

SUSTAINABILITY PLAN

Deliverable D	.T2.1.4
---------------	---------

Final 02 2021







The eCentral project summary

Addressing poor energy performances of public buildings is at the core of EU's Energy Efficiency Directive and Energy Performance Building Directive but also one of growing financial issues in Central European countries. To address that eCentral project will support key stakeholders to realize benefits of newly implemented building standard - nearly zero energy building (nZEB). eCentral project will prove that nZEB approach, although innovative, is an optimal and costeffective solution for renovation and construction of public buildings. The project aims to capitalise on results of previous and ongoing EU initiatives. Austria has a proven track record with nZEB renovation projects and will be leading other implementing partners (CRO, SLO, HUN) by example. Transnational cooperation will be used to receive maximum international visibility of selected pilot actions. Main outputs of the project are:

- energy performance certificate (EPC) Tool for public authorities
- deployment and promotion of innovative financing schemes
- training programme and project development assistance for nZEB projects
- building renovation strategies for selected regions
- state of the art pilot nZEB public buildings in selected regions
- established cooperation with scientific institutions and other nZEB initiatives

Transnational Assessment and Support Group, formed from project experts and scientific institutions will act as a support team and provide quality checks of each output. EPC Tool will be developed and used by public sector decision makers and project developers beyond eCentral project lifetime. Trained energy efficiency teams within the regional government will serve as a backbone for conducting future nZEB projects. The European Academy of Bolzano (EURAC), one of the leading centres of expertise on energy efficiency in the Central European region, will focus on policy analysis and dissemination of eCentral project results.

About this document

This document is part of activity A.T2.1 of work package T2 and named D.T2.1.4 "Sustainability Plan" aiming to conclude and summarize all aspects of further use of the outputs of eCentral project. This is a plan for endorsement and continuation of key project outputs (D.T1.4.2, D.T2.2.1, D.T2.4.4) within and outside of partnership aiming to pursue and ensure cooperation with other similar EU/national initiatives (ManagEnergy, CoM) that could use eCentral's outputs. Energiaklub Climate Policy Institute is responsible for this deliverable.





TABLE OF CONTENTS

1.	Introduction	3
2.	Goals and starting points of the sustainability plan	4
3.	Detailed plan for key deliverables	5
4.	Conclusion	5





1. Introduction

The sustainability plan describes how eCentral project will be sustained in the long term. This document focusses on financial and technical sustainability. The sustainability plan aims to present donors that main project results have the potential to survive and thrive in the long term. The sustainability plan describes the different aspects in which the project has to be sustained in the long run to still function.

The nZEB (building with nearly zero energy demand) standard became mandatory for all public buildings by 2019 and some of the EU member states even define nZEB targets for refurbishments. EU raise its commitment to mitigate and handle climate change, and have the ambition on reducing greenhouse gas emissions to at least 55% below 1990 levels by 2030. This means that buildings, that are responsible for 40% of total energy consumption and 36% of greenhouse gas emissions in the EU, and as roughly 75% of the EU building stock are energy inefficient¹ shall be deeply renovated in a significant scale. The refurbishment cannot dispense with the engagement of the private sector, so public-private partnership, energy performance contracting and even crowdfunding should play an important role in this regard.

The experiences, findings and outputs of eCentral project can support to boost the building stock renovation wave, but this can only be achieved with well-funded planning. In this document, partners of eCentral project revise the exploitation possibilities of the project's key deliverables, namely:

- Living Energy Performance Certificate Tool
- Step by step decision support tool for nZEB renovation with innovative financing schemes
- nZEB training for stakeholders
- Step by step tool on how to turn public buildings into nZEB
- Joint strategy for wider implementation of innovative financing schemes in Central Europe
- Feasibility studies for external public authorities

¹ https://ec.europa.eu/info/news/focus-energy-efficiency-buildings-2020-feb-17_en





2. Goals and starting points of the sustainability plan

The primary goal of the sustainability plans is twofold: to further extend the use, implementation and development of tools and services developed in the frame of a project, and to propose specific actions which promote its further exploitation.

Towards this direction, its main objectives include:

- 1. To ensure the further use of eCentral tools and services after the project's end.
- 2. To propose cases for exploitation of the eCentral tools.

3. To suggest mechanisms as well as development and implementation actions for extending and improving eCentral tools and services.

In order to present sustainability of eCentral project's main outputs, aspects of sustainability will be presented deliverable by deliverable and also country by country as a summarizing table.

In general, organizational sustainability is strongly assured, as all implementing partners of eCentral project work on energy issues since at least 20 years and as this topic become more and more important at all levels, there is no risk to them to break off.

