Interreg CENTRAL EUROPE

Co-funded by the European Union

ZEB4ZEN

ZEB4ZEN

Zero energy buildings for zero Energy neighbourhoods

Version 2

10 2026



D.4.1.3 – REPORT ON ENERGY ACTION PLANS COMMUNICATION STRATEGY

A. Introduction

This report outlines the communication strategy for the **Energy Action Plans (EAPs)** developed in **Deliverable D4.1.2**. Effective communication of these plans is crucial to ensure citizen engagement, transparency, and the successful implementation of sustainable energy transitions in pilot neighborhoods.

The main **goal** of this deliverable has two intentions: first, to **present and discuss the EAPs with citizens** during local events in order to foster awareness and participation. Second, to **develop a joint transnational communication strategy** based on insights gathered from these engagements. This strategy is designed by technical partners in collaboration with relevant stakeholders.

The **target groups** for this initiative include **citizens in pilot neighborhoods and cities**, who will directly benefit from the energy transition, as well as **technical partners and stakeholders**, who play a key role in the development of the strategy.

1. Local Events

1.1. Preperation

The primary goals of the communication at local events were to present the energy action plans to diverse audiences, gather feedback, and foster understanding and acceptance of the proposed solutions. By combining digitalization with virtual reality, the aim was to simplify complex municipal challenges, accelerate local decision-making, and enhance social acceptance of measures. While the target groups were local public authorities, citizens, stakeholders, research organizations, and SMEs, the formats used were diverse and interactive. They included PowerPoint presentations, live demonstrations of the 3D/VR tool, and in-person feedback sessions which was the main way of citizen engagement. Feedback was actively collected during the live presentations.

1.2. Execution

The agendas for the events and presentations focused on the following areas:

Introducing the Energy Action Plans to diverse audiences

Introducing the VR tool and digital platform to diverse audiences

Demonstrating practical applications, such as using VR to address local challenges

Gathering feedback on technical, ethical, and regulatory aspects

1.3. Evaluation

The events and presentations aimed to communicate energy action plans by using the VR tool and digital platform and engaging diverse audiences. In Quedlinburg for example, the City Council Session on 8 October 2025 attracted approximately 400 participants, while the open public event in Palmanova on 27 May 2026 had 22 attendees. Feedback highlighted how the VR tool, as part of the presentation, made complex energy action plans and municipal solutions more accessible, which supports social acceptance and can accelerate local decision-making processes. The digital approach was particularly praised in Palmanova for its innovative way of involving citizens in understanding and contributing to energy strategies.

The meeting with the German UNESCO Cities network raised concerns about the technical feasibility of scanning neighborhoods for energy planning, the permitting process, drone restrictions, and server performance.

What worked well was the VR tool’s ability to visually communicate complex energy action plans, the innovative engagement of citizens in understanding energy strategies, and the clarity that led to faster decision-making. However, challenges such as low participation in Palmanova, technical and regulatory barriers, privacy concerns, and complex permitting processes were noted as areas that didn’t work as effectively.

1.4. Overview over specific events

1.4.1. Karlovac, Croatia (PP1 Energy Institute Hrvoje Požar & PP2 City of Karlovac)

The first reported activity was a working meeting on the Green City Action Plan for Karlovac, which was held on the 17th of October 2023 in Karlovac. The audience comprised project partners, the local public

authority and technical experts which means that the event addressed an institutional and technical audience rather than citizens.

On the 18 th of January 2024, a technical meeting took place in Karlovac concerning the preparation of the feasibility study for the integration of a photovoltaic system, battery storage and a bidirectional EV charging station. The audience again consisted of project partners, the local public authority and technical experts.

From the 7th to the 12th of July 2024, a technical site visit was carried out in the Zvijezda pilot neighbourhood, consisting of walk-through energy audits. The audience included project partners, technical experts and the local public authority.

As part of the ZEB4ZEN project, Ružica Jurjević from the Energy Institute Hrvoje Požar participated in the IEEE International Humanitarian Technology Conference (IHTC 2024), held in Bari, Italy, from 27 to 30 November 2024. During the conference, she presented the scientific paper "Enhancing Urban Sustainability Through Energy Efficiency: A Case Study of a District in Zagreb." The paper explores a methodology for transforming urban districts into nearly zero-energy neighbourhoods (nZEN), using Veslačko Naselje in Zagreb as a case study. It examines energy efficiency measures, decarbonisation strategies and the integration of smart technologies to support sustainable urban development. The research contributes to the objectives of ZEB4ZEN by providing methodological insights into energy planning and the transition towards climate-neutral and energy-efficient neighbourhoods.

