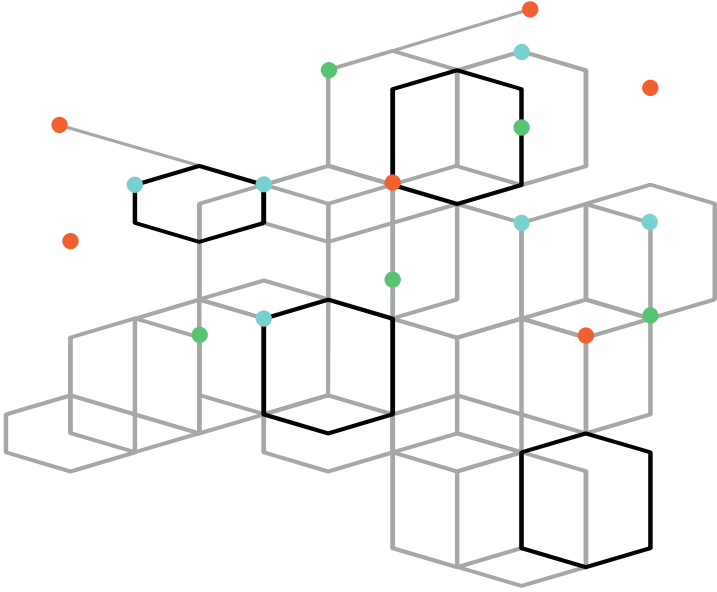

Demo Blog

D5.3 - Third release: Dissemination, Communication and Exploitation plan

Co-funded by the European Union

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1	R2M inputs to “3. Exploitation plan”, “DBLs business case factsheet” and “Key aspects of the PESTEL Analysis at global level”	13/05/2025
2	R2M inputs to “Communication and dissemination actions” and “KPI summary table”	05/06/2025
3	BPIE inputs to the remainder of the document	05/06/2025

4	BPIE finalises with remaining input from R2M and TU Delft	16/06/2025
5	TUD and R2M review	18/06/2025
6	BPIE resolves comments and suggested changes to deliver the final draft	19/06/2025
7	R2M reviews	19/06/2025
8	TUD reviews	20/06/2025
9	R2M and BPIE contribute remaining input	23/06/2025

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Executive Summary

This deliverable, D5.3, is an updated version of D5.2 published at M18 (June 2024), which was itself an update to D5.1 (published M6, June 2023) the Dissemination, Communication, and Exploitation strategy. The update has been coordinated by R2M, with contributions from BPIE and inputs from all project partners, as part of Tasks 5.2, 5.3, and 4.4.

This document revises the dissemination objectives and activities, target audiences, key messages, and the online and offline communication channels and tools used to promote the project and its results. It also updates the exploitation strategy for all exploitable results.

Details on Demo-BLog deliverables and activities completed since D5.2, including events and publications, are available in the Annexes.

The objective of this communication and dissemination plan is to ensure that the Key Performance Indicators (KPIs) are met, and that all Key Exploitable Results (KERs) identified are actively monitored and fully exploited throughout the project's lifespan.

The plan emphasises the importance of effective internal communication and the smooth exchange of information among all project partners.

BPIE and R2M will regularly update this plan with the assistance of contributing partners and will release a final updated version at M36.

1. General objectives

Demo-BLog aims to bring together and further develop five existing Digital Building Logbooks (DBLs) in Europe to catalyse and contribute to decarbonisation and circular economy efforts. Through these DBLs, the project will create a common digital data repository that integrates and stores building data from across the construction value chain, such as building renovation passports, smart readiness indicators, Level(s) and EPCs. The DBLs demonstrated in this project have the potential to eventually reflect the whole lifecycle with a capacity for unlimited data access, input and output, and data export.

Transparency and access to information are critical to upscale building renovation at the scale and pace needed to achieve a climate neutral building stock. The extremely limited availability of information, combined with a lack of a common repository of data directly leads to additional costs and inefficiencies in designing, constructing, operating and financing buildings.

Demo-BLog has considerable potential to optimise the use of resources and waste, performance prediction, visual analytics and energy management contributing to the overall goal of "making Europe the first digitally led circular, climate neutral and sustainable economy".

1.1 Objectives of the project

Building logbooks are critical to engage and support multiple stakeholders in their decision-making towards improving the sustainability performance of a building. Demo-BLog brings together:

- five existing building logbooks in Europe, with a total of 4.5 million registered units and a wide variety of target groups spanning from homeowners, municipalities, to building professionals and architects;
- 4 diverse functionalities addressing key societal challenges, ranging from 'quick wins' (renovation and advice and (community driven) decarbonisation pathway) to complex industrial transaction objectives (circularity);
- partners, frontrunners in R&D, policymaking and market implementation in highly visible platforms over the last 5 years; and
- substantial opportunities to build and leverage parallel projects and activities focussed on evolving/scaling the participating building logbooks.

1.2 Objectives of the communication and dissemination activities

The main objective of the communication and dissemination activities is to make the project's target audiences know about the project, understand it and, if needed, take concrete action.

More concretely and as stated in the grant agreement, through these communication and dissemination activities, we aim to:

- Create engaging materials for the project dissemination.
- Raise awareness on DBLs and circularity, increase data transparency, making the concept easy to understand and accessible to a wide public by leveraging a wide range of channels.
- Promote the project activities at EU and at local levels, disseminate the outcomes to relevant policy, industry, and scientific audiences, and to a wider non-specialist audience.
- Disseminate Demo-BLog results to different target groups, while also identifying and engaging stakeholders through debates, workshops, and information exchange.
- Foster synergies with the Horizon Europe 'Built4People' co-programmed partnership.

1.3 Objectives of the exploitation activities

The objectives of the exploitation strategy of Demo-BLog can be summarized as follows:

- Maximize the impact and utilization of the project's results by enabling subsequent technologies, open distribution, licensing, and utilization by project partners or entities.
- Facilitate commercialization and market penetration, aiming to generate revenue through sales and business activities.
- Build collaborations with stakeholders, enhance reputation and awareness, and provide support for the adoption and implementation of the project's outputs by target groups.

