the quality of designs, analysis of already executed rehabilitations, better supervision, enhancement of preparation of the projects for energy rehabilitations in the public sector and preparation of standard documentation and protocols for energy contracting.

The OERB has made the evidence of the buildings. The real situation has, to be further and deeper analysed with prioritisation, energy audits and planning of execution. Based on the gained experiences from the implemented projects in public sector in the past years, it would have sense to use the OERB for managing the energy rehabilitation of the governmental public sector.

There is a need to check the operability of the involvement OERB and if this option is not realistic, then it is required to find with stakeholders an appropriate body to operationally manage the action. It is important that the implementation is managed by competent institution in technical and financial means. It would be very useful to get the information, how rehabilitation of this type of buildings is operated in other regions and countries.

ACTION 2 – Energy rehabilitation of other public buildings

Present situation:

Innovative financial scheme with contracting which will allow private equity / crowdfunding to participate in energy rehabilitation of public buildings. The rehabilitation of 1,8 million m² in the period to 2023 is foreseen in the Strategy and is in accordance of the EU Directive. The good results should serve also as proper motivation for all other sectors.

In the past two years some pilot projects of energy rehabilitation were implemented, namely: the CŠOD Bohinj, three buildings of curia of Celje, Slovenj Gradec and Murska Sobota, communal building in Šmarje pri Jelšah and five buildings of cultural heritage. The implementations were coordinated by a special project group and project board. Both were constituted specially for this purpose and finished their involvement with the completion of the investments. The projects were implemented in public private partnership (PPP) and gave many experiences and the lessons learnt. Together with the experiences from other projects, from other countries, represents a good basis for further implementations.

The group of pilot projects were so completed and the Ministry for infrastructure continue the activities. On the 23.2.2018 the ministry published the Invitation for „Applications for proposals of energy rehabilitation of broader public buildings in the year 2018, 2019 in 2020„

- The tendering amount for subsidies is 14.117.647 EUR
- Eligible is the broader public sector – where RS is the founder
- The tender will be opened till money disbursement
- The rehabilitation foresees the renewable energy sources (RSE), as biomass boilers, thermal solar collectors, heat pumps, **but not PV!**

The ministry for infrastructure published on the 16.2.2018 also the Public tender for energy rehabilitation of public buildings in the ownership or operation of local communities for the period 2018-2020

- The tendering amount for subsidies is 17.6477.059 EUR
- Co-financing is up to 40% of eligible costs
- Local community has to have a valid Local energy concept
- Estimation of the contracting approach has is required
- Deep energy audit for the buildings required
- The rehabilitation foresees the RSE, as biomass boilers, thermal solar collectors, heat pumps, **but not PV!**



Figure 3: Integration of PV on the public kindergarten Preddvor

Both public calls are not foreseeing PV as an important renewable energy source, even-though we can see from figure 2, that there are already good experiences also in Slovenia. PV is namely the most important local RSE for buildings and it is so very important that is properly integrated in the buildings envelopes.

Proposed activities:

There is a need to check the operability of the proposed option with the OERB and the Ministry of Infrastructure. If this approach is not realistic, then it is required to check on additional meetings with stakeholders the feasibility of the action and find one other appropriate body to run the action. There would be very useful to get the information, how the energy rehabilitation of this type of buildings is operated in other regions and countries.

The buildings (universities, institutes, medium and elementary schools, kinder gardens, elderly houses, sports halls etc.) are operated by different ministries and institutions, there is a need to plan and operate the action by a coordinative body. The Office for Energy Rehabilitation of Buildings (OERB) should find and support, within the mentioned institutions, the executive bodies for energy rehabilitation implementation. These bodies should investigate the situation in their sector and prepare the prioritisation, energy audits and planning of execution.

It is important that the implementation is managed by competent institution in technical and financial means. It would be very useful to get the information, how rehabilitation of this type of buildings is operated in other regions and countries.