On the 17th October of 2025, ZEB4ZEN was presented to the wider public during the EU Projects Open Doors Day in Karlovac, which gathered approximately 150 participants. The audience consisted of the general public, citizens and local stakeholders. The event provided a public presentation of ZEB4ZEN alongside other EU-funded initiatives, introducing citizens and local stakeholders to the project, its objectives and the activities implemented in Karlovac.

A working meeting with representatives of the local conservation office was held on the 15th of December 2025 in Karlovac with 7 participants. The audience consisted of local stakeholders directly involved in the protection and management of Karlovac's historic built environment and introduced the ZEB4ZEN project and the VR tool to them.

The central citizen-facing activity was the public presentation of the VR tool at a conference held on 10 June 2026 at Karlovac City Hall and online, reaching 70 participants (59 in person, 11 joining online), (see Figure 1). The audience was diverse, including representatives of local authorities, SMEs, teachers from the Technical School Karlovac, citizens and other local stakeholders. The VR tool was presented in the context of the ZEB4ZEN project and the activities implemented in the Karlovac pilot area, demonstrating how digital solutions can support the visualisation of energy planning and future interventions in historic neighbourhoods. Feedback collected during the event was positive, with participants recognising the VR tool as an innovative and accessible way to visualise energy planning.

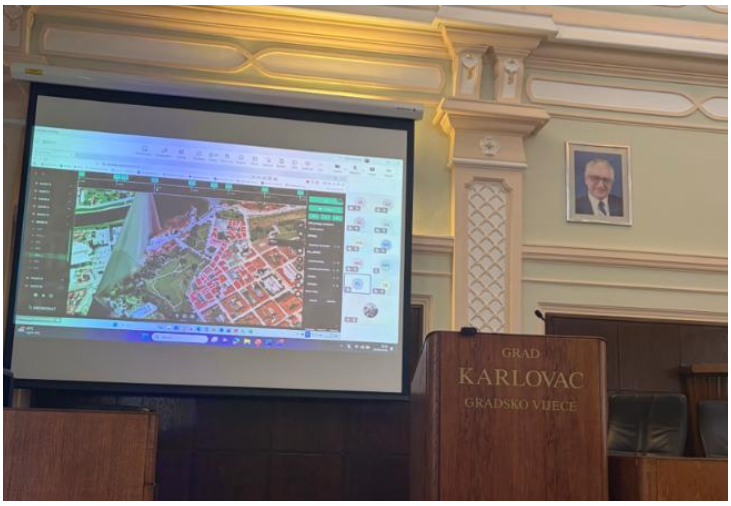


Figure 1 ZEB4ZEN conference in Karlovac

Finally, on 28 October 2026, PP1 presented the ZEB4ZEN VR tool at the final national workshop of the ENEFIRST Plus project, titled "EE1st in Practice: From Principles to Better Energy Decisions", held at the Energy Institute Hrvoje Požar in Zagreb. The workshop brought together 19 participants, including representatives of relevant institutions and stakeholders from the energy sector.

During the workshop, PP1 presented the ZEB4ZEN project results, focusing on the Karlovac–Zvijezda pilot area and the application of the VR tool in energy planning and the sustainable renovation of historic urban environments. The presentation highlighted how the tool enables the visualisation of different energy renovation scenarios and supports the assessment of potential energy savings, CO_2 emission reductions, and operational and capital expenditures (OPEX and CAPEX). The presentation also demonstrated synergies between the ZEB4ZEN and ENEFIRST Plus projects, particularly in supporting informed energy planning and investment decisions in line with the Energy Efficiency First (EE1st) principle (see Figure 2).

