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Highly advanced modular integration of insulation, energising and storage systems for
non-residential buildings



D9.5 End-users' engagement

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Terms, definitions and abbreviated terms

GA	Grant Agreement
WP	Work Package
T	Task
D	Deliverable
M	Month
KPI	Key Performance Indicators
TRL	Technology Readiness Level
VIP	Vacuum Insulated Panel
PCM	Phase Change Material
ZEB	Zero Energy Building
PEB	Plus Energy Building

1. Executive summary

This report D9.5 “End-user’s engagement” of the POWERSKIN+ Project provides a description and planning for assessing the potential impact of the POWERSKIN+ solutions, investigating individual behaviours and choices of potential stakeholders’ groups regarding innovative façade solutions.

An assessment will be carried out throughout the project involving project stakeholder mapping and analysis and by means of a questionnaire and accompanying campaign to find out end user's preferences and other drivers.

The document has been prepared in the framework of WP9 (linked to tasks T9.1: Communication and Dissemination and T9.3: Exploitation and IPR). It reports raising awareness and promoting the POWERSKIN+ solution and its likely applications to potentially interested parties across the industry.

The final report on the assessment results, the questionnaire and the awareness campaign will be part of D9.8 POWERSKIN+ Communication and Dissemination report and Awareness campaign, due near the end of the project (M48).

2. Introduction

The following deliverable presents the description and planning of the promotion and assessment of end-user's engagement of the POWERSKIN+ project.

The main sections are related to:

End user's engagement – Chapter 3 defines the end user's engagement.

POWERSKIN+ technologies concept – Chapter 4 provides a brief description of the POWERSKIN+ concept.

Dissemination and communication – Chapter 5 provides an overview of the tools and activities both implemented and planned within T9.1: Communication and Dissemination of the WP9 to support and increase end-user's engagement.

KPIs monitoring – Chapter 6 provides an update on the current KPI status.

Project stakeholders/end-users mapping and analysis – Chapter 7 focuses on the process of targeting, screening, and identifying stakeholders/end-users to map and analyse them. Additionally, the plan for the end-user focused campaign, including a questionnaire, is described.

3. End-user's engagement

End-user's engagement measures how and in what capacity users find value in a project, technology, product or service. Engagement can be measured by a variety of combined activities such as visits, downloads, clicks, shares, interaction, inquiries, and awareness levels. Highly engaged users are generally more beneficial, provided that their activities are tied to valuable outcomes.

User's interests change over time as the project progresses and the content of information changes. The dissemination and communication team has the task to lead the project through that journey. New users are often forming first impressions and trying to discover the initial value of the project. Months later, as awareness and knowledge increase, they may have different needs, such as detailed technical reports or advanced assessment.

Dissemination experts help both new and experienced end-users by progressively sharing more of the project's insights over time. For all new users, onboarding is a crucial point, the initial impression of the project is therefore important, and a recognizable brand identity is essential. Users can be driven to the project out of pure curiosity or a recommendation rather than a need.

The project dissemination plan needs to be designed in a way to help users quickly discover its value or risk losing them.

4. POWERSKIN+ technologies concept

Starting from TRL5 technology, the ultimate objective of the 4-year project is to generate a set of POWERSKIN+ hybrid-enabled system prototypes and demonstrate them in an operational environment (TRL7), thus treading the path for future exploitation of the Plus Energy Non-residential Buildings, as the primary market entrance.

The robust and highly innovative prefabricated POWERSKIN+ modules will be integrated synergistically, offering high adaptability in relation to climatic characteristics, geographical conditions, physical constraints and national regulations.

While taking advantage of its modular nature, different combinations of POWERSKIN+ modules and addons can be set to match any specific need and refurbishment budget. In its full package, branded as POWERSKIN+ Upgrade, the system targets the deep renovation market and accelerates the transition to plus energy ranks, while providing a unique all-in-one envelope retrofit solution.

The smart combination of all the 3 functions offers POWERSKIN+ modules a unique place in the renovation market:

- insulation/climate control
- energy harvesting and storage
- in the least invasive exterior building refurbishing way, with minimum adaptation and skilled installation required

For less demanding retrofitting scenarios or lower budgets, POWERSKIN+ standard option, comprising the transparent/opaque superinsulation modular futures solely, will still be a strong market competitor to allow office and commercial buildings to reach nZEB standards.

The concept proposed by POWERSKIN+ releases the untapped potential in the energy insulation/valorisation and energy generation of building facades, by developing an integrated

approach that consists of several innovations whose technologies, efficiencies and added value exceed the currently available alternatives on the market.