The 3,5 year-long eCentral project ensured that partners can assess each other's strengths and weaknesses and prepared the base for further cooperation.

Best way and first level of the exploitation is by the project partners, who can embed all gained experiences into their further activities covering energy efficiency in (public) buildings and innovative financing. One concrete example already can be mentioned:

One of the project partners (KSSENA) is involved in TARGET-CE² (Capitalizing and exploiting energy efficiency solutions throughout cooperation in Central European cities) project, which aims to become an energy efficiency (EE) flagship in Central European region, offering innovative solutions for public buildings on a unique web platform. TARGET-CE intends to capitalize past EE technical & non-technical solutions combining downstreaming and upstreaming activities for increasing EE and renewable energy usage in public buildings. These solutions come from 5 previously funded Interreg-CE projects (one of it is eCentral), 2 H2020 and 1 Interreg-Europe project. This possibility gives a great opportunity to exploit eCentral project's results.

² https://www.interreg-central.eu/Content.Node/TARGET-CE.html





3. Detailed plan for key deliverables

3.1.1. Living Energy Performance Certificates managing tool and database

Title	Living Energy Performance Certificates managing tool and database		
Deliverable nr.	D.T1.4.2		
Target groups	Public authorities		
	experts developing renovation roadmaps and SECAPs		
	maintainers and developers of public buildings		
Language	English, Croatian, Slovenian, Hungarian, German		
Short description	The Living Energy Performance Certificates managing tool and database (nZEB tool) was developed as a user-friendly tool, which is proper to find cost-optimal measures to reach nZEB criteria. It 's main goal to support the design of public building refurbishment projects in Slovenia, Croatia and Hungary. It enables a better insight into state of local/regional building stock and renovation potentials and to track energy consumption of the building stock over several years.		
Technical aspects of sustainability	 A complex interactive web-based tool Background-calculation methodology based on seasonal method of ISO 13790 Input data for the tool should be taken from energy performance certificates (EPC) and accompanying reports (help users to adequately read/interpret the information on EPCs). For unknown parameters: set of predefined values is available. Currently (02/2021) 72 users, 179 buildings from >65 municipalities with 274.000 m² net heated area 17 200 MWh calculated potential energy savings per year National administrators (REGEA, KSSENA, Energiaklub) can update background information (energy prices, primary energy factors, 		
Financial aspects of sustainability	 etc.) REGEA is the owner of the site and will ensure the sustainability of the tool following the program rules and subsidy contract. 		
Barriers of further use	 Continuous update of background information (energy prices, etc.) necessary Not available in all national languages of Central Europe The current version of the Tool does not follow the changes in different buildings (eg. due to step-by-step refurbishments), although a "biography" of this kind would improve the lessons to be learned for each building. 		





	EPC Tool is an excellent starting point for making feasibility studies since nZEB can be reached with different combinations of EE/RES combinations for reaching nZEB
Actions for	The tool will be capitalized within <u>TARGET project</u>
extending and improving	Possibilities for improvement: As EPC Tool is a web-based tool, it would be worthwhile to allow offline access as well, as if people start using it, they do not want to face the possibility that they will lose the uploaded data after the Web support for the Tool expires.
Available at	https://nzeb.thorium.software/





3.1.2. Step by step decision support tool for nZEB renovation with innovative financing schemes

Title	Step by step decision support tool for nZEB renovation with innovative financing schemes	
Deliverable nr.	D.T1.5.3	
Target group	Public authorities	
Language	English, Hungarian	
Short description	The aim is to facilitate the decision on the type of financing schemes which can be implemented for a renovation project. It provides information about nZEB renovation (nearly zero energy building) with innovative financing schemes Public Private Partnership (PPP), Energy Performance Contracting (EPC) and Crowdfunding (CF). This guide uses results from policy analysis, from the eCentral pilot actions in Croatia, Hungary and Slovenia and from literature research.	
Technical aspects of sustainability	The tool exists as online-guide (PDF), which enables access to a broad audience.	
Financial aspects of sustainability	Websites of the partners and the project, as well as nZEB Living Lab will assure the availability of these guide for a long term without major costs	
Barriers of further use	Limited availability in national languages	
Actions for extending and improving	Translation to national languages, preparation of a print version of this guide, presentation at future events	
Available at	https://www.interreg-central.eu/Content.Node/DT153.pdf Hungarian version is available at: https://energiaklub.hu/files/project/ DT1.5.3_D%C3%B6nt%C3%A9st%C3%A1mogat%C3%B3%20eszk%C3%B6z.pdf	