ACTION 3 – Energy rehabilitation of the buildings of companies in the state ownership

Present situation:

A series of companies in the energy, communal and other sectors are in the predominant ownership of the state or local communities. The companies are generally in proper technical and financial condition to manage the energy rehabilitation of their buildings by themselves. There is an impression, that they are somehow not adequately motivated or requested to act. The professional approach of these companies could and should serve as proper motivation for all other sectors.

From the technical point of view, there are many good practices and the lessons learnt from the energy rehabilitation projects in Slovenia and other countries, which can constitute a good basis for the development of the action.



Figure 4: The building of EIMV and ELES for example, needs the energy rehabilitation

Proposed activities:

There is a need to check the operability of the proposed option with the OERB and the Ministry of Infrastructure. If this approach is not realistic, then it is required to check on additional meetings with stakeholders the feasibility of the action and find one other appropriate body to run the action. There would be very useful to get the information, how the energy rehabilitation of this type of buildings is operated in other regions and countries.

There is a strong need to motivate the management of these companies, through the Boards, where the state and local communities have the predominant influence. Additional meetings with OERB and the ministries will be required to prepare and run the action. It would be very useful to get the information, how the energy rehabilitation of this type of companies is motivated in other regions and countries.

This type of companies oriented to serve a broad number of consumers and are somehow less motivated to take actions on energy rehabilitation of their own buildings. With technical experiences, they should become also the market leaders for proper integration of renewable energy sources on the buildings. The Office for Energy Rehabilitation of Buildings (OERB) should find the way to motivate the management of these companies for implementation.

ACTION 4 – Simplification and standardisation of procedures for multi-apartment buildings

Present situation:

The Strategy gives the adequate importance of energy rehabilitation of multi-apartment buildings and defines that the financing requires adequate, less bureaucratic formal basis for decision making, better involvement of commercial banks and less risks connected with potential loss of ownership. The Strategy says, that the relevant ministers have to find adequate solutions for these aspects, connected with all types of renovation. Unfortunately, the mentioned problems remain still unresolved.

Regarding technical approach of rehabilitation of multi-apartment buildings there were already many implementations, with good and bad experiences. The approach is left to operating administrative companies and building residents. They have no adequate knowledge and experiences so, there is a continuous risk for bad praxis. The strategy is mentioning the importance of quality in all phases of energy rehabilitation, but is not giving concrete solutions for deployment of good practices, standardisation of approaches and implementation of innovative financial instruments.



Figure 5: Example of the energy rehabilitation of one part of multi-apartment building

Proposed activities:

From the BUILD2LC project we have learned, that there are already good practices, experiences and the lessons learnt in Lithuania, with the renovation managers. Involvement of renovation managers, simplification and standardisation of required procedures will enable to faster implementation and use of innovative financial scheme with contracting and private equity / crowdfunding to participate in energy rehabilitation of multi-apartment buildings.

In Lithuania the Local communities are obliged also to prepare the implementation plan for energy rehabilitation plan for all multi-apartment buildings in their territory. From the plan they get the comparable situation of the energy status of the buildings and made the prioritisation, approach the local communities appoint the renovation managers for energy rehabilitation of multi-apartment buildings. The administrators manage the whole process together with financing. The owners have the right to select the manager and have, to vote for the rehabilitation project. For both approvals it is needed 50% + one vote. The law income people get 100% compensation for the costs from heating compensation fund.

We estimate that it will have sense to organise some working meetings between the representatives of involved institutions from Lithuania and Slovenia in coordination of the OERB, the Ministry of Infrastructure and the Ministry of Environment. The aim of the collaboration should be, to prepare the required changes in the laws, ordinances, management and procedures in Slovenia in a way to simplify and standardise the approach.

The Office for Energy Rehabilitation of Buildings (OERB) should find and propose, in collaboration with all relevant ministries and institutions, the required changes in the laws, ordinances, management and procedures and foresee, that they will be implemented in near future.

A guaranty scheme for individual persons is not available, its implementation would enhance the acquisition of financial means of individuals for energy rehabilitation.