POWERSKIN+ presents a radically new vision for energy insulation and renewable generation that will combine a number of state-of-the-art developments in highly energy-efficient materials and superinsulation elements, solar energy harvesting components and active energy storage features, with breakthrough technologies based on Nano formulation of VIP core, nano-PCM, flexible thin glass solar cell and multi-functional nano-enabled coatings.

Simultaneously, each of these sub-technologies is designed for the highest compatibility with standard manufacturing lines so that rapid implementation, adaption to various use-cases (e.g., dependent on building location) and market penetration can be ensured.

The vision is materialized in the development of modern lightweight curtain walls and associated retrofitting systems for non-residential buildings, comprising the first generation of off-site prefabricated glazing and opaque elements with eco-designed framings, multi-functional coatings with self-cleaning, light-reflective or absorbing, self-healing properties, active and passive thermal energy storage and integrated semi-transparent PV cells, novel non-intrusive re-vacuum and in the implementation of three demonstration constructions.

POWERSKIN+ will create and demonstrate pilot nZEB and Plus Energy Buildings (PEB) that can also be affordable, provide a comfortable and healthy indoor environment, and be stimuli-responsive and dynamic to climatic conditions, to occupant comfort and energy efficiency requirements.

5. Dissemination and communication

The focus for dissemination and communication activities is on energy efficiency in buildings - nanotechnologies, advanced materials and processes, insulation and the building sector in general. The general target groups are all players involved in the construction industry and renovation projects. In the case of end-users, the strategy is adapted to bring the project message across in an understandable and clear way.

Dissemination activities are targeting end-users, both nationally and internationally. The tools that will be used for end-user engagement are the following:

- Publications (popular magazines, newspapers)
- Conferences, congresses, workshops, seminars, forums participation
- Fairs, exhibitions participation
- Public workshops, webinars organization
- Press releases
- Digital (project website, social media profiles, thematic portals, online campaigns)
- Links to other projects, clustering activities
- Common visual identity, logo, brochure, poster, project presentation
- Video production (project promo videos, videos from the events, training videos)
- E-newsletters, infographics
- Gadgets for promotion
- Training sessions

5.1 Main dissemination channels for end-user's engagement

5.1.1 Project website

The POWERSKIN+ website is considered one of the key elements of communication. The website was designed and is hosted by FENIX through the domain **powerskinplus.eu**.

The information included on the project website is regularly updated with the newest project progress information. It will be kept online for a minimum of 2 years after the project has finished, ensuring the preservation of the data for end-users and follow-up activities. Additionally, the website is a central hub for linking to all other communication channels of the project (e.g., links to social network profiles, online Twitter feed, newsletter subscription).

Website cookies policy and google analytics tracking were also implemented (number of visitors, users, sessions, countries, languages, downloads, etc.) to track the overall engagement.

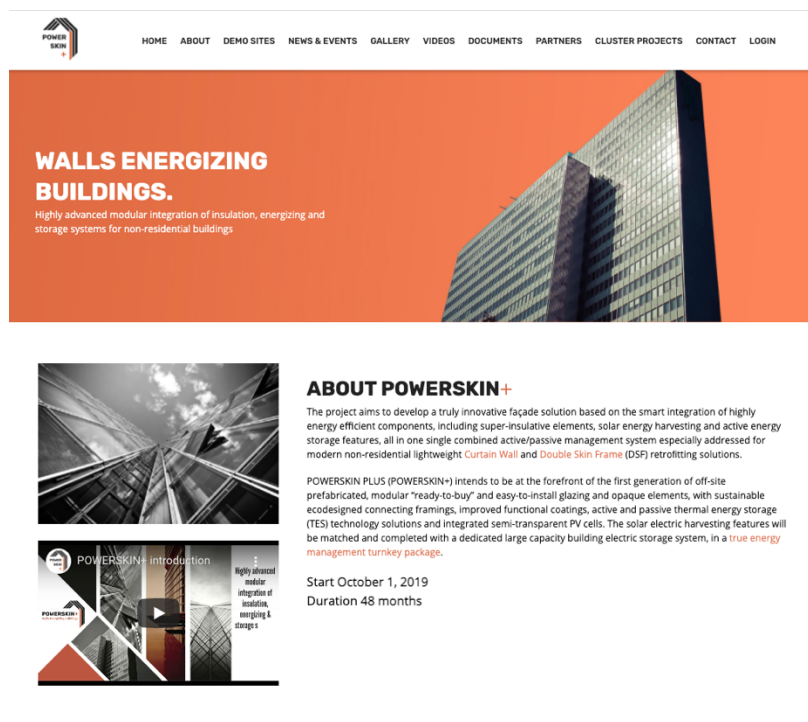


FIGURE 1: POWERSKIN+ WEBSITE

5.1.2 Promo materials

For allowing immediate recognition of the POWERSKIN+ project, promo materials were designed. Thanks to standardized communication standards meant for external audiences, the following materials are envisaged to be successful and memorable tools that can increase stakeholders' engagement and promote the project.