To do so the project partners supported by R2M will develop and implement Demo-BLog exploitation activities to maximise project policy and market impact. They will also develop a replication strategy and guidelines, to capitalise on WP3 evaluation outcomes, facilitate and stimulate further adoption and extension of the project outcomes to other EU Members States.

2. Communication and dissemination tools

2.1 Project identity

The logo of the project is one of the key communication features to visually express the topic of Demo-BLog. BPIE trusted the creation of the logo and the project identity to the design company Publishing Bureau. The project identity includes guidelines on how to use the Demo-BLog logo, the colour palette, the primary font, motifs and some examples of graphics.

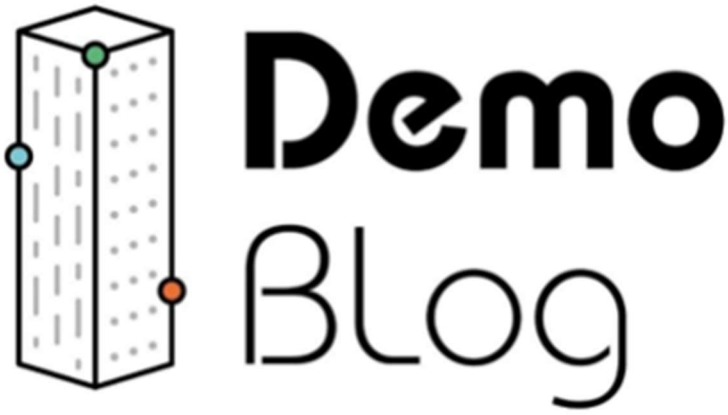

Figure 1 - Demo-BLog logo

The design of the Demo-BLog logo is based on two main features: the shape of a building and the name of the project. The first one brings in the building perspective with a very simple and neat shape of a building, and two other elements that bring dynamism and colour to this shape: three circles in different colours and the dotted lines symbolising data and connectivity.

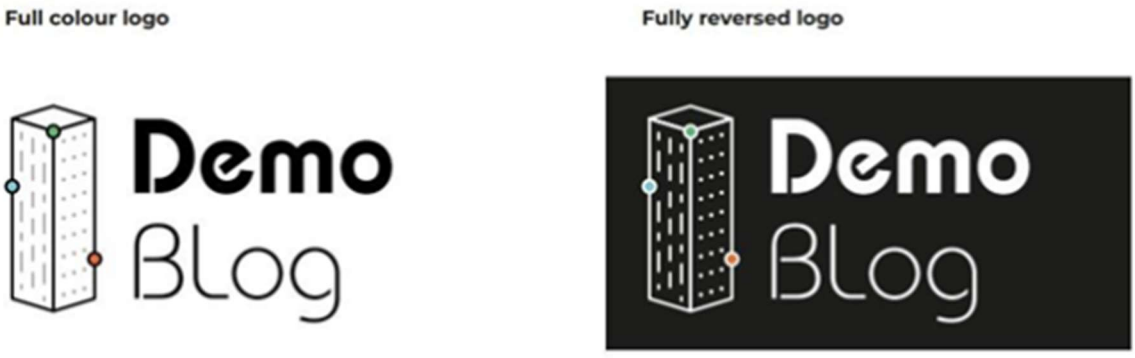

Figure 2 - Demo-BLog logo options

Partners are encouraged to make use of this material as well as of the branded Word and Power point templates available. The branded material is stored in a shared folder on SharePoint and can be accessed by all project partners.

All dissemination materials should acknowledge the EC funding with the use of the European emblem (flag) and a sentence that acknowledges the EU support.

To increase the project's visibility, the link to Demo-BLog website should also be included when possible.

2.2 Target audience and key messages

BPIE has identified multiple target audiences, grouped them and linked them to specific messages that explain the value and benefits of DBLs. An updated table of audience groups and messages is available in Annex 1.

2.3 Website

The website of the project has been produced by the Publishing Bureau, the same creative agency responsible for the visual identity of the project. It has been designed based on the project identity and structured to present the information in a clear and user-friendly way, making it suitable for the project's target audiences. The website can be accessed here: www.demo-blog.eu

2.4 Newsletter

Following the grant agreement at least 6 newsletters will be sent throughout the project lifetime. Newsletters will be shared every six months through the email marketing manager platform Mailchimp. However, occasional mailings might be sent if there are important news, events or reminders to be shared. This will be made clear when users sign up for the newsletter.

2.5 Social media

The Demo-BLog social media channels share and promote news, events, publications, main results, key policy developments, stories, etc., that are relevant to the project's audiences.

BPIE tries to post to the Demo-BLog social media channels once a week to keep audiences engaged about news, events, the newsletter, and showcasing the videos created throughout the project. Posts will feature visuals such as pictures or social media cards with relevant quotes, facts and key dates on the project.

Additionally, we re-post when Demo-BLog is tagged in posts from other organisations as well as posts from, for example, other Horizon projects that could be relevant to our audience. This will also increase visibility and could help position Demo-BLog as a relevant account to follow.

- The Demo-BLog X/Twitter account is @DemoBlogProject and it targets opinion leaders, media and policymakers.
    - As many stakeholders, including project partners, have disengaged from X since autumn 2024, post engagement is now extremely low.

- The Demo-BLog LinkedIn page is used to reach decision makers and private organisations.
    - Since autumn 2024, stakeholders are more active on LinkedIn, as no single platform has emerged as a replacement for X.
    - More targeted messaging to industry stakeholders, EU-level decision makers, and national/local authorities will be developed for LinkedIn going forward.

YouTube is used to mainly share the videos produced by and for Demo-BLog. Since the number of videos produced will not be enough to create a considerable audience on YouTube, the videos will be shared on the BPIE YouTube channel, which has 130 subscribers.