ACTION 5 – Elaboration of EE implementation plans for multi-apartment and public buildings by all Local Communities

Present situation:

In Slovenia the Local communities are already obliged to prepare every four years the Local energy concept (LEC), which elaborate the recent energy supply and environmental emissions and foresee the potential to increase the energy efficiency in the local community and use of locally available RES. Implementation of the energy rehabilitation plan for multi-apartment and the public buildings is somehow already part of the LEC, but should be more explicitly and detailedly elaborated.

There are already good practices, experiences and the lessons learnt from Lithuania. In Lithuania the Local communities are obliged to prepare the implementation plan for energy rehabilitation for all multi-apartment buildings in their territory. The plans give the real energy status of the buildings, prioritisation for rehabilitation, approach, time schedule, financing, etc.

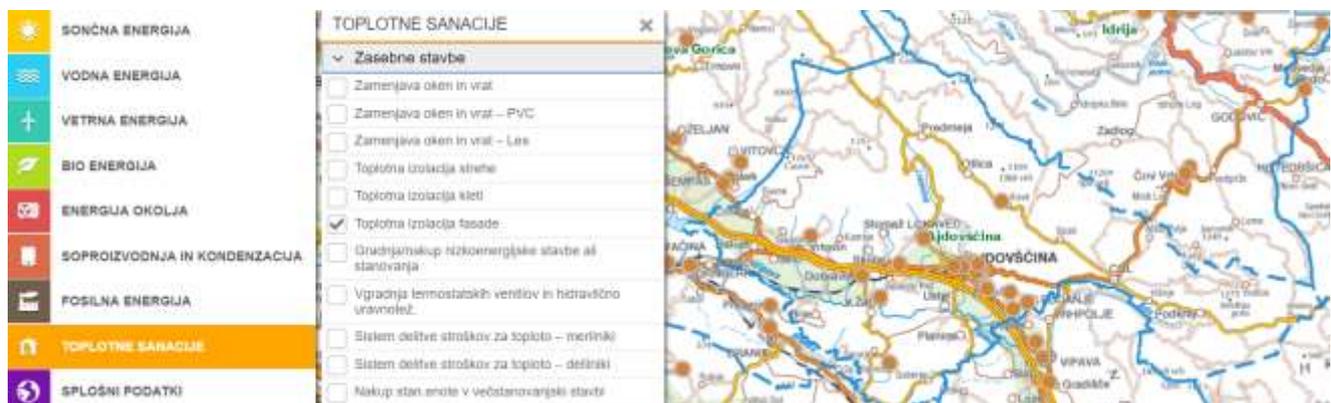


Figure 6: Energy rehabilitation of facades in the Local Community of Ajdovščina

Proposed activities:

As mentioned the local communities are obliged to prepare the LEC. In the above figure we can see the example of executed rehabilitation of the facades in the Local Community of Ajdovščina. In the similar information system would be possible to make the evidence, with main data and prioritisation of the energy rehabilitation for multi-apartment buildings. The Implementation plans for multi-apartment buildings if well prepared and communicate in adequate positive way, could represent an important opportunity for all stakeholders and interested parties.

For these reasons, we estimate that it will have sense to organise some working meetings, within the BUILD2LC project, between the representatives of involved institutions from Lithuania and Slovenia in coordination of the OERB, the Ministry of Infrastructure and the Ministry of Environment. The aim of the collaboration should be to prepare the required changes in the laws, ordinances, management and procedures in Slovenia in a way to simplify and standardise the approach.

The Office for Energy Rehabilitation of Buildings (OERB) should find with relevant institutions, the required changes in the laws, ordinances, management and procedures in Slovenia.

ACTION 6 - Promotion and Financial Support of EE measures for individual buildings, with special attention to energy poverty aspects

Present situation:

A big series of EE measures were implemented by the owners of individual buildings and households. Up to now, majority of the actions were managed by aware and financially better situated individuals. There is a need to elaborate and widely promote the Good Practice examples and find the support models for low income building owners.

There are many good practices and the lessons learnt from the projects in Slovenia but are not available to broad public. There is a need to analyse and elaborate the good examples and made them available on the internet and relevant media.

Energy suppliers and ESCOs are quite new in this business and prefer public owners with predictable stability. Low income owners represent the additional risks and so the implementation of energy rehabilitation of these type of buildings are not possible without strong supporting mechanisms by government institutions and local authorities.