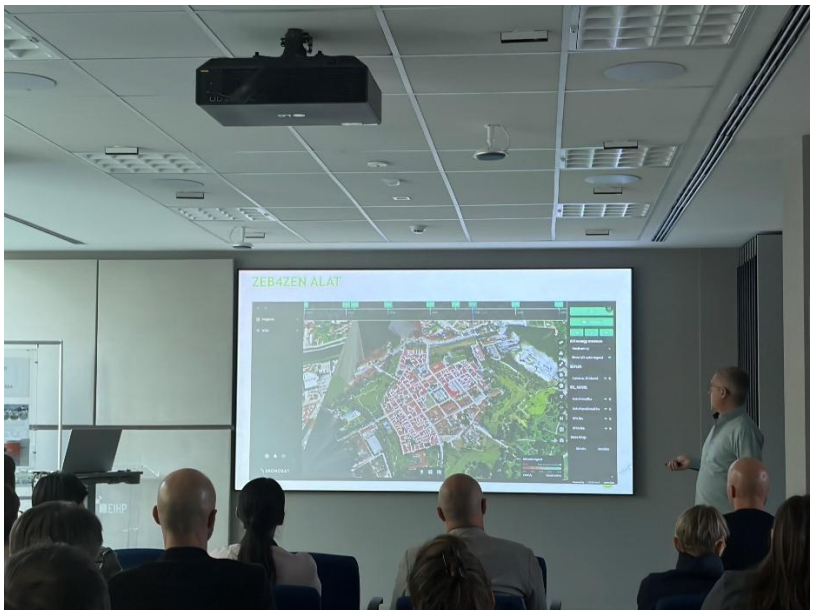


Figure 2 ZEB4ZEN VR tool presentation at the final national workshop of the ENEFIRST Plus project

Beyond the local level, PP1 and PP2 presented the ZEB4ZEN project and its VR tool at six transnational events.

The first was the Interreg CENTRAL EUROPE Conference "Cooperation is central for a more Cohesive Europe" – Thematic Roundtable Meetings, held on the 22nd of March 2023 in Vienna with more than 100 participants. Additionally, on the 27th of September 2023, PP1 and PP2 attended the Interreg CENTRAL EUROPE communications and synergies seminar in Vienna, again with more than 100 participants. The audience comprised local, regional and national public authorities, sectoral agencies, higher education and research organisations, business support organisations, international organisations and interest groups including NGOs.

From the 5th to 6th of October 2023, participation followed at the tenth session of the UNECE Group of Experts on Energy Efficiency in Geneva, with more than 100 participants. Partner contributions were not specified. The audience consisted of national public authorities, regional and local public authorities, sectoral agencies, infrastructure and public service providers, higher education and research organisations, international organisations, SMEs and business support organisations.

On 20th of September 2024, the project was presented at the UNECE Sustainable Energy Week 2024 in Geneva, with more than 100 participants. Partner contributions were not specified. The audience included national, regional and local public authorities, sectoral agencies, infrastructure and public service providers, higher education and research organisations, international organisations, SMEs, business support organisations and interest groups including NGOs.

On 27th of May 2025, PP1 and PP2 attended the Interreg Central Europe Conference "From Results to Impact" in Vienna, with more than 50 participants. The audience comprised local and regional public authorities, national public authorities, sectoral agencies, higher education and research organisations, business support organisations, international organisations, SMEs and interest groups including NGOs.

The most recent transnational event was the UNECE Sustainable Energy Week 2026 in Geneva on starting on the 29th of September 2026, with more than 100 participants. The audience consisted of national, regional and local public authorities, sectoral agencies, infrastructure and public service providers, higher education and research organisations, international organisations, SMEs, business support organisations and interest groups including NGOs.

1.4.2. Palmanova, Italy (PP3 Energy Management Agency of Friuli Venezia Giulia & PP4 City of Palmanova)

In Palmanova, the VR tool was presented at a public event open to the general public on the 27th of May 2026 at Palmanova City Hall, reaching an audience of 22 participants. The audience consisted of the local public authority, namely the municipal administrators, and the citizens of Palmanova. The VR tool was presented directly to the people of Palmanova and to the municipal administrators. The digital approach was appreciated as an innovative way to involve the population in the participation to the definition of actions and strategies at local level. A participants list was signed as well (see Figure 3).