2.6 Press & media

BPIE drafts and sends press releases at appropriate times during the project duration. However, at least 3 central press releases will be produced by BPIE and TUD and shared by all partners within their own channels across the project lifetime. Partners are also expected to provide their output and translate the content into their national languages.

BPIE will focus on EU press and media relations with whom already has established strong connections, such as Politico, Euractiv, and Bloomberg. In addition, BPIE's contact database integrates approximately 300 media contacts at EU and MS level (e.g. the European Energy Review, EU Observer, ENDS Europe, as well as numerous media channels as member state level).

2.7 Publications

To disseminate valuable insights within the scientific community and share noteworthy findings from the project, our consortium partners are actively pursuing publication opportunities in esteemed peer-reviewed journals and magazines. R2M has been assigned the responsibility of monitoring these publications to ensure compliance with the open access standards.

Among the identified publications deemed relevant for dissemination, we are targeting reputable outlets such as Applied Energy, Energy, Energy and Buildings, Energy Economics, Energy Policy (Elsevier), International Journal of Energy Sector Management (Emerald), Energies, Sustainability (MDPI), International Journal of Low-Carbon Technologies (OUP), Energy Efficiency (Springer), Advances in Building Energy Research, International Journal of Sustainable Energy (Taylor & Francis), Foresight and STI Governance (HSE Moscow), Journal of Technology Management and Innovation (Universidad Alberto Hurtado), and ENERGETIKA (Elsevier).

By pursuing publication in these esteemed journals, Demo-BLog aims to effectively communicate its research outcomes, contribute to the academic community's knowledge base, and foster further discussions and advancements in the field of energy and sustainability.

Depending on the selected journal or other type of publication, the project partners will have to use one of the three different possibilities for open access, namely:

- Open access publishing (without author processing charges): partners may opt for publishing directly in OA journals, i.e. journals which provide open access immediately, by default, without any charges,
- Gold' OA publishing: partners may also decide to publish in journals that sell subscriptions, offering the possibility of making individual articles openly accessible (hybrid journals). In such a case, authors will pay the fee to publish the material for open access, whereby most high- level journals offer this option.
- Self-archiving ('green' OA): alternatively, beneficiaries may deposit the final peer-reviewed article or manuscript in an online disciplinary, institutional or public repository of their choice, ensuring open access to the publication within a maximum of six months.

When relevant, beneficiaries will moreover deposit at the same time the research data needed to validate the results presented in the deposited scientific publication into a data repository. Zenodo is used for the project as a public repository, where a Demo-BLog community has been made that is also linked to the project's website.

The academic partner, TUD, employs a full time PhD candidate, who is also the WP3 Leader, researching on the topic " Towards Digitalising Energy Renovation Processes". The results of this research work will be related to project's data and outcomes and will be part of the publication of a Ph.D. thesis expected with the successful completion of the PhD at the end of the project. This decision accounts for the allocation of a greater number of project months to TUD, as their team includes researchers and practitioners who will contribute to the completion of specific project tasks. The key performance indicator (KPI) for this objective is the successful publication of one Ph.D. thesis.

In addition to the project's scientific publications, there will be general and policy-focused publications related to project deliverables, reports and results to be disseminated mainly through the project's website. The main ones are listed below.

Upcoming deliverable	Publication / Activity	Lead beneficiary	Due date
D4.2, T4.4	Business case factsheets (Chimni, CLEA, Woningpas, Cirdax)	R2M	M48 but will be ready by M32
D5.3	Third Release: Dissemination Communication and Exploitation Plan	BPIE, R2M	M30
D3.3	Clickable prototypes of the use interfaces of 5 demo cases, tested with the end-users	LF	M36

D4.4	Policy roadmap for the implementation of DBLs	BPIE	M36
D5.4	Fourth Release: Dissemination Communication and Exploitation Plan	BPIE, R2M	M36
D4.5	Common EU DBL template	BPIE	M42
D5.8	Demo-BLog digital communication activities and visual material development	BPIE	M42
D5.14	Demo-BLog Dissemination activities including project events and webinars	R2M	M42
D5.16	Dissemination to policymakers	R2M	D42
D3.4	Evaluation report on UX and performance of the 5 DBLs	TUD	M48
D4.1	Demo-BLog final exploitation strategy (5- year Exploitation plan of the project foreground IP)	R2M	M48

Table 1 - Upcoming publications and WP5 related deliverables

2.8 Events

Details about Demo-BLog participation in past external events and in project events since D5.2 are available in Annex 2.

2.8.1. External events

Demo-Blog partners will present the project at conferences and workshops they attend both at Member State and at EU level if applicable. Each partner will participate in at least one event over the lifespan of the project (scientific or policy event), linking in as far as possible with other related EU-funded projects. In total Demo-BLog should be presented in at least 20 events.

For partners travelling to attend events, an active role at those events is requested (i.e. info stand, presentation, meetings with key stakeholders, etc). The events will be tracked and reported using the monitoring tool (available on the project's shared cloud platform).

The table below provides an overview of upcoming events at EU and national level that BPIE and R2M have identified, with the contribution of project partners, relevant for Demo-BLog partners to be present.