Proposed activities:

There is a need to study and investigate on possible approaches for low income owners. It would be very useful to analyse and get the information, how to motivate this type of owners and the service companies to perform the energy rehabilitation. Both of them need some special instrument of support in the way, that they get motivated for such collaboration and financially positive results.

Already aware building owners need information and some small stimulation. The low income owners need service companies and other institutions to carry on and finance the implementation on long term basis. There is a need to find instruments and supporting mechanisms to stimulate energy suppliers and ESCO companies to enter also in energy rehabilitation of this kind of buildings.

ACTION 7 – Support and education of architects, engineers and installers – Good Practices

Present situation:

Architects, construction engineers and installers involved in the energy rehabilitation of the buildings have many times the lack of knowledge and experiences. The sector is continuously in development so there is a need to learn from Good Practices and, also from good and bad experiences. On the other hand, even more, the lack of knowledge and information is by the all kind of individuals and institutions, as investors in energy rehabilitation and locally available RES. In such circumstances it is difficult to get positive changes and is so extremely important to develop and spread continuously adequate verified information by independent institutions and experts.

There are many good practices and the lessons learnt from the projects in Slovenia and other countries, which should be the basis for the permanent training, education, certification of procedures and involved persons.



Figure 7: Example of good architectural integration of PV on the facade

Proposed activities:

The basic education is not giving to the involved experts and persons enough knowledge regarding the energy rehabilitation of buildings and integration of renewable energy sources. The knowledge and experiences are mainly coming from the continues research and implemented projects. There is a need for periodic training and education. For the motivation for involved experts and persons it is important, that this additional trainings and education are not formally requested.

The strategy pointed out the need to have more adequately oriented collaboration between different sectors as building, architecture, space planning, energy, health, education, economy etc., what of course need somebody, who leads the collaboration. The Office for Energy Rehabilitation of Buildings (OERB) should find the way to develop the basis and motivate the collaboration in the field of energy rehabilitation and integration of RES in the building. In some cases, there is a need for guides in some cases also prescribed regular certificates and certifications.

It would be very useful to get the information, how the training, education, and certification of involved persons in the energy rehabilitation are motivated, supported and requested in other regions and countries.

ACTION 8 – Simplification and standardisation of procedures for Contracting

Present situation:

The Strategy is pointing out the interests for development of financial instruments for further deployment of the market of energy contracting for rehabilitation for all type of public buildings and multi-apartment houses. Contracting and involvement of ESCOs in the energy rehabilitation of buildings represent an added value for technical approaches as financial instruments, involving private capital and risks.

To have a transparent and well regulated market for the building owners as ESCOs there is a need that the rules are simple, clear, indiscriminately and standardised.

Normally there is a fact, that the building owners or operators are much less skilled and experienced, as the ESCOs for contracting. With the absence of clear regulatory procedures and consultancy, brings the process to not optimal contracts, mainly for the part of owners.

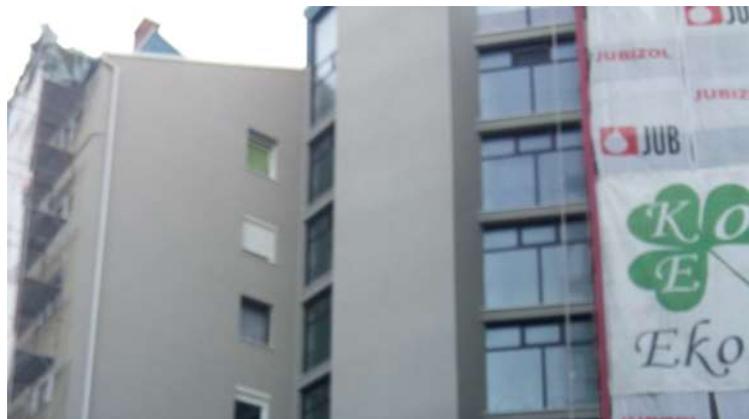


Figure 8: Standardisation of contracting procedures is important for multi-apartment buildings

Proposed activities:

There is a need, to study and investigate on possible approaches for contracting of public buildings, multi-apartment buildings, low income building owners, etc., because each of them needs special treatment.

