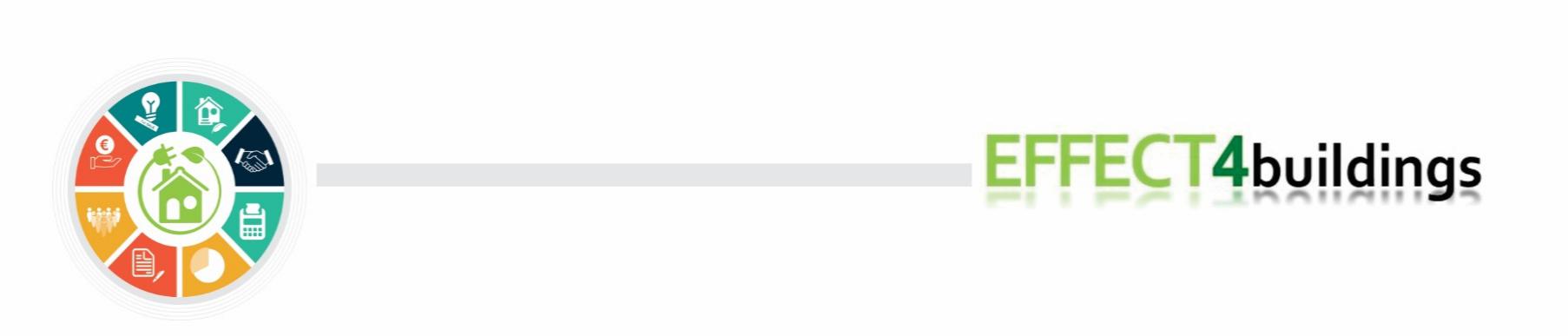
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**Policy recommendations**

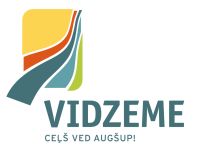


**EFFECT4buildings** was implemented from 2017 to 2020 with the support from the Interreg Baltic Sea Region Programme 2014-2020. The project provides a decision support toolbox that includes means to calculate and plan the renovation projects most feasible and profitable way, as well as being able to convince financial decision makers so that the scope and return of investments would be clearly and convincingly presented. The main target group is building managers in charge of public or privately owned building portfolio.

There were seven partner countries – Denmark, Estonia, Finland, Latvia, Norway, Poland, Sweden. The project was also a part of the implementation of the EU Strategy for the Baltic Sea Region (EUSBSR), being a flagship project under policy area Energy and the horizonal action Sustainable development.

The full toolbox can be found on project webpage: <http://www.effect4buildings.se>

**Partners**



**The need for more action!**

The EU's climate goal is to be fossil-free by 2050, which requires a big reduction in energy use. Investment in energy-efficient technologies and renewable sources of energy is treated as the way to reach the EU objectives at the same time as supporting economic growth through investments.

40 % of the energy use in the EU is related to buildings for either private or public use and for many different purposes, e g: housing, offices, schools, sports, shops, religious activity, industry etc. Less than 3 % of the building stock in the EU qualifies for the A-label, meaning 97 % of the buildings are wasting money and need to be upgraded. All newly erected buildings must have almost zero energy consumption by the end of 2020.

**The dilemma for building managers**

Although many guidelines and documents on energy efficiency in buildings already exist, for example Sustainable Energy Action Plans and energy audits of the buildings, building managers are hindered to start moving towards implementation of the energy efficiency measures.

Lack of knowledge and the absence of track records of accomplishment and experience from different energy efficiency solutions increase the perceived risks and contribute to high transaction costs. Lack of financial and personnel resources increase the challenges. Energy efficiency projects ensure their return on investment through energy savings (non-expenses) and not through an increase in revenues. Financiers are instead culturally trained to support the growth of the project developer, more rarely to take into consideration cost optimisation projects.

Consequently, the implementation of energy efficiency measures is hindered and transformation towards energy efficient buildings is slow and often unnecessarily expensive.

EE = energy efficiency

**Policy recommendations**

Each country has experiences that in addition to the purely technical hindrances such as lack of good case examples or too complex methods, there are elements that are depending on national policy level and legal framework of the country. These elements were identified by the project partners during the development of the tools and are described in this document.