Event	Date	Location	Partner	Topic/Comments
World Green Building Week	8-12 September 2025	Global	To be decided	The world's largest campaign to accelerate sustainable built environments across the globe
Smart Building Conference	10-11 September 2025	Amsterdam, Netherlands	TUD (tbc)	Focuses on smart building technologies and innovations
Sustainable Places 2025	8 - 10 October 2025	Milan, Italy	TUD, R2M	Platform for the dissemination of research, the conduct of workshops, EU project clustering and networking between stakeholders of all types.
Futurebuild Belgium	27-18 January 2026	Brussels, Belgium	BPIE (tbc)	A premier trade show dedicated to sustainable innovations in the construction industry
World Sustainable Energy Days 2026	25 - 27 February 2026	Wels, Austria	To be decided	Annual sustainability conference held in Austria hosting events centred on sustainable energy production and use, which covers energy efficiency and renewable energy sources for buildings, industry and transport.
Retrofit Challenge Summit	3-5 March 2026	UK	*To be decided*	Annual one-day conference to address the urgent question: how are we going to retrofit UK homes at pace, at scale and “right first time”?
28th Interna-tional Passive House Confer-ence	24 - 25 April 2026	Essen, Germany	*To be decided*	Brings together experts to advance energy efficiency in the building sector

Energy Cities Annual Forum	TBC Spring 2026	Guimarães, Portugal	*To be decided*	

Table 2 - List of possible events for Demo-BLog partners to participate in

2.8.2. Project branded events

As direct and targeted communication is one of the most effective ways to engage key stakeholders, a series of events have been planned by the project. Demo-BLog will arrange targeted dissemination webinars and local events tailored to specific DBL sectors and communities. The objective is to engage relevant stakeholders and facilitate knowledge exchange:

- A minimum of 6 dissemination webinars, each with at least 50 attendees. The target audience for the sectorial dissemination webinars comprises professionals from the real estate and housing sector, construction companies, utilities, technology providers, facility managers, and policy makers. Online events may be substituted with in-person interventions at relevant sector events. Each partner will contribute to at least one of these events.
- For each demo, a local dissemination event will be organized in the respective local language to present the outcomes to the concerned communities (each attracting a minimum of 80 attendees.). The demo leaders will lead the organization of these local events, with overall coordination and promotion support provided by R2M, including assistance in setting up registration pages and designing promotional materials.
- The final event in Brussels is expected to have a minimum of 100 attendees and will feature round table discussions with representatives from at least 6 stakeholder groups.

2.9 Key performance indicators

A set of key performance indicators (KPIs) were defined in Year 1 of the project to monitor and assess the main dissemination and communication activities. The table below presents a summary of KPIs that reflect the progress and impact of Demo-BLog's communication and dissemination activities to date. It serves as a snapshot of Demo-BLog's reach and effectiveness, demonstrating ongoing momentum towards project targets and continued growth in visibility and stakeholder involvement

Activity	**KPI**	**Target**	**Methodology**	**Status at M30 (June 2025)**
Advisory Board (AB)	Number of AB members representing different value chain segments	>5	N/a	20 members, representing 9 different value chain segments

Visual identity	Including brand, logo and templates, by M2.	N/A	Deliverable	Completed
Website	Unique visitors/year	>2,500	Google analytics	3,700 visitors from 15 June 2024 – 15 June 2025
Social media accounts	Twitter followers	>200	Twitter analytics	63
	LinkedIn followers	>400	LinkedIn campaign monitor	347
General media	Press releases	>3 (kick off, intermediate milestones, final event)	Website news, emails to journalists	0
	Mentions of Demo-BLog	>4 press articles	Media monitoring, contact with journalists	0
Videos	Introduction video to pitch project objectives by M7.	8	Deliverable	5 delivered Videos | Demo-BLog
	Follow-up videos	>A video per Demo M30-M42, each in EN and local language (FR, DE, NL).	Deliverable	In development
Newsletter	Number to send Number of subscribers	6 >500	Mailchimp	3 sent 111 subscribers
Infographics, factsheets	Number to produce	3	Deliverable Website News and Resources	1 infographic delivered 1 infographic in progress

				4 business case factsheets in progress
Dissemination at relevant scientific and policy events	Number of events where Demo-BLog results are presented	20	Events table Website news	11 of 20 dissemination activities at relevant scientific and policy events
Scientific publications	Open Access publications related to the project (one per technical WP)	5	N/A	5 of 5 scientific publications published
Ph.D. thesis	Ph.D. thesis based on the results of Demo-BLog	>1	Publication of the Ph.D. thesis	N/A - Expected at the end of the project
Webinars and events	Dissemination webinars for specific sectorial audiences and attendees	>6 webinars >50 attendees	Events table Website news	3 delivered, all documented; 4+ planned (see Webinars Table in Annex 2)
	Local events targeting DBL audiences.	>4 events in local language (FR, DE, NL, EN) >80 attendees per event	Events table Website news and events	N/A - upcoming
	Final event in Brussels	>100 attendees Roundtables with representatives of >6 stakeholder groups	Events table Website news and events	N/A - upcoming

Partner project interactions	Significant contributions to events organised by Buil4People	>3 workshops with sister projects	Events table Website news and events	5 realised: - ECTP event (12/23) - Construmat (05/24) - EUSEW24 (06/24) - SP24 workshop (09/24) - NEBULA B4P Accelerator (03/25) 1 planned: - SP25 workshop (09/25)

Table 3 - Assessment of Key Performance Indicators to M30

All activities above are traceable via the project tracker and public Demo-BLog resources.

3. Exploitation plan

This chapter presents the activities and results of the Demo-Blog exploitation strategy for the period M25-M36 of the project. The exploitation strategy of the Demo-Blog project aims to translate its technological, policy, and societal innovations into impactful, sustainable solutions across the European built environment. It does so by:

- Empowering Digital Building Logbook (DBL) owners to advance their tools with market-ready functionalities.
- Supporting commercialization pathways for key exploitable results (ERs) and knowledge assets.
- Encouraging policy uptake and replication by Member States.
- Catalysing further investment and partnerships through structured, data-driven business cases.

This update captures the latest advancements since the M24 report.