The Office for Energy Rehabilitation of Buildings (OERB) should investigate the domestic and international practices. The OERB should technically support the owners of the buildings in contracting and negotiations, because they are generally very inexperienced in these topics. It would be also very useful to get the information, what are the experiences in other regions and countries of the BUILD2LC project.

The energy rehabilitation of the building are generally long-term investments. Contracting should be special planned for different type of actions (public buildings, multi-apartment buildings, low income building owners, etc.). Each of the type of the action would need special financial support and approach and standardisation of procedures.

ACTION 9 – Information system EnGIS regarding the situation and implementation measures

Present situation:

The situation regarding the energy rehabilitation of buildings is continuously changing. There is a need that the best data are available in real time to all involved stakeholders and individuals.

Slovenia has already developed the pilot Energy Geographical Information System for Renewable Energy Sources and Energy Efficiency measures (EnGIS). The information system would need a formal operator and further improvements regarding the regular data imports, definition of data availability to different stakeholders, etc.

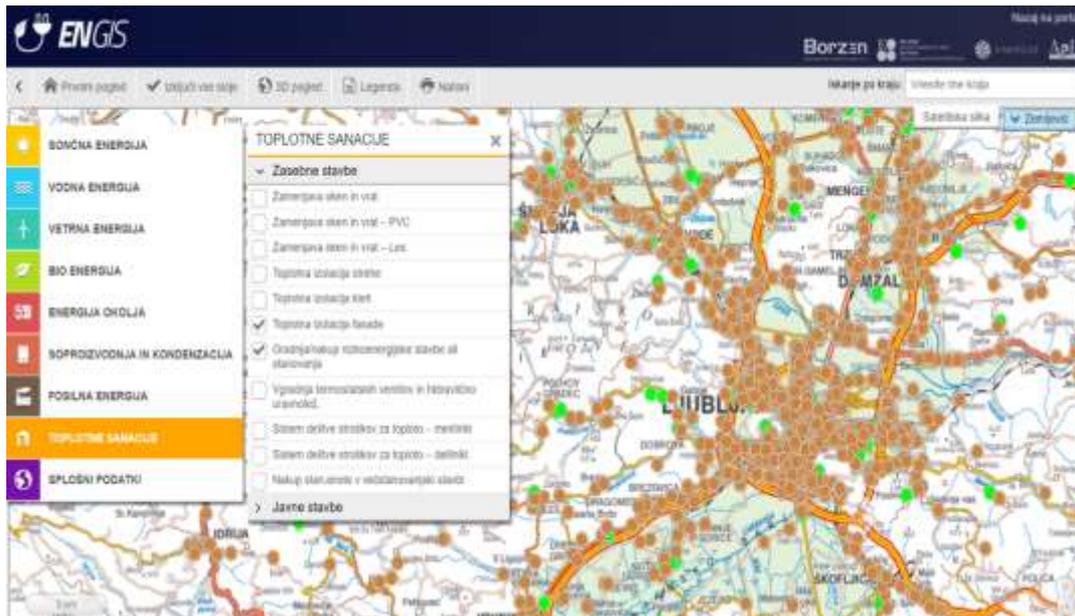


Figure 10: Energy Geographical Information System, www.engis.si

If the EnGIS is not regularly updated, developed for easy use for different stakeholders and promoted than, instead of being an information system, it becomes a disinformation.

Proposed activities:

There are already available some good examples for such information systems, like the Bavarian, which is operated by the regional government. We estimate that it will be useful to organise a working meeting between the representatives of related Bavarian Ministry and Slovenia Ministry of Infrastructure to better understand the approach and added value.

The Office for Energy Rehabilitation of Buildings (OERB), Ecological fund and the Borzen should define the formal operator of the Energy Geographical Information System (EnGIS) and foresee for financial support in implementation, further required investigation on potentials and interactive operation.