3.1.3. Step by step tool on how to turn public buildings into nZEB

Title	Step by step tool on how to turn public buildings into nZEB	
Deliverable nr.	D.T2.3.2	
Target group	decision makers and staff of local public authorities	
Language	English, Croatian, Slovenian, Hungarian, Italian, German.	
	Short illustrative step by step guide of basics of nZEB building standard and how to achieve it in public buildings.	
Short description	English version collects the EU directives for public tenders and nZEB target. The Step by step guide for each PPs country presents the national/regional regulation on public tenders and nZEB target.	
Technical aspects of sustainability	The tool exists in on-line format, which enable the broad use of it, although its main feature, the figure on the nZEB refurbishment process is a bit hard to review on a monitor. The Hungarian version is available in printed form as well (250 copies)	
Financial aspects of sustainability	Websites of the partners and the project, as well as nZEB Living Lab will assure the availability of these guides for a long term.	
Barriers of further use	The parts about nZEB regulations can easily fall into disuse as regulations are changing.	
Actions for extending and improvingTexts could be amended in case if nZEB regulations are char Partners can disseminate and use it		
Available at	EN: https://www.interreg-central.eu/Content.Node/DT232-05112020.pdf AT: https://www.interreg-central.eu/Content.Node/DT232-16112020-AT.pdf HR: https://www.interreg-central.eu/Content.Node/DT232-16112020-HR.pdf HU: https://www.interreg-central.eu/Content.Node/DT232-16112020-HU.pdf IT: https://www.interreg-central.eu/Content.Node/DT232-05112020-IT.pdf SI: https://www.interreg-central.eu/Content.Node/DT232-16112020-SI.pdf	





3.1.4. nZEB training curriculum and trainings

Title	nZEB trainings for stakeholders - based on the nZEB curriculum		
Deliverable nr.	D.T2.2.1 and D.T2.2.3		
Target group	decision makers and staff of local public authorities		
	staff of sectorial agencies		
Language	Croatian, Hungarian, Slovenian		
	Based on nZEB curriculum knowledge partners in target countries (Slovenia, Croatia and Hungary) conducted trainings during workshops and individual consultation sessions for public authorities about nZEB technical, financial and legal aspects and use of the developed EPC Tool.		
	Modules of the trainings:		
	EE policies and nZEB regulation		
Short description	nZEB technologies		
	Innovative financing schemes for nZEB refurbishments		
	How to prepare nZEB tenders		
	Trainings were planned as a 1 daylong event, with a knowledge-sharing part in the morning and a more interactive part about nZEB tool in the afternoon.		
Technical aspects of sustainability	Some of the trainings were implemented in face-to-face and some of them in on-line format. Both worked well, although both needed a significant human resource from the implementing partners. Developed training material will be useful for a lot of future activities and events, either at similar training events or just module by module during more thematized events, especially technical parts explaining nZEB and nZEB calculation methodologies. Although the legislation is planned to change in the future, some of the parts of innovative financing schemes could also be used, but will have to be adjusted, as well as procurement procedures etc. nZEB technologies will also develop through time, but nevertheless this eCentral training material can serve as a great base for learning nZEB if it is adjusted accordingly to latest developments.		
Financial aspects of sustainability	To ensure HR for further capacity building activities, additional resource is indispensable.		
Barriers of further use The training materials shall be revised time-to-time, before some parts can be obsoleted. It is unknown, in what extent the - and this part of the training session - could be used if the regulation will be in force.			
Actions for extending and improving	Partners will try to get funds to keep on this capacity building activity, as there is still a need for it in all 3 target countries.		





	Partners will revise training materials and make them up-dated yearly.		
	Partners will try to cooperate with other stakeholders to implement similar capacity building activities.		
	Partners will include parts of the training materials in other capacity building activities if possible.		
Available at	Some presentations and recorded trainings are available at the nZEB Living Lab		
	https://nzeblivinglab.com/		





3.1.5. Joint strategy for wider implementation of innovative financing schemes in Central Europe

Title	Joint strategy for wider implementation of innovative financing schemes in Central Europe				
Deliverable nr.	D.T2.4.4.				
Target group	policy makers at national levels, interested civil and financial organisations				
Language	English				
Short description	The strategy is the culmination of theoretical and practical assessments performed within the eCentral project with all key financial market stakeholders. The document provides a short status of policy frameworks in Central European countries for use of innovative financing schemes for nZEB projects (public private partnership, energy performance contracting and crowdfunding) and proposes clear recommendations for removal of barriers that hinder a wider uptake of these schemes.				
Technical aspects of sustainability	Dissemination of the document would be crucial, but this has to be done after the project's official end.				
Financial aspects of sustainability	E-dissemination at own channels doesn't need additional funds.				
	Massive financial public support needed in order to implement funding programmes, grants, national competence centres, etc.				
Barriers of further use	As it is finalized by the end of eCentral project, capacities of the partners for dissemination can be limited.				
Actions for extending and improving	Key conclusions from this document were presented, discussed and promoted during national roundtable events and the final project conference in February 2021. In addition, the strategy will be updated with this input from the live discussion.				
Available at	https://www.interreg-central.eu/Content.Node/				