3.1 Exploitation management activities

In this period, the following exploitation management activities have been conducted:

- The list of exploitable results has been kept-up-to-date and exploitation activities have been monitored. The full list of ERs is presented in section 3.2.
- The exploitation plans for the exploitable results have been updated. Information about the development status and undertaken exploitation activities has been collected.
- The list of exploitable results has been reviewed with all project partners at the General Assembly in London. Six new candidate ERs have been identified and will be assessed in the coming period. Details can be found in section 3.2.
- A first version of a PESTEL analysis at national level has been done and the result has been circulated across the project partners. The result is presented in Annex 3.
- Business models and exploitation pathways for the five ERs have been identified and assessed. While the augmentations introduce new functionalities, preliminary analysis done during the updated of ER factsheet suggests that they do not fundamentally alter the underlying business models of the original DBLs. Rather, the new features tend to reinforce or extend existing value propositions, user relationships, and revenue mechanisms. Each KER's exploitation potential, whether through commercial deployment, public service delivery, or multi-stakeholder partnerships, is outlined in the ER factsheet with a focus on how the added functionalities can enhance market readiness or uptake. These business models will be explored in more detail in WP4 as part of Task 4.4.3.
- Draft versions of business case factsheets have been prepared for four of the pilots. R2M and WP4 partners supported each DBL pilot in translating their ER data into full business model canvases. An internal consortium workshop was conducted to analyse each DBL's business ecosystem. A financial KPI template was distributed to DBL owners to collect real and projected financial data. Finally, the factsheets

synthesized the ecosystem mapping, KPI data, ER maturity, and exploitation vision into a 3-page concise narrative aimed at decision-makers. Key insights of the factsheets are presented in section 3.3.

3.2 Exploitable results

Thirteen ERs have been collected at this stage of the project. Each ER is assigned to an ER manager who is responsible for providing information and updates on the result, defining the steps needed to reach full exploitation and launching it eventually into the market or in follow-up research activities. Compared to the list of ERs as presented at M24, six possible new ERs have been identified, being:

- CAPSA GPT application
- Energy Saving Trust Energy Advice Tool
- Vito SOLID (Social Linked Data) pods for data governance
- Block Materials Vision for Technological Infrastructure from a Circular Perspective
- CAPSA Data collection app
- Qualitel Solutions Exploitation of the EPC calculator

These six candidate ERs will be assessed on innovativeness and viability and added to the list of ERs when applicable. Table 4 presents the overview of Demo-Blog ERs. The detailed and updated list of Exploitable Results can be found in Annex 4.

N°	Title	Type	ER Manager	Exploitation Vision
ER1	Enhanced UK Logbook	Product & Application	EST	Licensing to logbook providers; public awareness campaigns; integration with national EPC data infrastructure
ER2	Augmented CLEA DBL	Product & Application	QUAL	Commercial deployment via partnerships with renovation firms and equipment manufacturers
ER3	Augmented Woningpas DBL	Product & Application	VEKA	Government-backed public rollout with regional expansion; link to energy communities and collective services
ER4	Augmented CAPSA DBL	Product & Application	CHILL	Commercial SaaS model; integration in green finance and insurance services; use in Global South partnerships
ER5	Augmented CIRDAX DBL	Product & Application	RUM	Two-sided marketplace; transaction fees; integration with public reuse platforms and blockchain infrastructure

IR1	DBLs Evaluation Framework	Process	TUD	Academic publications; scientific conferences; open distribution; foundational methodology for DBL assessment
IR2	Improved BDNB – French National DB	Product & Application	CSTB	Public policy support tool; integration into France's national renovation and compliance systems
IR3	Multi-cycle Circularity Evaluation Framework	Product & Application	VITO	Scientific use; public domain framework; contributions to circular construction indicators
IR4	DBL Business Case Factsheets	Knowledge	R2M	Investor and policymaker engagement; project replication toolkit
IR5	Increased European Policy Impact	Other	BPIE	Policy advocacy and roadmap deployment; support to EPBD, CPR, and DPP initiatives
IR6	User-centric Interfaces & Social Inclusion Playbook	Knowledge	Leap Forward	Toolkit for DBL designers; public access via project website; inputs for future EU-funded digital services
IR7	New Innovative IT-related Innovation Approaches	Product & Application	ACA	Commercial services around Data Mesh platforms; enabling infrastructure for DBLs
IR8	Improved Information & Assistance to Homeowners	Product & Application	TM	Public engagement through integrated advice platforms; potential commercial rollout with local governments

Table 4 – Overview of Demo-Blog exploitable results

3.3 DBL's business case factsheets

A central pillar of the Demo-BLog exploitation strategy is the structured development and refinement of business models for each of the Digital Building Logbooks (DBLs) and their associated Exploitable Results (ERs). The objective is twofold: to enable individual and joint exploitation by the DBL owners, and to establish replicable models that support future uptake across Europe. For this purpose, business case factsheets are being developed. They aim to convince decision makers and market players to embrace opportunities offered by DBLs. This helps indicate the bankability, financing mechanisms and ROI scenarios for relevant stakeholders.

The factsheets have been developed following a five-step process involving a combination of top-down frameworks and bottom-up stakeholder input.

First, the business models and value propositions of the DBLs were mapped out using the business model canvas. Special focus was given to value co-creation with end users (e.g. municipalities, homeowners) and how public funding and partnerships impact monetization.

Next step was to map the DBLs business ecosystems using a standardized template, supported by visuals such as stakeholder relationship diagrams and funding flows. This was done in an internal workshop which allowed peer review and benchmarking across pilots, revealing critical differences and synergies.

Based on workshop inputs and factsheet data, the DBLs were clustered into key governance categories:

- Publicly operated (e.g., Woningpas – fully government-backed)
- Association-led (e.g., CLEA – developed by a non-profit but aiming for commercial exploitation)
- Privately managed (e.g., Chimni – B2C logbook with proprietary revenue strategy)
- Hybrid PPP models (e.g., CIRDAX – combining government infrastructure with private service layers)

Each category was associated with distinct financial realities, market access channels, and policy levers.

Financial data including CAPEX/OPEX, monetizable services, projected users, and pricing models, was collected. Although the quality of the responses was mixed, it provided a baseline for evaluating economic viability and fed into the creation of draft business case factsheets

Finally, the collected data has been turned into draft factsheets, each a 3-page concise narrative aimed at decision-makers. These factsheets are structured to facilitate partner discussions with investors, municipalities, policy authorities, or venture accelerators.