Figure 3 Photo of the event and participants list

1.4.3. Quedlinburg, Germany (PP5 Hochschule Magdeburg-Stendal & A07 Welterbestadt Quedlinburg)

The first reported activity took place on the 11th of April 2024, when a working group of German UNESCO Cities met in Quedlinburg with 20 participants (see Figure 4). PP5 presented the digital platform to the meeting. The audience consisted of the local public authority, research organisations and SMEs. The feedback collected mainly addressed the technical difficulty of scanning entire neighbourhoods, the permitting process required, the restrictions on using drones to scan buildings, and the technical performance of the server hosting the platform.



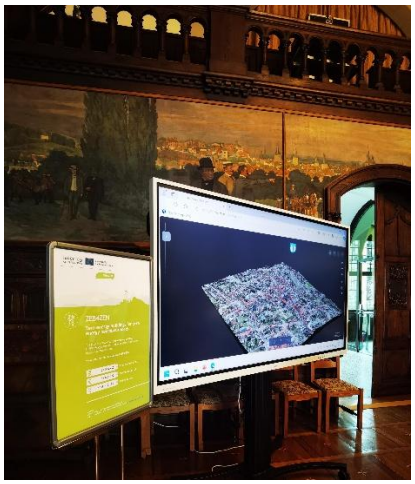


Figure 4 German UNESCO Cities meeting in Quedlinburg

From the 27th to 30th of November 2024, PP5 presented at the IEEE International Humanitarian Technology Conference (IHTC 2024) in Bari, Italy, which reached an audience of 600 participants (see Figure 5). PP5 presented the paper "Balancing Preservation and Progress: A Digital Platform for Decarbonizing Heritage

City Centers". The audience comprised research organisations and SMEs and most of the feedback concerned the use of infrared cameras to measure the heat loss performance of buildings and the related privacy implications for building occupants.

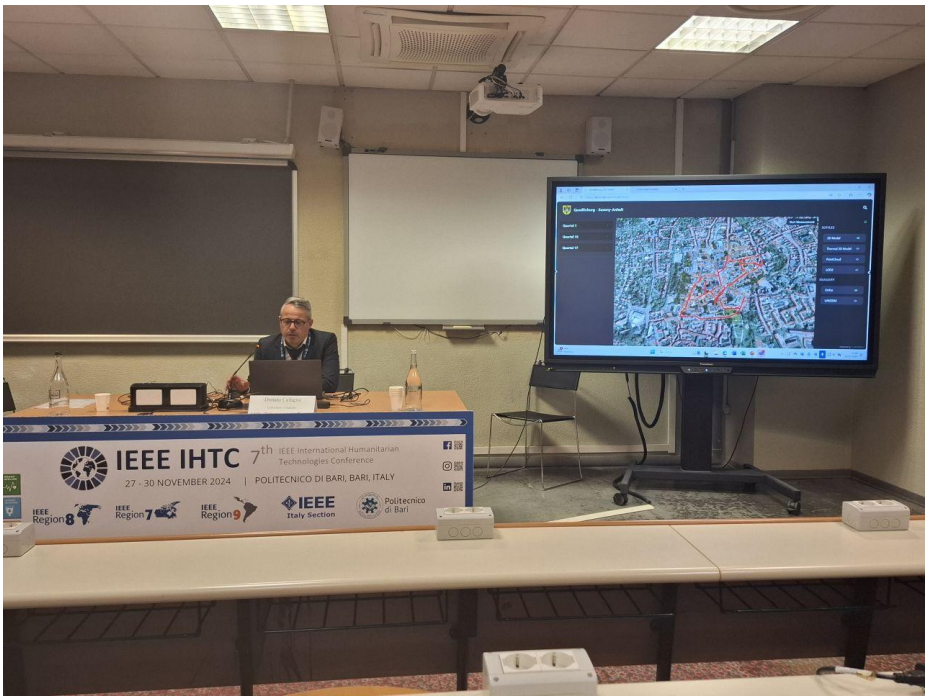


Figure 5 Presentation of the VR and the methodology developed to plan energy actions for historical cities during the IEEE IHTC conference held in Bari (Italy)

On the 24th of April 2025, PP5 took part in an Energy Plant Workshop in Eisleben Lutherstadt with 50 participants. The audience consisted of the local public authority, research organisations and SMEs. The feedback focused on extending the use of the digital tool and platform to support municipal heat planning (kommunale Wärmeplanung), an action plan currently mandatory for many German municipalities under national legislation.

