



Result 1.1: Green Sunflower – real example for multi apartment buildings how to think “out of the box” (guidelines)

Consumers and their multi apartment buildings managers, which consider shifting to renewables should prepare for lengthy and complicated process in Slovakia. National legislation is not completely ready, there are different legal, technical and administration obstacles and the awareness about the benefits of the renewables and community energy projects is still not high enough in Slovakia.

It is not easy to decentralize the energy market in Slovakia by disconnection of the multi apartment buildings from the central heating system based on gas due to legislative framework and contracts formulated in favor of the heat suppliers. There is no other heat supplier very often in the area and to build the own boiler room can be impossible for multi apartment building due to property, space and/or climate limitations like no suitable land, lack of ground water or no flat roof...

But seeing the fast development of energy communities in different member states and their benefits for the households, even the vulnerable ones, makes the author of these guidelines believe also Slovak multi apartment buildings can benefit from this fascinating transition of the community paradigm. Groups of neighbors not only plant tomatoes and grill together, but they can even produce, use and sell their own electricity.

So we are glad on our journey with the multi apartment building Slnčnica we have discovered not only obstacles, but also gained the confidence the condominiums are ideally placed to create energy communities under Slovak national legislation and should invest their sources to investigate, what energy mix, based ideally on non-fossil fuel sources from sun, wind, water or heat in the ground is the most effective and available for them. There are different possibilities for different multi apartment buildings in different regions, but the most important thing is to know, there is a solution for everyone. And if there will be an agreement and the real will from the owners in the multi apartment buildings and even owners from other buildings and properties around it or municipalities, they will find even the best technical solution. All they need to do is to think „out of the box “.

How to think out of the box? Guidelines for multi apartment buildings in Slovakia considering transition to renewables

Multi apartment buildings on their journey to be energy efficient and lower the costs of heat and hot water supply by building their own heating systems need to focus on following questions and overcome barriers, which were identified from the analyses and study of feasibility of multi apartment building Slnčnica in City

of Poprad, which is connected to the central heating system of the supplier owned by the municipality.

➤ **1. Legal options to terminate/withdraw the contract with the central heat supplier and its economic impact on the apartment building**

There are only certain periods in the year and specific legal reasons to withdraw the contract with the central heat supplier. These reasons are defined in national Heat Energy Law and do not have to be written directly in the contract between the condominium and the supplier. So it is crucial to know exactly, what is the position of the multi apartment building in this contractual relationship, before the owners consider any next steps.

It is recommended to check if the central heat supplier is obliged and will charge the costs of possible disconnection to the multi apartment building, and how much it will be.

It is also useful to find out the position of the central heating supplier, how much they would charge for the commodity in the case the multi apartment building will be able to cover its heat consumption only partially. There are different prices between full or partial customers due to costs for producing of heat.

Before making any further decisions, it is also essential to know, if flat and other premises owners in the building support the disconnection from the central gas heating system and to get ready for different voting procedures with majority defined in different ways in advance.

➤ **2. The agreement of the owners in the apartment building to terminate the contract with the heat supplier**

Energy literacy is still very low in Slovakia and people are not aware of the benefits or possibilities of renewable sources of energy or/energy communities. Especially households living in the cities, in multi apartment buildings connected to central heating systems for decades, often cannot even imagine why they should consider to change anything. They have lived without having any thoughts about their energy systems for many years, paying automatically in monthly installments in advance.

So it is crucial to get them on board for more decentralized, ecological and sustainable solutions. According to the experiences of different consumer organizations, especially in post-Soviet countries, the best arguments to get people interested in green transition is the improved quality of life, better comfort, better health, the higher market price of their apartment, and/or savings for future repairs. Self-sufficiency and independence from central prices also becomes an important factor that can influence the behavior of households in multi-apartment buildings currently.

Again, before making any further decisions it is also essential to know what is the support on the side of flat and other premises owners in the building and be ready for different voting procedures with majority defined in different ways in advance.