3.1.6. Feasibility studies for external public authorities

Title	Feasibility studies for external public authorities		
Deliverable nr.	D.T2.3.1		
Target group	Public authorities		
Language	German, Croatian, Slovenian, Hungarian		
Short description	38 feasibility studies for public authorities inside and outside of the consortium have been conducted by project partners in national languages. The feasibility studies show, how public buildings can reach cost-optimal national nZEB standard and created a pipeline of nZEB projects.		
Technical aspects of	The steps for conducting a feasibility study are 1) data collection, 2) building inspection, 3) discussion of requirements with public authority, 4) calculation of current EPC with collected data, 5) choosing the right combination of measures to achieve nZEB standard and conduction of economic calculation as iterative process and finally, 6) preparation of a report and presentation of results to public authorities		
sustainability	The created pipeline of nZEB projects within eCentral are expected to achieve 9.843 MWh of primary energy savings and to avoid 1.447 tons of CO_2 per year after their implementation.		
	The experiences gained by partners from the development process can help to promote the importance of such plans among public authorities.		
Financial aspects of	In total it is assumed that 20,5 million EUR are leveraged with the proposed renovation measures.		
sustainability	Own resources of public authorities and capacities to involve private funds are limited, which encumber the realization of the refurbishments		
	Renovation of existing buildings in accordance with nZEB has proved to be a complex task and more expensive compared to standard renovation		
Barriers of further use	Long term economic benefits (CO ₂ reduction, increase of comfort, extension of building's lifespan) must be monetized with different calculation methodology (economic vs financial analyses)		
Actions for extending and improving	The implemented process of conducting feasibility studies can be transferred to several other municipalities, regions and countries of Central Europe.		
	A follow-up (e.g., in 2022) would be interesting to monitor the status of the refurbishments and occurrent problems with the implementation.		
Availability	Only internal documents for public authorities, available on request		





Overall Table

The following table provides a quick overview about all deliverables and possibilities of further use country by country.

Title	Italy	Austria	Croatia	Hungary	Slovenia
Living Energy Performance Certificates managing tool and database	EPC tool is a user-friendly tool that can be used to assess the energy renovation of an existing building with the nZEB target objective. Unfortunately, at Italian level, it is not a tool admitted and validated by the CTI (Italian Thermomechanical Committee) to calculate the EPC. On the other side, it is a tool that can be used to plan and to have a first overview on energy renovation strategy, also because it permits to compare different solution sets, in terms of energy performance and investment costs.	The database of the EPC tool is perceived as very useful for public authorities to have an overview on their building stock. However, the Austrian legislation on renovations with nZEB requirements changed in the beginning of 2021.	EPC Tool has been intensively used during development of feasibility studies for renovation of public buildings. The methodology of EPC Tool is still in line with Croatian building legislation and Tool could be used by other building and energy specialists. However, energy performance certificates are not always available and are sometimes outdates so its usability and precision largely depend on the quality of certificates.	EPCs of public buildings are usually missing (however they are obligatory) and also data monitoring at LPAs are very weak. This makes difficult to properly use nZEB tool in Hungary. As nZEB regulations are under revision and will change in 2021, the tool will not be able to recommend proper measures to reach nZEB. Although, a rough estimation on needed investments as a base for further planning will still be possible. Changes of prices (materials for refurbishment and energy) also makes difficult to get up-date information for making decisions based on this tool.	EPC tool is recognized as a useful tool for energy managers across Slovenia. They can quickly assess the investments and measures. Due to changing legislation, prices and other specifics for detailed building analyses, other tools are recommended.
Step by step decision support tool for nZEB renovation with innovative financing schemes	Currently the guide it is English version, for this, its distribution is quite limited between public authorities.	It is currently under evaluation, if the guide will be translated to German after the eCentral project, because it summarizes a lot of useful information and the basic concept was well appreciated from Austrian public authorities.	The publication is planned to be translated to Croatian due to its simplified but informative nature. The Tool will be extensively used during REGEA's events which have energy renovation of public buildings as key topic.	The publication of this deliverable in Hungarian and some communication activity to promote it will make it useful in Hungary.	This publication has been disseminated and widely used by public authorities. The effect of this tool will be measured through the TARGET-CE project.
Step by step tool on how to turn public buildings into nZEB	The guide was approved by the legal office of province of Bolzano. It results a useful and easy tool for public authorities.	The guide was already presented to and distributed among municipalities and will possibly be printed in the upcoming weeks.	The step-by-step tool was translated to Croatian and will be distributed during REGEA's events which have energy renovation of public buildings as key topic.	As this tool exists in Hungarian, and in addition it is available in printed version as well, it can be widely used. Changes in nZEB regulation will makes some parts outdated but the sense of the tool will remain actual.	This step-by-step tool has been translated into Slovenian and disseminated through different events. KSSENA will continue with dissemination through other events and projects.