If the information system EnGIS would be regularly updated with the data and potentials could serve as the best basis for statistics and planning of activities. For example, the data would enable automation of elaboration of Local Energy Concepts or Implementation Plans for EE of public buildings. Well-developed geographic information system enables the overview of energy supply, energy efficiency and emissions on the level of each building. The potential of all renewable energy sources of the whole territory can be defined on the level of each m². The integration of data is easy possible on the level of district, village, town, local community, region and country, what is the excellent base for all kind of analysis and activities planning.

ACTION 10 – Integration of renewable energy sources (RES) in the buildings

Present situation:

The buildings should provide the energy for their operation from the locally available Renewable Energy Sources (RES). To all buildings is available the sun, heat and cold from the environment, to some of them also wind and biomass. Properly integrated PV on the buildings can provide much more energy as they needed for their operation.

There are already existing some Good Practices (GP) of adequate integration of PV and other RES in the buildings in Slovenia and elsewhere. There are also very many bad examples, which represents a wrong message to experts and public media.

It is very important that the RES integration, especially PV are planned at the basic architectural design of the new buildings, and at the same time when we are planning the energy rehabilitation of buildings. Even if the application of integration of RES are made in some later phase, it is important that the plans are made in advance. In majority of the cases the energy rehabilitation of the buildings is not planned at the same time with integration of the RES in the buildings.



Figure 11: Example of good and non-optimal integration of PV on the building's roof

The good practices (GP) should be well analysed, documented and widely promoted in the expert level and public media. The bad examples as well, with elaboration of negative effects.

Proposed activities:

The Office for Energy Rehabilitation of Buildings (OERB), Ecological fund and the Support Centre Borzen, together with the Chamber of Architects and other expert institutions and associations should be involved in analysis of good practice (GP) approaches and widely and continuously promote the appropriate use of RES within the buildings and make attention to bad experiences, with adequate explanation.

We can see even from the recent public tenders of the Ministry of infrastructure for energy rehabilitation of the public building, that they foresee the integration of RES in the eligible investments, but without the PV. This is a wrong message to all stakeholders in building's energy rehabilitation. The buildings should foresee in the future as much energy as they can from the available local renewable energy sources (RES). Solar energy is available to each building, other RES are more specifically available. Well planned integration of PV modules in the building's envelope (roofs, facades and transparent parts) can in majority of the cases, produce more energy than an individual building is requiring. That means that can foresee a part of over production of energy and sell this energy to the electrical grid for common use of the society. We are talking about energy positive buildings. In a way that such development is possible it is important that already in the conceptual architectural design of the new buildings and in the design of energy rehabilitation of building's, that the integration of PV is part of the investment, or the buildings is foreseen for easy integration in the later future. Un-fortunately the knowledge of architects, space planners and building's owners, is in this segment very scarce, so the big majority of

implementations are bad examples. There is a need to expert work and development of obligations and guides for spatial planners and architects for the local conditions for buildings, which have to adequately incorporate the PV integration on the buildings. Of course, there are buildings with cultural or tradition values, which are not appropriate for PV integration. Rehabilitation of such buildings without PV should be and not a norm for all buildings.

ACTION 11 – Enlargement of activities of Eco found, ENSVET and banks

Present situation:

The Strategy foresaw the enlargement of the activities of the Eco found in the field of individual buildings, information and awareness, energy poverty sector, energy consultancy network ENSVET, education of installers and others taking part in the rehabilitation and more support for the use of wood as construction material, which is gaining more and more importance. We can see example of construction of the Squash hall, where the wood was used as the basic construction material. At the end, the facade was isolated and finalised in the same maner as the other buildings in the square.



Figure 12: Example of a Squash hall, with wood as the basic construction material



Figure 13: The façade was further isolated and finalised as other buildings in the square

Enlargement of the activities is foreseen also for the energy consultancy network ENSVET in the field of promotion, availability of information and electronic interactions, more supports for services directly connected with implementation. The recent availability of ENSVET is available on www.engis.si as showed in the figure 6.