The aim of policy recommendations is for each tool area to provide decision makers with an overview of main challenges as wells as proposed policy approach. We urge relevant decision-makers to analyse which recommendations have not yet been implemented and look for ways to do so.

The recommendations are grouped according to the level of decision-makers to which they are addressed. Recommendations for EU and BSR level are more of a general and overall nature. Situation varies in different countries and regions, which means that the relevance of policy recommendations for national and regional level has to be determined case by case. It is also not possible to point out exactly which actor should be responsible and for which proposals, as the situation varies between countries. Instead, each actor in the field of energy efficiency in buildings should analyse and be inspired by the proposals in order to develop the international, national and regional work.

**Convincing decision makers**

Most of the public building managers have some sort of experience in convincing decision makers to approve energy investments, but due to the lack of practice, building managers are often left on their own on figuring how to convince decision makers to invest in energy efficiency solutions. This is accompanied by the lack of identified dedicated policies and legislation focused on supporting the energy investments.

**Main challenges identified:**

1. Information about EE (including scientific reports, analysis of good and bad practices, promotional materials) is very defuse;
2. Lack of support mechanisms for newcomers in EE field that would allow them to learn more about energy efficiency projects in practice;
3. Many discussions and projects on EE often happen within one unit of organisation or around a single issue, while in reality the topic is of interdisciplinary nature and thus should be analysed and discussed in cross-sectoral environment in order to bring maximum benefits to its stakeholders.

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| **Policy recommendations:**  *EU and BSR level:*   * Initiate a complex project on data gathering that allows to combine different data to help to see “the bigger picture” on EE impact. The data should be available for free to interested stakeholders.   *National and regional level:*   * Make sure a support mechanism exists for the newcomers to learn faster and avoid common mistakes, e.g. create physical space (seminars, conferences, workshops) and virtual space (e.g. internet forum, website, blog, online meetings) for dialogue; * Initiate a cross-sectoral discussion about EE between organisations linked with EE, climate and green growth so they could act together instead on focusing on smaller individual one-issue projects. |

**Financial calculation tool**

**The tool** helps assessing the profitability of EE measures which can be challenging. This tool can be used to compare two different EE solutions and to gain better understanding of the profitability of investments. To compare the profitability of different solutions, the tool assesses the future development of energy and water prices by analysing two different annual price changes.

**Main challenges identified:**

1. Building owners lack resourses for investments in EE and they have many competing investment priorities. Easy understandable presentations are needed to convince decision makers.
2. Building managers need to convice persons responsible for finance about EE investments and that require better calculations and financial facts than often presented today.
3. Concerns about miscalculations are holding back investments, since building managers are not allowed to take high risks.
4. To attract private investment capital, reliable profitability calculations of EE measures are needed.
5. Simply pay-back method for calculations are used most often as evaluation method. The method does not take aspects of technical lifetime and profitability demand in consideration, which leads to fewer measures showing profitability and that the wrong investment choices are made.

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| **Policy recommendations:**  *National and regional level:*   * Training for targets groups in financial calculation methods * Support and demand that measures presented in the energy audits should be calculated with alternative financial calculation methods, such as Net Present Value or Internal Rate of Return methods. Use LCC calculations to also include technical lifetime. |

**Bundling**

Bundling tool which uses Total Concept Method (TCM) combines or bundles several smaller EE measures together into a bigger package. The more profitable measures support the less profitable ones which, if assessed individually, would not meet the minimum value determined by the building owner. This way, a bigger package can be carried out instead of single measures.

**Main challenges:**

1. Decision makers are being presented with single investments with different profitability. The most interesting measures are selected, leaving less profitable untapped.
2. EE measures in buildings includes many smaller investments, being to small to make them bankable.
3. Bundling, TCM and Total Tool are currently not yet so widely used by the target group.

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| **Policy recommendations:**  *National and regional level:*   * Promote and train target group in the Total Concept Method & TotalTool to avoid “cherry picking” among investment possibilities, to get more measures implemented and to attract private investors. * Present measures in energy audits also with the Total Concept Method. |

**Funding the energy efficient investments**

Funding is a crucial element for implementing EE activities. Different funding sources exist in all EFFECT4buildings project countries. Based on the results of interviews 70% of the respondents inform that they have received external funding to implement EE measures.