The citizen-facing activity was the presentation of the VR tool at a City Council Session in Quedlinburg on the 8th of October 2025 (see Figure 6), reaching an audience of approximately 400 participants. The audience included local administrators and citizens. As a citizen engagement method, the first results of the EAP and the VR tool were presented to the City Council, combining the digitalisation of municipal systems with virtual reality to make the solutions proposed for specific local challenges easier to understand. The feedback collected during the event was positive: participants indicated that this improved understanding contributed to greater social acceptance of the proposed measures, which in turn was regarded as a factor capable of accelerating local decision-making processes.



Figure 6 Presentation of the first results of the EAP and VR tool during the city council in Quedlinburg

A few days later, also the German newspaper "Mitteldeutsche Zeitung" reported on the project ZEB4ZEN, highlighting its innovative approach to achieving climate neutrality in historic urban areas. The article also emphasized the interest expressed by local citizens, who welcomed the initiative and expressed their hope that the project would lead to concrete and practical solutions for improving sustainability in Quedlinburg (**Fehler! Verweisquelle konnte nicht gefunden werden.**).

Interner Pressespiegel Quedlinburg, Gernrode und Bad Suderode
Mitteldeutsche Zeitung vom 06.11.2025

erstellt von Jette Münch Stabsstelle 0.2

Klimaneutral im Welterbe

Quedlinburg ist Teil eines internationalen Projektes, das Wege zur klimaneutralen Energieversorgung im historischen Stadtkern aufzeigen will. Was dabei in der Welterbestadt erfolgt.

VON PETRA KORN

QUEDLINBURG/MZ. Klimaneutrale Energiegewinnung im Welterbe – wie kann das funktionieren? Dazu läuft aktuell ein internationales Forschungsprojekt, an dem vier Unesco-Weltkulturerbestädte beteiligt sind – darunter auch Quedlinburg.

„ZEB4ZEN" – „Zero Energy Buildings for Zero Energy Communities", auf Deutsch „Nullenergie-Häuser erschaffen Nullenergie-Wohnquartiere" – ist der Titel dieser Gemeinschaftsinitiative des Europäischen Fonds für regionale Entwicklung (Interreg Europe), bei dem in den vier Städten – Karlovac in Kroatien, Palmanova in Italien, Zamosc in Polen und Quedlinburg – unterschiedliche Wege verfolgt werden. Der Fokus liege darauf, „Unesco-geschützte Städte zu unterstützen, Maßnahmen zu planen, um die Städte zu dekarbonisieren", erklärt Pio Alessandro Lombardi, Mitarbeiter an der Hochschule Magdeburg-Stendal, die zu den Projektbeteiligten gehört, wie am Fraunhofer-Institut.

Untersucht werden also verschiedene Wege, CO2-Emissionen zu reduzieren. Während in den drei anderen Städten, die sich auch finanziell an dem Projekt beteiligen, bauliche Maßnahmen wie etwa die Errichtung von Photovoltaikanlagen umgesetzt werden, geht es in Quedlinburg als assoziiertem Partner um die Entwicklung eines Tools, mit dem Maßnahmen wie Wärmepumpen und Photovoltaik virtuell errichtet, visualisiert und deren Wirkung ermittelt werden können.

Dafür wurden drei Beispielquartiere rund um den Markt ausgewählt. In diesen gebe es Gebäude mit gewerblicher Nutzung im Erdgeschoss und Wohnnutzung in Obergeschossen, kleinere Fachwerkhäuser und größere mit stärkerer gewerblicher Nutzung, erläutert Sophia Dombrowski, Stadtplanerin bei der Stadtverwaltung Quedlinburg.



Seinerzeit im Rahmen eines EU-Förderprogramms in der damaligen Studienstadt Quedlinburg entstanden: die Photovoltaik-Anlage auf dem Dach des Verwaltungsgebäudes Halberstädter Straße 45. FOTO: KORN

Verbrauchsdaten betrachtet

Für diese drei Quartiere wurden – mit Unterstützung der Stadtwerke – die straßen- und quartierübergreifenden Verbräuche an Strom und Gas betrachtet und die Frage gestellt, was getan werden könnte, die benötigte Energie nachhaltig zu gewinnen, berichtet Pio Alessandro Lombardi.