A publishable version of the factsheet will be delivered in the second half of 2025.

The next section shows the key findings across the demonstrated use cases.

CLEA (France) | Semi-public, commercially ambitious

- **Business model**: B2B sales (real estate developers), B2C freemium for individual homeowners.
- **Revenue streams**: Platform licensing, upselling renovation advice modules, integration with smart meter data.
- **Challenges**: Fragmented renovation ecosystem, data ownership concerns, uneven user uptake in B2B.
- **Opportunities**: Partnerships with HVAC manufacturers and retail distributors of renovation materials

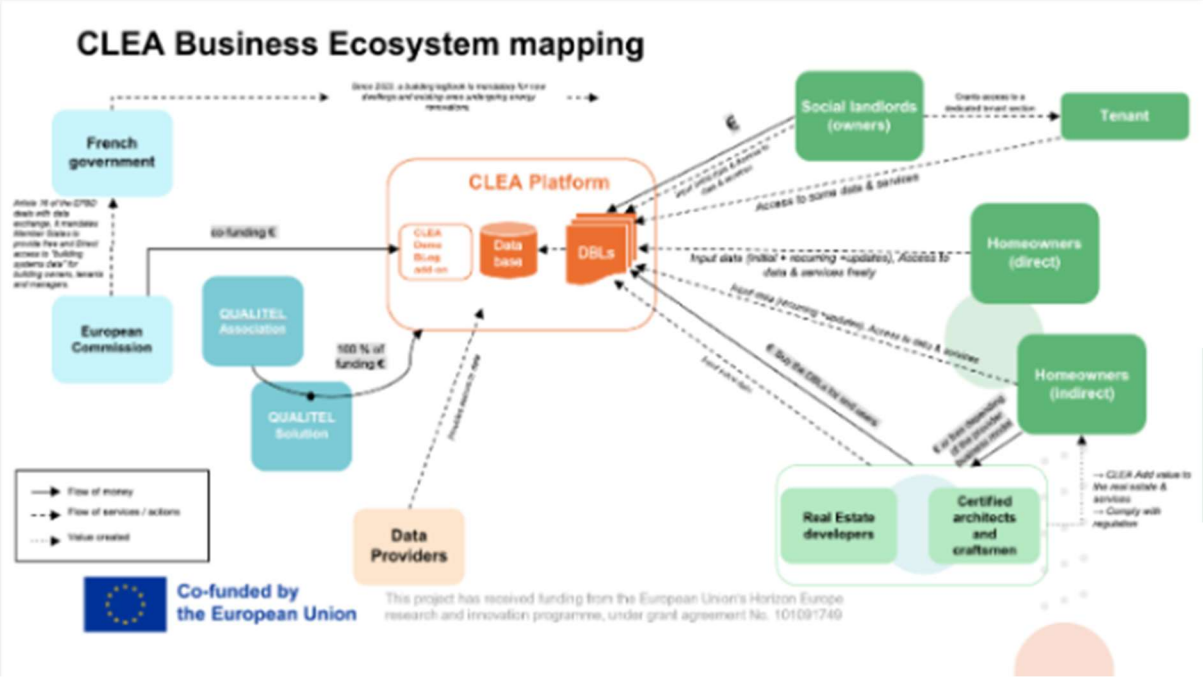

Figure 3 - CLEA business ecosystem

Chimni (UK) – Private logbook with retrofit integration

- **Business model**: Freemium logbook with premium renovation advice subscriptions and API access.
- **Key value proposition**: Seamless retrofit planning tool linked to national EPC databases.
- **Stakeholder roles**: EST, TrustMark, Scottish Government, RLBA.
- **Pathway**: Licensing model to other private DBL providers via RLBA; potential integration in UK one-stop-shop programs