5.1.3 Project logo

It is important to follow and respect the project visual identity in order to maximize the impact on the audience. For this reason, a logo manual has been created at the beginning of the project, outlining the graphical identity guidelines (master brand logo, colour palette, logo usage, logo clear zone, relation to other logos, typography, file formats, applications and errors to avoid). The logo is available in both versions on the project website along with the complete logo manual (<https://www.powerskinplus.eu/documents/promo-materials>).



FIGURE 2: MAIN PROJECT LOGO

5.1.4 Flyer, brochure, presentation and roll-up

Flyer and brochure

The project leaflet has been designed at the beginning of the project. The format is A5 (210 x 148 mm), and it contains essential information about the project – the overall concept, partners, website and social media link. In addition to the project leaflet that contains only essential information about the POWERSKIN+ project, FENIX has designed a project brochure. The format is the same as the leaflet (A5 - 210 x 148 mm), but it contains more information, and the page count is doubled compared to the leaflet. Apart from the overall concept and partners presented already in the leaflet, the brochure provides additional information about the project concept, objectives and demonstration sites. Furthermore, the brochure provides all social media links and a QR code. The brochure is available on the project website and has been shared on social media (<https://www.powerskinplus.eu/documents/promo-materials>). The materials will be updated as necessary with the newest information.



FIGURE 3: PROJECT BROCHURE

Presentation

The project presentation in PowerPoint has been designed for the POWERSKIN+ project by FENIX. The project presentation includes general information of the project, concept, objectives, a timeline of the project and information about demonstration sites. Furthermore, contact information, website link, social media links, partners, and funding support from the European Union statements are also present. The presentation is available on the project website (<https://www.powerskinplus.eu/documents/promo-materials>), and it has also been shared on the POWERSKIN+ social media. The presentation will be updated with more information as the project progresses.