Gas werde für die Heizung gebraucht; das Heizen werde nachhaltiger, wenn Wärmepumpen genutzt würden. Untersucht worden sei dafür eine Nutzung größerer Wärmepumpen, die in den Höfen installiert werden und zwei, drei Gebäude versorgen könnten. Anhand eines Beispielgebäudes und der Wetterdaten von 2006 seien dann der Wärmebedarf und der für den Betrieb der Wärmepumpen in den drei Quartieren zusätzlich erforderliche Strombedarf ermittelt worden.

Geprüft worden sei in einem nächsten Schritt, so Pio Alessandro Lombardi weiter, wie viel der in den Quartieren insgesamt benötigten Energie vor Ort erzeugt werden könne. Dafür seien alle Dachflächen gedanklich mit integrierten Photovoltaikzellen belegt worden. Übers Jahr gerechnet, so das Ergebnis der Modellierung, könnte mit diesen der in den Quartieren benötigte Strom erzeugt werden.

Die für die Erarbeitung des Tools ausgewählten Beispielquartiere seien mit Quartieren in anderen historischen Städten Europas vergleichbar, sagt Sophia Dombrowski.

Projekt läuft bis 2026

Denn Ziel des Forschungsprojektes – es läuft noch bis 2026 – sei es, Maßnahmen aufzuzeigen, die funktionierten, einen Mehrwert brächten und denkmalkonform seien. Für Quedlinburg ermögliche das Projekt forschungsbasiert zu bewerten, welche Maßnahmen unter dem Kontext des Welterbestatus welche Ergebnisse brächten, und zu ermitteln, „was ist unsere weitere Marschrichtung, wo wollen wir den Schwerpunkt hinlegen", so die Stadtplanerin.

Projekte in den anderen Teilnehmerstädten

In dem internationalen Forschungsprojekt „ZEB4ZEN" werden in den vier teilnehmenden Städten verschiedene Möglichkeiten für eine klimaneutrale Energiegewinnung im Welterbe verfolgt, dann hinsichtlich ihrer Ergebnisse überprüft und daraufhin, ob diese Maßnahmen auf weitere Gebäude oder Quartiere übertragen werden sollen. Während in Quedlinburg ein virtuelles Tool erarbeitet wird, werden in den drei anderen Welterbestädten bauliche Projekte umgesetzt.

So werden in der Stadt Karlovac in Kroatien – sie arbeitet mit dem Energie Institut HP zusammen – in einem Wohnblock zwei Wärmepumpen und an zwei ausgewählten Stellen Photovoltaikanlagen neu errichtet. Im italienischen Palmanova – durch die Landesagentur Umwelt APE begleitet – wird etwa 350 Meter vor der Welterbegrenze ein Solarpark gebaut mit einer Direktleitung ins Probequartier, das dann komplett über grüne Energie aus diesem Solarpark versorgt werden soll. Und in Zamosc in Polen, die mit der Universität Lublin zusammenarbeitet, werden zwei Gebäude mit einer modernen hochleistungsfähigen Innendämmung versehen; dadurch sollen die Wärmeverluste reduziert, die Einsparung in der folgenden Heizperiode gemessen oder berechnet werden.

Solche Projekte seien spannend, sagte Steffen Kecke (Bürgerforum) im Stadtrat, wo über das Forschungsprojekt informiert wurde. Er wünschte sich, dass „solche tollen Ansätze", wie es sie auch zum Thema Schwammstadt – Wasserführung und -speicherung – in Quedlinburg gebe, „auch in Umsetzungsprojekte münden" und nicht nur bloße Theorie bleiben würden. PEK

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Figure 7 Article on the Mitteldeutsche Zeitung on the project ZEB4ZEN

1.4.4. Zamosc (PP6 – Lublin University of Technology & City of Zamość)

Lublin University of Technology (PP6) contributed to communication of the Zamość pilot through the documented 3D building model, the CityAtlas platform, a demonstration video, a scientific publication and presentation of the tool to project partners. These activities provide visual and technical material for

discussing energy transformation in a protected historic setting. Municipal consultation is reported below as complementary local evidence, with its city-led origin distinguished from the university's contribution.