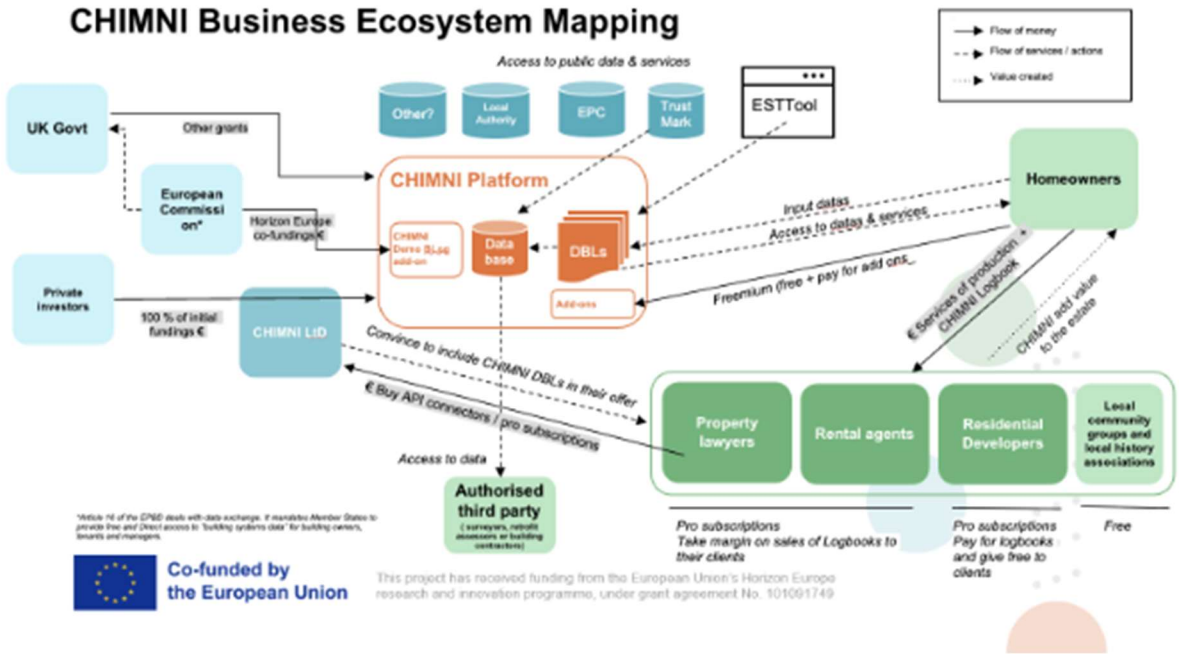

Figure 4 - Chimni business ecosystem

Woningpas (Belgium) – Government-owned, policy-aligned

- **Business model**: Public service platform (no direct revenue); value via public sector efficiency.
- **Recent expansion**: Group purchase functionality for heat pumps and solar panels across 94 cities.
- **Exploitation strategy**: Support from energy cooperatives; regional scale-up; potential replication in other EU states.
- **Value challenge**: Monetization difficult—non-financial KPIs like uptake and behavioural change are key.

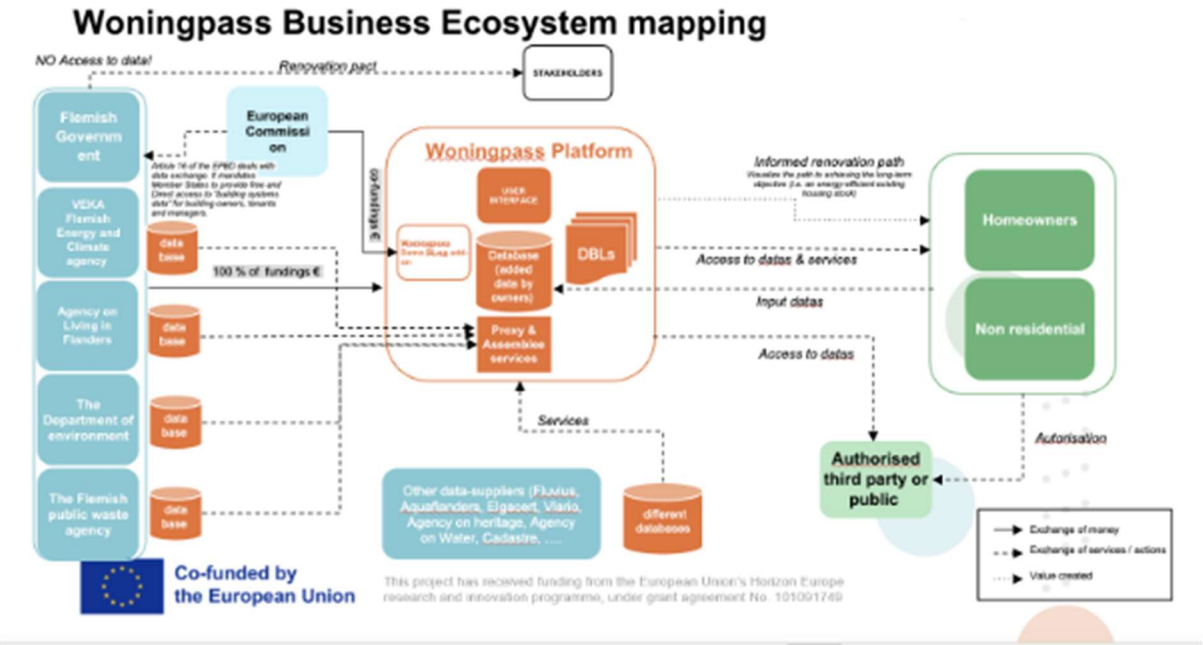

Figure 5 - Woningpas business ecosystem

CIRDAX (Belgium/Netherlands) – Marketplace for circular construction

- **Business model**: Multi-sided platform (suppliers and architects).
- **Revenue model**: Transaction fees, data services, CO_2-rights integration, potential blockchain smart contracts.
- **Innovation**: Solves material reuse transactions via stakeholder-defined requirements, blockchain-based material passports.
- **Status**: Stakeholder Suite module fully developed; exploitation dependent on regional policy support and reuse ecosystem maturity