**Main challenges identified:**

1. Currently the municipalities, especially new ones to EE, do not have any kind of support system where they could receive a complex information about EE project management possibilities (including funding);
2. Development and writing new funding programmes and strategies is often delegated to politicians and scientists. Thus, it often lacks practical input coming from experts who have experiences in implementation of various EE projects;
3. In many regions there is no systematic preparation for future EE investments. When the new funding opportunities appear, municipalities and public building managers are not sufficiently prepared to apply for EE investments funding;
4. Companies, both SMEs and large, need to be more active and involved into EE measures implementation to reach the energy and climate targets.

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| **Policy recommendations:**  *EU and BSR level:*   * Reshape the process of writing new programmes to involve people with experiences in EE projects.   *National and regional level:*   * Create an advisory system for municipalities on EE, where all interested municipalities could consult their needs and ideas (including possible funding) for EE projects; * Prepare for the new funding opportunities - local governments need to undertake preparatory work for getting their applications approved for support from European Funds under the EU budget perspective for 2021-2027. Preparatory work should include a minimum of: * development of an energy audit * development of the necessary technical documentation * preparation of investments in terms of formal and legal requirements. * Increase requirements for the companies: * Enhance the environmental legislation and its implementation by increasing resources and the environmental inspection pace. * Increase the requirements to have an energy audit and implemented less costly measures to be able to receive aid. * Increase the requirements for measuring during energy audits. * Stress the issue of implementation of measures in large companies. * Increase structured energy auditing in SMEs and large companies: * Increase the resources to organizations that support energy management in small and medium enterprises and design programs that focuses on different business categories. * Design support systems also for smaller companies that can be regarded as big because they are members of bigger business groups. * Reduce the administrative work in funded energy audits and adjust the amount of grants according to type of business. * Implement a pilot with more cost-efficient energy audits based on a data base with generated general knowledge from proposed energy measures in previous energy audits. * Continue to give aid for environmental studies. * Give State aid for EE investments |

**Energy Performance Contracting (EPC)**

## The EPC model is a well-tested and successful tool that has been helping public building owners and local and regional authorities reach their energy and climate targets more quickly than with traditional implementation of energy saving measures. Several studies, e.g. the EPC market report by the Nordic Council of Ministers concludes that EPC is beneficial for the building owners, but there is still a large saving potential and possibilities for further development.

## Main challenges:

1. complexity of the EPC model/concept and procurement process;
2. lack of trust in the model and/or the ESCO (too good to be true?);
3. lack of active facilitators;
4. lack of good practice examples and documented results;
5. EE and EPC not set as clear goals in local/regional climate and energy plans;
6. uncertainties related to the start-up of EPC projects
7. mistakes made early creates problems later in the process

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| **Policy recommendations:**  *EU and BSR level:*   * distribute information on newly developed guidelines for new implementation model and tools to simplify start-up and procurement <https://www.effect4buildings.se/toolbox/energy-performance-contracting/>   *National and regional level:*  Energy and municipal authorities:   * dispel the myth of complexity and promote EPC as a viable option to save energy in a higher rate and speed; * get involved - involvement of authorities is often seen as a quality stamp; * disseminate information about new implementation model with partnership in phase 1 of EPC projects * disseminate good practise; * get assistance from EPC-facilitator/expert early in the process; * spread information on newly developed guidelines and tools to simplify start-up and procurement; * train and involve EPC experts (e.g. facilitators); * distribute list of skilled facilitators; * make more specific and concrete goals about EPC in SEAPs |

**Multi Service Contracting**

In a multi service contract (MSC), the building owner signs a contract with a constructor. The contract focuses on more parameters than just energy, including indoor climate, reducing the backlog of maintenance, and facility management. The contract also forces both parties to follow-up the performance of buildings after the buildings have been renovated. Extending the planning phase and involving a contractor from the very beginning of the project increases the chance that the renovation will meet the building owners expectations.

**Main challenges:**

1. Lack of demand from municipalities to take part in large collaborative projects between private and public companies, e.g. due to the complexity of tenders, resources, and competencies of the public company;
2. Lack of demand from municipalities to implement pool renovation and indoor climate projects, as municipalities want to support small local craftsmen / companies;
3. Lack of suppliers;
4. Few advisers/facilitators in the field who have knowledge of both collaborative projects and the complexity of working with EE, indoor climate and maintenance in the existing building stock in order to maintain performance;
5. Organization in municipalities is often divided between construction and operating personnel. Implementation of MSC and EPC requires competencies and experience from carrying out major renovation tasks in turnkey contracts and competencies within operation and energy - but is often organized only with either one or the other competence;
6. Lack of knowledge in collaboration models.