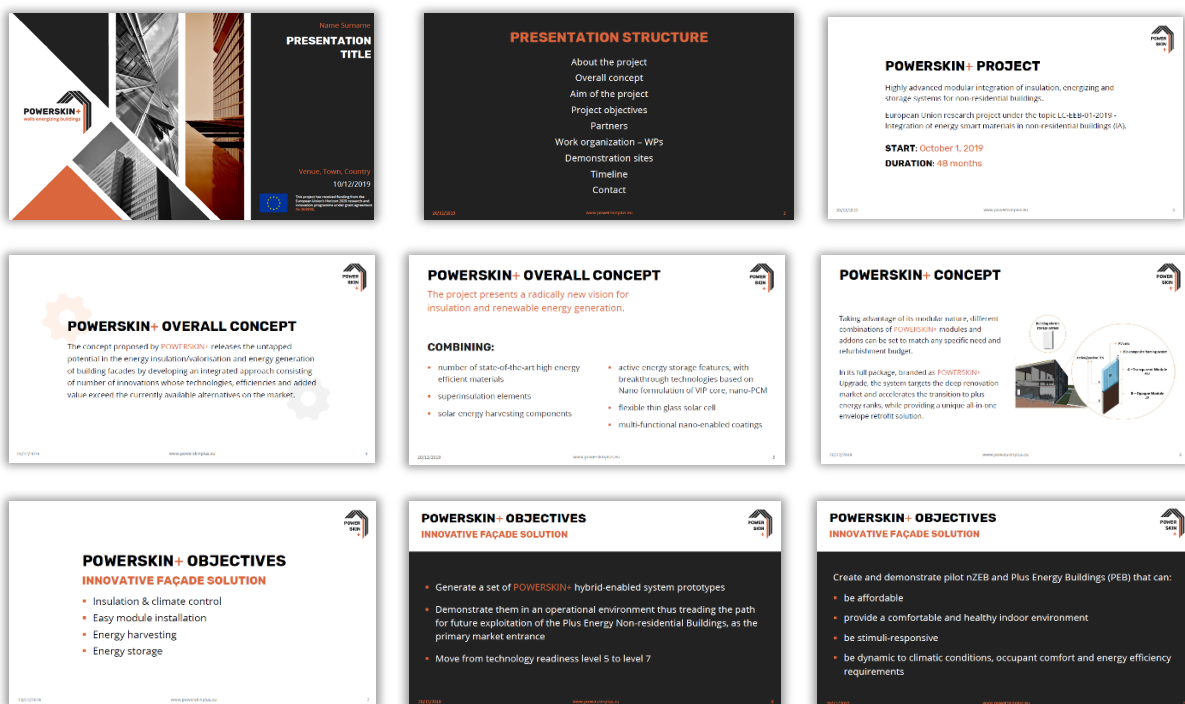




FIGURE 4: PROJECT PRESENTATION

Roll-up

The one-page roll-up poster (format 85x200cm) has been designed for the POWERSKIN+ project at the beginning of the project by FENIX. Project partners have already been and will continue to attend relevant meetings and expos, so the roll-up design is used in stands and booths. In the case of online events (webinars, workshops etc.), the roll-up can be used as a background to further solidify brand awareness. The roll-up poster includes the project's main motto, the project's general objectives, website and social media links, partners' logos, and funding support from the European Union statements. The poster is available on the project website (<https://www.powerskinplus.eu/documents/promo-materials>) and has been shared on social media.



FIGURE 5: PROJECT ROLL-UP POSTER

5.1.5 Project videos

One of the key methods for effective dissemination is the creation and publication of videos. Video is the most popular format in online marketing. FENIX with in-house video production leads the creation of videos for the POWERSKIN+ project. A graphical video was created in month M2 to support dissemination activities from the beginning of the project. Animation has been used to present the project objectives, overall concept, information about demo sites, partners, the project road map and information about the EU funding. The video is available on POWERSKIN+ YouTube channel: <https://www.youtube.com/watch?v=ZRKY-My3inc&t=1s>.



FIGURE 6: GRAPHICAL VIDEO

A final promo video is planned to be designed towards the end of the project when the technology is fully developed and tested at demo sites. It will include interviews, photos, filming, graphics, music and voice over. The videos' main aim will be introducing the POWERSKIN+ project to a wide public audience and range of stakeholders, including end-users (project

introduction, main objectives, innovation, design, demo versions, advantages, use, and contact info).

The video presentation is meant to follow the successive introduction to the strategies regarding the “online campaigns”: social media, workshops, web advertising in general. The videos will then be implemented into the POWERSKIN+ project website, uploaded on the YouTube channel, and shared on social profiles, thematic portals, partner’s websites, presented during events, etc.

6. KPIs monitoring

Part of the engagement of all stakeholders is key performance indicator monitoring and evaluation. Some key performance indicators have been defined at the beginning of the project. The following table shows the current status of KPIs at M18 of the project.

TABLE 1 KPIs MONITORING

Dissemination Activity	Description	KPIs at M18	KPIs (end of project)
Project website	Created in M3, it serves as a place for storing, sharing and downloading public documents related to the project, as well as provides an opportunity for the general public to get updated information about the project. It will be kept alive and maintained for at least 2 years after the project ends.	Views - 9 393 Users - 1 215	>20 000 views >2 000 users
Social media campaign	Created in M1 and updated on a weekly basis (Twitter, LinkedIn, Facebook, Instagram).	In Total: Followers - 336 Impressions – > 35 000	In total: >500 followers >15 000 impressions

Project brochure, roll-up and presentation	Designed in M5, including general public information about the project. Three updates of the promo materials planned within the project. The brochures will be available for the attendees of the dissemination events and the roll-up will serve as the visual representation of the project	> 1 roll-up printed > 1100 downloads from the project website	> 5000 printed copies > 500 downloads from the project website
E-newsletter subscribers	Distributed among the relevant actors every six months (starting at M8), including the project updates, findings, and outcomes of the research performed under the project, as well as other interesting information about the project.	45 subscribers 200 downloads	> 500 subscribers and downloads from the project website
Videos	Two promo videos are planned. In M2, a graphical video illustrating the project objectives, concept, demos and partners created. At M36, a video including interviews with key partners and footage from the demo sites will be produced.	315 views	In total: > 600 views on YouTube channel
Publications	Articles in dedicated journals and magazines in the field of energy efficient buildings, construction sector. Press releases in the thematic portals.	1 scientific 3 articles in magazines 9 press releases	> 5 scientific papers > 5 articles in magazines > 10 press releases
Participation at exhibitions, fairs, seminars etc.	Representation and exhibition of the project at various types of events. The purpose is to spread awareness about the project as well as to answer questions about particular research results.	9 events	> 30 various events participation