The Mayor of Zamość invited residents, visitors, entrepreneurs, local organisations, councillors and municipal staff to participate in an anonymous online consultation on the Municipal Programme for the Care of Monuments for 2026–2029. The invitation was issued on 15 September 2025 and specified 15 October 2025 as the response deadline. The Google Forms results contain 273 responses and include questions on internal insulation, photovoltaics and heat pumps. For example, 43.2% supported heat pumps and 33.3% were undecided. The results provide useful context for explaining energy interventions, but the consultation concerned the heritage programme and does not constitute approval of a ZEB4ZEN Energy Action Plan or a specific investment.

At the Karlovac project event on 10 June 2026, Michał Wac and Bartosz Szostak presented CityAtlas as part of the exchange of digital approaches for historic urban areas. The presentation communicated the Zamość analytical model and the use of building-linked information to project partners and participating municipal and technical stakeholders. It provided a practical example of linking spatial documentation with structured building data for discussion of heritage-compatible energy planning.

Supporting evidence consists of the mayoral invitation dated 15 September 2025, the municipal consultation results exported on 27 October 2025 (Questions 26–28, pp. 93–95), and the Karlovac event documentation included in the ZEB4ZEN D.3.2.2 NEB promotion report. The municipal survey and the university's digital dissemination activities offer complementary channels for subsequent discussion of affordability, heritage compatibility and technical feasibility.

2. Online Communication

While local events enabled direct interaction with citizens, public authorities, stakeholders, research organisations and SMEs, online communication was used to extend the reach of the presented information and communicate the main messages, activities and results to audiences beyond those participating in person.

During local events, conventional PowerPoint presentations were combined with live demonstrations of the VR tool, allowing participants to explore proposed energy solutions and better understand their application within the local urban environment. Participants were also able to provide direct feedback during the presentations. Online communication supported these activities by presenting the events, digital tools and energy-planning approaches through project and partner communication channels.

Communication focused on connecting technical energy-planning topics with practical and locally relevant examples. Particular attention was given to visual and digital content that can help explain complex information, including 3D city models, Virtual Reality tools, pilot solutions and examples of energy transformation in historic neighbourhoods.

Online communication approach:

Purpose of online communication	To extend the communication of local events beyond participants attending in person and provide wider audiences with accessible information about the EAPs, VR tools and digital approaches presented during the events.
Communication channels	Project, partner and municipal websites, social media and video-based platforms.
Target groups	Local public authorities, citizens, stakeholders, research organizations, and SMEs.
Connection with local events	Online communication followed and supported local presentations by communicating the activities, solutions presented and stakeholder involvement.
Communication formats	Web articles, social media content, photographs and videos complemented PowerPoint presentations and live VR demonstrations delivered during local events.
Main communication message	Energy transition measures in historic neighbourhoods can be better understood when technical information is connected with the physical environment in which the measures could be implemented.

The project website, is hosted on the Interreg CENTRAL EUROPE programme platform at https://www.interreg-central.eu/projects/zeb4zen/. The website primarily addresses authorities, in particular local, regional and national public administrations, providing them with information on the project approach, the pilot neighbourhoods and the results achieved. On LinkedIn the audiences are more

academic in character as well as stakeholder-specific, depending on the respective project partner and the networks it addresses. Additionally, each project partner is responsible for the communication through LinkedIn.

Online communication accompanying the local activities supported the presentation of the EAPs through VR tools and digital platforms, while engaging diverse audiences and demonstrating how technical project results and complex energy-planning information can be translated into accessible content with practical relevance for citizens, stakeholders and local decision-makers.

Overview of online communication activities and key performance indicators (KPIs) are listed in Table I.