➤ **3. Different climate, space and technical requirements for different types of heat pumps**

There is a few different types of heat pumps available for multi apartment buildings heating systems. They use energy from air, water or ground. It is highly recommended to investigate the pros and cons for different types, because some may be effective only in regions, where there is outside temperature above zero for the whole year, some of them need two or just one unit, can contain the chemicals, which will be deleted from EU market in following years or need the source of ground water with sufficient capacity. With the type water-water heat pump, there is also obligation to obtain the right to an adjacent plot of land to carry out a survey drilling to check the capacity of the water in the ground.

➤ **4. Possibilities to obtain the right to neighboring land for the location of a heat pump**

It is essential to consider also the location in case the multi apartment building considers to build its own boiler room. It can be very often the trickiest part of the transition. The land can be owned by owners of the apartments in the building, but very often it is a property of the municipality, state or private owner. It is highly recommended to find out, who is the owner, elaborate the financial possibilities of the multi apartment building to buy such a piece of land and prepare for possible negotiations in case the purchase will be needed.

➤ **5. Possibilities of placing photo voltaic/thermal solar collectors on a residential buildings**

This is another new and very complex area for Slovak multi apartment buildings, where individual possibilities of concrete building and its neighbors need to be considered. It is essential to know the difference between these two technologies. Thermal solar collectors heat the water, so the multi apartment building can save the costs of hot water from central heating system during the part of the year, mostly from April till September.

With photo voltaic panels, where the multi apartment building needs ideally flat roof of appropriate size or wall oriented on south, it is possible to produce electricity from the sun for the multi apartment building and/or electricity for the heat pumps producing heat to operate. Again, it is essential to get a few offers and possible technical options from professionals to be able to take informed decision.

For both systems, it is useful to think out of the boundaries of one multi apartment building as such and connect even with the owners of the buildings in closest neighborhood. There is a lot of concrete examples of energy communities, where multi apartment building produces electricity from the sun and whenever they don't need it, they send it to another multi apartment building, the library, nursery, hospital or swimming pool nearby.

➤ **6. The possibility to obtain consent from the distribution company to build a local source for the production of electricity from RES**

To obtain the consent from distribution company can take even four months and again, legislation and contracts terms and conditions are currently created in favor of distribution company. So it means it gives the distributor many options and excuses why not to connect the subject or make this process longer. This is already quite known and long term problem of Slovak energy market. Although we all pay the highest distribution fees in EU in Slovakia, which distribution companies explain it is because they need to finance the modernization of the network, in the moment they are asked to connect new prosumers, they use lack of the grid capacity and its old technical age as an excuse, why they are not able to do so.

It is highly recommended to find out the procedures of the possible grid connection and prepare all relevant paper documentation in advance. Once the decision was made and the condominium is sure they will install photo voltaic, their installer should start connection process in parallel with actual installation as soon as possible.

➤ **7. Consent of the owners in the apartment building for the installation of photo voltaic panels/consent of the owners for the installation of a heat pumps**

To implement the new technologies for heating, hot water and electricity self-production in multi apartment buildings requires consent of qualified majority of flat and other premises owners in the building. It can be a challenge, because in Slovakia the renovations of multi apartment buildings have been realized in a not very transparent way very often. It means the installation company is often selected on the bases of family or friendship base. With those new technologies it is crucial to invest appropriate amount of energy and time into the process of selection of the most suitable technology, supplier with the history, relevance, professional experiences and great customer service to be able to get the required majority of owners on board.

It is also good to have in mind that multi apartment buildings are different type of „consumer“ as the single family houses, so we need supplier with this specific cases and technologies.

➤ **8. The owners' decision on how to finance the installation of the photo voltaic panels and the heat pumps**

Each multi apartment building has its own, specific financial situation and has to consider, what its possibilities to finance new technologies are. One option is their Maintenance fund. In Slovakia multi apartment buildings are obliged to have an operation, maintenance and repair Fund, where owners of flats and non-residential premises pay monthly contributions to cover the costs of operation, maintenance and repair of the common parts of the building, as well as the costs of renovation, modernization and reconstruction of the building. A super majority vote of all owners of flats and non-residential premises in the building is required for the use of the Fund's resources for the purchase and installation of a heat pump or photo voltaic panels.

Under the Green Households program, multi apartment buildings can apply for a subsidy for thermal solar collectors for heating the water. There is a lot of specific criteria and the subsidy is 400 €/1 kW of the installed capacity of the solar collectors in the apartment building; the maximum amount of support is up to a maximum of 1 kW of the installed capacity of collectors for each apartment in the apartment building.