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| **Policy recommendations:**  *EU / BSR level:*   * Demonstration projects where there is an opportunity for support for advice initiated by the government * Task force across municipalities that can assist municipalities to get started * Recommendations / pressure from national and EU level regarding the use of EPC-like projects, e.g. in a voluntary cooperation agreement between municipal organization and the Government * Training of smaller companies to be involved in larger projects.   *National and regional level:*   * Demonstration projects where there is an opportunity for support for advice initiated by the government * Task force across municipalities that can assist municipalities to get started * Recommendations / pressure from national and EU level regarding the use of EPC-like projects, e.g. in a voluntary cooperation agreement between municipal organization and the Government * Training of smaller companies to be involved in larger projects. * Demonstration projects where there is an opportunity for financial support for consulting initiated by the government * Task force across municipalities, which can also assist suppliers with knowledge about the models * Demonstration projects where there is an opportunity for financial support for consulting initiated by the government * Task force across municipalities, which can assist suppliers with knowledge about the models. Development of tools for follow-up on performance which is simpler and with a focus on fewer parameters that ensure "90%" * Training of technical directors and managers in the real estate area regarding benefits of EPC and MSC including "organization". *This applies not only to this type of project but in general going forward to all kinds of projects which have complex issues, multiple purposes and are cross-sectoral organized* * Partnership training in the field of energy and climate across municipalities, consultants and suppliers (and the supply sector) to increase the level of knowledge about partnerships and collaborations. |

**Green lease contracting**

Green leasing contracting is a good way to motivate both building owner and tenant to adopt energy saving measures. By reaching this kind of agreement, energy savings will be shared in a way that both parties will gain on the savings. The contract also contributes to a dialog between partners and puts the focus on the building and its environmental footprint.

**Main challenges:**

1. Lack of involvement from tenants in EE, for example behaviour changes – meaning that we dont reach the full potential of energy savings.
2. Lack of knowledge and motivation for engagement in EE

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| **Policy recommendations:**  *EU and BSR level:*   * Support initiatives that promote green lease contracting as a model to involve tenants in EE   *National and regional level:*   * Implement Green lease contracts to building lease contracts, both when renting premises and for renting out premises. * Disseminate good practice and create incentives for others to implement Green lease contracts. * Use the model of Green lease contracts for schools to involve students in EE |

**Prosumerism**

Energy prosumer is an energy consumer that produces energy. Prosumer buildings are becoming increasingly common (e.g., nearly zero-energy buildings and plus-energy buildings). Buildings that can become a net-producer of energy create new technological, juridical and socioeconomic challenges for public authorities as producers, distributors and consumers in smart grid systems.

**Main challenges:**

1. «GAP» between EU planning periods in member states. Investment costs strongly depend on available support programs.
2. Different energy subsidies and taxes.
3. Fossil fuels price still competing with RES price
4. Lack of competent installers and PV panel providers
5. Green electricity systems often are not transparent. Consumers cannot verify the legitimacy of the purchased green energy. Lack of knowledge about global green electricity certification systems
6. Poor quality PV panels in EU market
7. Lack of people engagement installing panels

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| **Policy recommendations:**  *EU and national level:*   * Provide long-term financial mechanism for PV installation. Ensure continuity between support programs * Harmonize the market rules (energy, installers, PV panels, legislation). Remove barriers in legislation * Increase fossil fuel taxes to increase feasibility * Provide training programs (training standard, education requirements, etc) to support the energy transition to PV * Improve Green electricity certification systems * Promote information about Green electricity certification systems to public. * More closely monitor imported PV panels in EU (support only qualitative PV). Develop minimal requirements for PV panel production. Prepare market for PV panel acceleration * Mandate for solar to be installed on all new and renovated residential, commercial, and industrial buildings in the EU (for example, to achieve EE) |

**Technological solutions**

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| **Policy recommendation:**  *National level:*   * creation and update of a digital database of different technological solutions for EE |