Table I Communication activities and KPIs

Communication activity	Communication channel	Views	Reactions	Clicks
CityAtlas Showcase video	Youtube	33	N/A	N/A
ZEB4ZEN Project Results and Digital Solutions	LinkedIn	408	11	170
VR Tool Presentation and Energy Planning in Historic Cities	LinkedIn	1542	14	14
Digital Tools for Sustainable Urban Transformation	LinkedIn	1035	30	398
Visualising Energy Solutions through Virtual Reality	LinkedIn	767	16	409
ZEB4ZEN Pilot Activities and Stakeholder Engagement	LinkedIn	424	12	29
Energy Action Plans and Stakeholder Engagement	LinkedIn	485	18	89
Energy Action Plans and Digital Planning Approaches	LinkedIn	400	13	99
3D City Models for Energy Planning	LinkedIn	902	22	66
Presentation of ZEB4ZEN Digital Twin at Quedlinburg City Council	LinkedIn	1620	41	2
First Version of Quedlinburg Digital Twin Developed within ZEB4ZEN	LinkedIn	259	7	
ZEB4ZEN VR Tool for Energy Planning in Historic Cities	LinkedIn		40	
ZEB4ZEN Digital Twin Presented at IEEE IHTC Conference in Bari	LinkedIn	1777	45	2
ZEB4ZEN Digital Planning Solutions Presented to German UNESCOO Cities	LinkedIn		17	
ZEB4ZEN VR Tool Presented in EIHP	LinkedIn	201	14	137

Table II summarizes the supporting project website communication activities.

Table II Website communication activities

Published article	Communication channel	Performance data
Using Virtual Reality to Support Energy Planning and Sustainable Urban Transformation	Project website	N/A
Visualising the Energy Transition – Karlovac	Project website	N/A
Transforming 3D City Models into Smart Decision-Making Tools	Project website	N/A
ZEB4ZEN Results Presented in Eisleben	Project website	N/A
Data Collection and Energy Needs Modelling	Project website	N/A

The available communication statistics provide an overview of the reach and audience engagement generated through online communication activities supporting the dissemination of the Energy Action Plans (EAPs), VR tools and digital solutions developed within the ZEB4ZEN project.

Across eight LinkedIn posts for which performance data were available, a total of 9,853 impressions, 300 reactions and 1415 clicks were recorded, demonstrating the visibility of project-related content and audience interaction with the published information. In addition, the CityAtlas Showcase video recorded 33 views, providing an additional visual format for presenting digital planning solutions and their practical applications.

Online communication was further supported by five articles published on the project website, covering topics such as virtual reality, 3D city models, energy planning and activities implemented in the pilot locations. Additional LinkedIn posts published through partner communication channels contributed to the dissemination of project results, although detailed performance statistics were not available for all publications.

Overall, these activities complemented local events by extending the dissemination of project results beyond in-person participants and making technical information on EAPs, VR tools and sustainable energy planning more accessible to wider audiences. While the available statistics indicate positive audience engagement, differences in data availability across communication channels and project partners should be considered when evaluating the overall communication performance.

3. Development of Transnational EAP Communication Strategy

Goals of the Strategy include fostering cross-border collaboration, ensuring consistent messaging about the EAP's and promoting public acceptance and participation. The strategy includes the utilization of tools, such as VR, to simplify complex information and make it accessible to diverse audiences.

The Contents of the Strategy are structured around several key components:

The main message highlights the benefits of the proposed energy action plans, while addressing challenges and are shared by a mix of digital platforms (e.g., 3D/VR demonstrations, webinars), in-person events (e.g., workshops, city council sessions), and traditional media (e.g., reports, presentations) in order to reach a broad audience.

Adjustment to Local Contexts is critical, as energy priorities, regulatory frameworks, and cultural attitudes toward decarbonization can vary across regions. The strategy must allow for customization of messages and tools to address specific local challenges.

Existing Examples provide valuable insights for the strategy. For instance, the 3D presentations in Quedlinburg and Palmanova showed how immersive tools can enhance understanding and acceptance of energy action plans. While the feedback from the IEEE IHTC 2024 conference underscored the need to address privacy and technical concerns proactively.

B. Results

The communication of the Energy Action Plans combined in-person events, digital tools and online channels to reach a diverse audience across the pilot neighbourhoods. Local events demonstrated that the VR tool and the digital platform make complex energy action plans and municipal solutions more accessible, thereby supporting social acceptance, accelerating local decision-making processes and at the same time providing a space for feedback. Online communication extended the reach of the local events beyond in-person participants, generating more than 1,500 impressions across the used channels and translating energy-planning information into accessible content for the target groups. Building on these experiences, a joint transnational communication strategy fosters cross-border collaboration, ensures consistent messaging on the EAPs, and allows for the adjustment of messages and tools to local contexts to promote public acceptance and participation.