7. Project stakeholders/end-users mapping and analysis

In the following paragraphs, the different steps of the process to investigate end-users' perspectives are described. This process includes:

- Identification and targeting of specific stakeholders (including end-users)
- Design and execution of stakeholders' engagement questionnaire
- Stakeholders' engagement evaluation and questionnaire reporting

7.1 Identification and targeting of specific stakeholders

To analyse individual behaviours and choices of the end-users in a wide socio-economic context ranging from the local to the European level, specific target groups of stakeholders need to be identified and continuously revised. By definition, a stakeholder is any entity or individual with an interest or stake in a project. Hence, they can be individuals, organizations or unorganized groups.

Specifically, the relevant groups potentially interested in the technologies developed within the POWERSKIN+ project and the project itself have been categorized as follows:

- Public Authorities
- Architects/Designers
- Technologies Producers/Manufacturers
- Importer/Suppliers – distributors
- Energy engineers
- Installers
- Contractors
- End-user (building owners, tenants, etc.)
- R&D (university)

- Other: this grouping includes a diverse collection of stakeholders, different from any other specific group

7.2 Design and execution of stakeholder's engagement questionnaire

After identifying the specific target groups of stakeholders, a questionnaire addressing the stakeholder requirements and needs will be designed to investigate the end-user's interest and engagement in the POWERSKIN+ project.

In particular, the survey will be prepared to collect different stakeholders' views about the impact of the POWERSKIN+ project and identify their needs, habits, and preferences.

The questionnaire will comprise several questions covering information related to the person interviewed and his experience with the project and its results. This survey will seek to understand the stakeholder's perceptions of the industry trends and the project itself.

Before distributing it to stakeholders, the questionnaire will be shared and validated among all Consortium partners. The questionnaire will be designed with the project brand identity in mind. It will include different types of survey methods such as multiple-choice questions, Yes or No questions, rating scales oriented on the possibility to perform a simple further analysis and deduction, and open-ended questions to get input on significant value issues.

After the validation of the questionnaire and including input and feedback from all partners, the questionnaire will be set on a platform dedicated to creating online surveys, e.g., [Survio.com](https://www.survio.com/)¹, [Typeform.com](https://www.typeform.com/)², or European Commissions EU Survey³.

The questionnaire will then be distributed to stakeholders through various communication channels and means already used by the project.

¹ <https://www.survio.com/>

² <https://www.typeform.com/>

³ <https://ec.europa.eu/eusurvey/>

The planned channels are:

- Email newsletter campaign - invitation containing the direct link to the online questionnaire
- Direct email invitation – using the contacts of project partners and their network, the questionnaire will be directly distributed to relevant stakeholders
- Social media campaign
- POWERSKIN+ website page - a specific page will be created on the project website. The stakeholders will therefore be able to find more information about the project before filling out the survey
- The survey was also shared using websites as BuildUp.eu, ECTP, EU Agenda, as well as during online and in-person events

The data collected will help collect feedback and identify stakeholders' needs, habits, and preferences related to their experience with highly innovative prefabricated POWERSKIN+ modules. Personal views on future trends collected during the survey may have the capacity to provide valuable input to the outcomes of the POWERSKIN+ project.

Furthermore, the questionnaire results analysis will help promote user engagement and assess and foster the potential impact of the POWERSKIN+ project.

Preliminary questions and topics to be included in the questionnaire:

- General introduction to POWERSKIN+ project and links to website and social channels, graphical video
- User identification, categorization and typology (country, type of stakeholder, occupation)
- Evaluation of awareness/knowledge of the project and the related topics
- Evaluation of general interest in the topics
- Experience with EU funded research projects
- Sources of information about innovations and new technologies
- Feedback on dissemination activities and upon the information provided
- Feedback on training and technical information
- Feedback on clustering and project cooperation
- Free text option for own comments, suggestions and questions
- Contact to dissemination leader and project coordinator

7.3 Stakeholders' engagement evaluation and questionnaire reporting

The report on the assessment results, the questionnaire and the awareness campaign will be part of D9.8 POWERSKIN+ Communication and Dissemination report and Awareness campaign, due near the end of the project (M48).

All stakeholders identified will be invited to complete the online questionnaire. The questionnaire and the campaign will run near the end of the project to maximize the potential of a high number of participants. Questionnaire findings and the related campaign will be analysed, and the results presented to evaluate the engagement achieved.