nZEB trainings for stakeholders - based on the nZEB curriculum	As EURAC, we have only organized for the nZEB trainings a MODULE on nZEB target implementation in public tender. The Module was presented to the PPs and later they presented it in the local trainings translating the EU Directive in national/regional/local regulation.	Although there haven't been any eCentral trainings in Austria because it was not foreseen, the eCentral training materials and experiences will serve as important source of information for upcoming training events in Austria.	A large number of trainings have been performed in Croatia, both in person and online. Curriculum materials and presentations were constantly updated and aside from REGEA other energy agencies have used these materials for their own trainings.	The training provided by eCentral project in Hungary were not enough to fill in the knowledge gaps. Further capacity building activities are needed, where curriculum and experiences of eCentral shall be used.	The training workshops have been usually connected with other events, or the main topic was to use nZEB EPC tool. The curriculum might be used for further seminars with some changes and adaptations.
Joint strategy for wider implementation of innovative financing schemes in Central Europe	The joint strategy aims to identify the state of the art and level of knowledge and experiences of different stakeholders on different financing schemes (PPP, EPC, CF). The results obtained are necessary recommendations to improve the transition to a deep use of such innovative financing schemes.	The results and recommendations of the joint strategy serve as important base for discussions with regional administration and government in order to propose measures to achieve the uptake of meaningful innovative financing schemes in Austria.	The strategy has already been used as a baseline for discussions in other ongoing EU projects of similar topic run by REGEA (Smart Financing Roundtables for EE projects - SMAFIN and E-FIX). The strategy represents main conclusions and direction of development which was previously discussed and amended by relevant Croatian stakeholders.	The results and recommendations of the joint strategy serve as important base for discussions with experts, financial and governmental bodies in order to propose measures to achieve the uptake of meaningful innovative financing schemes in Hungary. The elaboration process raised the attention to the fact that Hungary is dropped behind the forerunners and additional efforts are needed.	The results and recommendations of the joint strategy serve as important base for discussions with regional administration and government in order to propose measures to achieve the uptake of meaningful innovative financing schemes in Slovenia.
Feasibility studies for external public authorities	As EURAC, we have only an external overview with any feasibility studies developed. The renovation strategies developed by PPs and ASG support, has achieved positive results, the quality of the feasibility studies were very high.	Austrian partners created 7 feasibility studies and their implementation will be tracked within the next years. The implemented steps of the process will serve as role models for upcoming development of feasibility studies.	REGEA created 5 feasibility studies for public authorities which were not part of the partnership. These documents serve as a seabed for new investments into refurbishment of public buildings. The main issue was the lower cost-effectiveness of energy renovation of buildings in accordance with nZEB standards - public authorities are interested in deep renovation only when larger amounts of grant co-financing are available to them.	Feasibility studies - however are very important, in Hungary usually only presents one scenario instead to track all possibly ways and their comparison. The example of eCentral FSs showed a best practice and revealed some mayor problems to be resolved at local levels.	Feasibility studies are key decision- making documents. Their implementation will be considered in the coming years, but the outlook is promising.





4. Conclusion

The overall table shows that in all countries more or less all of the key deliverables provided valuable experiences and results that will be further used and exploited by partners. However, this means that further efforts are needed, knowledge partners of eCentral project have a kind of similar vision: to support sustainable energy use and production, so all experiences and outputs of eCentral project can be used and communicated, disseminated and exploited in the future.

Such complex mission like eCentral always needs financial support and additional efforts besides the daily work. It is expected and recommended for eCentral partners to be involved and/or have common projects in the future where similar experiences and the routine to cooperate with each other will ease the management.

Knowledge partners agree to have yearly follow-up calls where they can share new project ideas and country-specific proceedings on the fields examined by eCentral.