The third option are bank loans. A multi apartment building may take out a loan or credit from third parties for the modernization, reconstruction or installation of renewables equipment. Such loans are most often provided by banks to multi apartment buildings. Make sure the interest rates will not increase over the years of repayment, by asking bank to provide interest rates fixation for the entire repayment period of the loan. Every investment consider carefully economically in terms of the amount of investment vs. cost savings vs. return and lifetime of the investment. Many solutions are economically unprofitable, because the return on investment in time is longer, than its lifetime - e. g. in the case of improving the thermal insulation properties of the building, without direct financial support from the state, is the return 2-times longer, than the lifetime of the insulation (high investment vs. low savings). And at least two thirds of all owners of flats and non-residential premises in the building must agree with the loan agreement.

And the last possible financial source is the State Housing Development Fund, which can provide loans to multi apartment buildings to finance the installation of heat pumps and photo voltaic panels at 2% interest rate over the entire repayment period. The repayment term is 20 years, the loan amount is 75% of the acquisition cost, but max. € 110/1 m² of floor area (until 31.03.2023 the limit of € 95/1 m² applied).

➤ **9. Energy communities**

From the position of possible installation of photo voltaic panels on the multi apartment building, the owners of apartments and non-residential premises

in the multi apartment building can establish an energy community for the purpose of electricity production. This refers to the generation, supply, sharing, storage, distribution or aggregation activities of electricity, regardless of the source from which the electricity is generated. It is highly recommended to investigate the potential to establish the energy community not only in one multi apartment building, but investigate the energy, space and consumption potential of the buildings around. Energy community created from more multi apartment buildings, school and trade center can be more beneficial for all its members. One can offer his huge roof for photo voltaic, another one has free land, where is possible to build boiler room for heat pumps. They can produce and share energy for lower price and supply different members in different times. They will share the costs of investment. Or in cooperation with solar parks they can sell the shares to consumers even in other parts of the city or the country. Solutions are endless, just proper strategy and suitable technologies are the key.

➤ **10. Energy poverty**

In addition to energy policies, we need comprehensive social policies that are crucial, especially for vulnerable communities of consumers. In Slovakia there are no special programs or support for energy poor or vulnerable.

In other countries, for the poor households, it has been shown that they are more likely to join the program for other reasons than reducing greenhouse gas emissions. For example, Lithuanian experience shows that it makes more sense to promote support program through incentive factors such as esthetic benefits, improved indoor hygiene, sound insulation, increased value of the apartment (15-25%), reduced costs for repairs in the apartment, lower bills for heating costs, or extending the life of the building by approximately 20 years.

The secret of Lithuania's successful strategy is that program renovation of multi apartment buildings was initiated by the municipalities, which appointed the responsible project administrators and they supervised the entire project implementation. The owners of the flats in the apartment buildings voted only by a simple majority, whether they were in favor of their apartment building being renovated through an investment scheme proposed by the municipality.

To manage the construction projects, the state provided advice to the municipalities and support in the preparation of technical documents. This has made it easier for them to control, contract and manage the project. Selection of the best solution for the modernization of the multi apartment buildings was based on a standardized procedure, on the basis of an economic cost-benefit analysis, and also by comparing several similar buildings.

Introduction of a 100% contribution to cover all initial costs for technical documentation and project management removed barriers to apply for loans.

Low-income households in Lithuania received state support to pay for heating costs. These families thus do not share the benefits that energy-efficient renovations will bring to the owners of other flats.

In order to create incentives for low-income homeowners, the a subsidy of 100% of the renovation costs for families who receiving other social assistance. At the same time, the law adopted in 2013 allowed to limit the compensation of heating costs for low-income families, who refuse to participate in the renovation scheme. The problem of lack of interest of low-income households to participate in the renovation program successfully solved the 100% contribution to all renovation costs and the reduction of potential over payments for heating.

And one last point to managers of the multi apartment buildings, municipalities and even state. Although it is possible to allow low-income households to benefit from the energy transition, these are not actors who can and will participate in the financing of renovations.

Štúdia realizovateľnosti vypracovaná s finančnou podporou