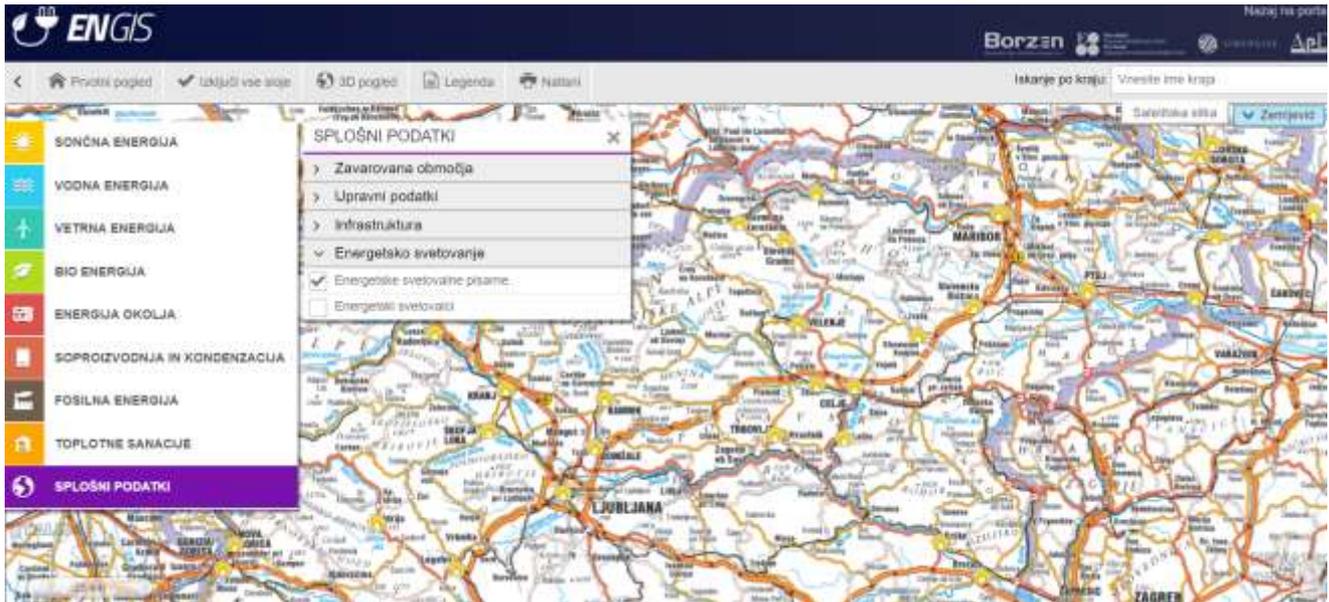


Figure 14: Energy Consultancy Network (ENSVET), www.engis.si

Proposed activities:

The Strategy is giving an important priority to enlarge the activities of the Energy consultancy network ENSVET. The information of the Eko found should not include only the data about subsidy and loan schemes, but much more techno-economic feasibility and efficiency of energy rehabilitation, the importance to control and improve the earthquake safety before or at the same time and broad promotion of Best practice examples, together with proper documented explanations. The information should be available to all interested parties on the webpage and well promoted.

The ENSVET network is operating for more than 25 years and is organised on the Slovenian level. Of course, the experts from the network have well contributed to the energy rehabilitation of individual buildings, but on the other side the amount of services rested, more or less at the same level. In this time, the regional Local Energy Agencies (LEA's) were founded over whole Slovenian territory, which are giving support to local communities, multi-apartment buildings, companies, institutions and individuals.

We estimate that it would have sense to incorporate the services of the ENSVET network to the normal work of the Local Energy Agencies and in this way make the services more professionally and coherent with the activities in the local communities. Besides the existing energy consultants from the ENSVET network all the employees of the Local Energy Agencies should be trained and qualified to give consultations to all local stakeholders and individuals. On the Slovenian level it is important to have the regular education and certification of the energy consultants, what could rest the competence of the Eco found.

In the process of energy and earthquake rehabilitation of buildings it is important to involve also the commercial banks and motivate them to prepare their own long-term financial instruments and loans. For these loans it is important also to arrange the adequate guarantee schemes for individual persons and so lower the risks connected with potential lose of the ownership.