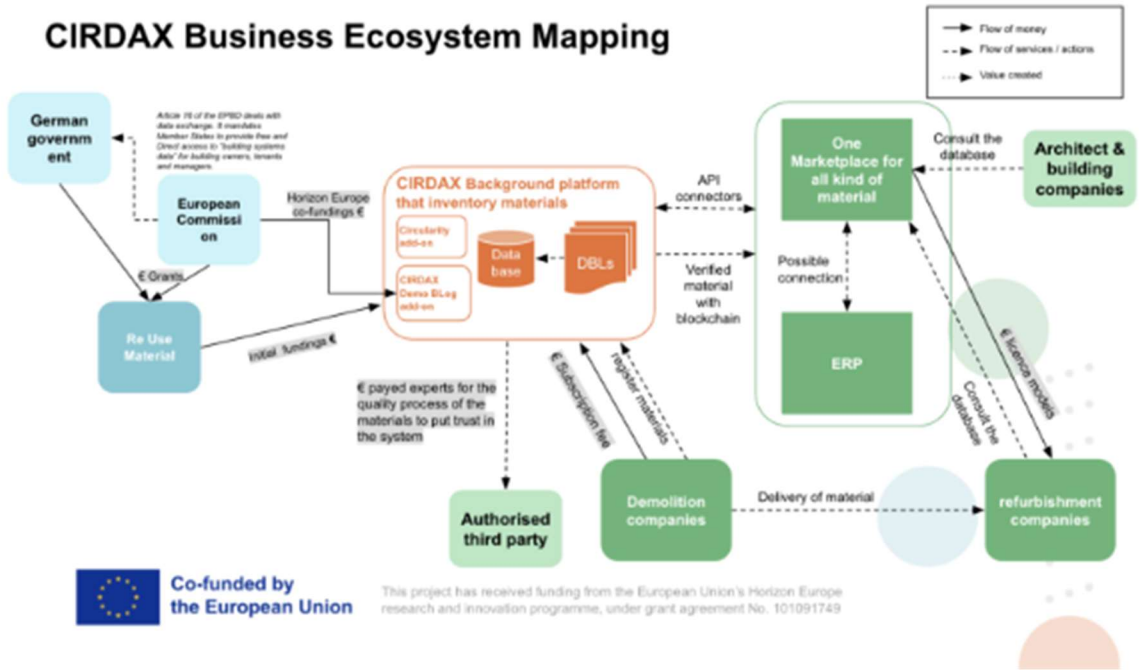

Figure 6 - CIRDAX business ecosystem

In April 2025, a first draft of the business case factsheets was developed for four of the pilots. These drafts integrate: (1) Business model ecosystem mapping (2) Financial KPI factsheets (3) Exploitable Results (ERs) factsheets.

A publishable version of the factsheets will be available in the second half of 2025.

4. Communications and dissemination activities timeline

1st half of the project		2023													2024												
Communications actions		J	F	M	A	M	J	J	A	S	O	N	D		J	F	M	A	M	J	J	A	S	O	N	D	
Comms	Project identity			D																							
	Promotional material (results WP1 +WP3)																			D1.6							
	Website						D																				
	Social media																										
	Multi-channel digital outreach campaigns																										
	Newsletters																										
	Promotional films							D									D			D			D				
	Publications (public-facing deliverables																			D1.6						D1.7	
Events	AB meetings (tbc)																										
	Workshops at the Sustainable Places annual conference																										
	Event at EUSEW																										

2nd half of the project		**2025**												**2026**											
Communications actions		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Comms	Project identity																								
	Promotional material (results WP1 +WP3)												D3.3												
	Website																								
	Social media																								
	Multi-channel digital outreach campaigns																								
	Newsletters																								
	Targeted mailings to policymakers at EC and EP																								
	Promotional films																								
	Participation in podcasts																								
	3 press releases																								
	Publications							T5.3	D4.2				D4.4						D4.5						D3.4
Events	AB meetings																								

Sectorial dissemination webinars (6-8)[1]					X2																			
Local dissemination events per demo																								
Workshops at the Sustainable Places annual conference																								
Event at EUSEW																								
Final conference																								

Table 5 – Gantt chat of communications and dissemination activities

[1] In November 2024, BPIE hosted an in-person event related to the Policy Factsheet which is being considered as a webinar

Annex 1 - Updated target audiences and key messages

1.1 Target audiences and key messages

BPIE has identified multiple target audiences, grouped them and linked them to specific messages that explain the value and benefits of DBLs. The table below is an update to version in D5.2 which details audience groups and messages.

Target group	Key messages
Property owners (residential and commercial)	• Offers greater value preservation, which could lead to higher yields and avoid overlooking lingering maintenance issues or defects. • Increased asset performance during maintenance or refurbishment through better planned maintenance and renovation works. • Supports transaction due diligence, provides better security and guarantees during the transaction process. • More information and trust, thanks to proper documentation and transparency. • Potential increase of asset value, as a result of proper documentation and transparency, and adaptability and transformation capacity towards circular economy.

Construction companies, construction product manufacturers, designers and architects, facility managers and technology providers	• Encourages circularity with a materials passport, when for example dismantling a building, improves traceability of maintenance, damage and repair of products, etc. • Innovative business models and value definition such as the leasing of construction materials or building elements and improved traceability of materials and chemical substances. • Increases asset performance during maintenance or refurbishing, thanks to better facility/asset/portfolio management enabling better planning or, for example, more design information available.
National and local public authorities (municipalities, governments, etc.)	• Research and data analysis support, to enable better policy, planning and development of incentives for long-term milestones, gives access to reliable data to monitor climate targets implementation and facilitates smart energy reduction strategies.
Utilities	• Facilitates smart energy use and energy demand reduction strategies by better understanding consumer profiles, new business models, such as energy efficiency services and district approaches.
Investors and lenders (banks, etc.)	• Fewer risks thanks to proper documentation and transparency, which can lower insurance premiums. • Potential increase of asset value as a result of proper documentation and transparency, and adaptability and transformation capacity towards circular economy. • Research and data analysis support, which can help follow up of mandatory refurbishment actions to meet climate change objectives or support on regulatory reporting (climate risks). • Simplify and streamline alignment with EU taxonomy, ESG and mortgage portfolio reporting requirements
Real estate service providers	• Streamlined and more secure transactions, more accurate valuations, efficient asset and portfolio management and reporting
Researchers	• Research and data analysis support, for monitoring climate targets, develop a more accurate understanding about the building stock and improved/validated building stock models.

EU policymakers (EC and Parliament), multipliers and the general public	• Encourages circularity with a materials passport and improves traceability. • Research and data analysis support, by enabling development of better policy design, incentives and monitoring of long-term milestones, and gives access to reliable building data linked to climate targets.

Table 6 – Target audiences and key messages

1.2 Relevant X/Twitter & LinkedIn accounts

PARTNERS			PILOTS		
Name	**X**	**LinkedIn**	**Country**	**X**	**LinkedIn**
Energy Saving Trust	@EnergySvgTrust	https://www.linkedin.com/company/energy-saving-trust/	FRANCE	@groupeQUALITEL **<< inactive since 2023**	https://www.linkedin.com/company/groupe-qualitel/
TrustMark	@TrustMarkUK	https://www.linkedin.com/company/trustmark/	NETHERLANDS	@cirdax @simonduindam1	https://www.linkedin.com/company/cirdax/
CSTB	@cstb_fr	https://www.linkedin.com/company/cstb/	BELGIUM	@VEKA_Vlaanderen @Tine_VEA	https://www.linkedin.com/company/energiesparenbe/
Re Use Materials	@ReUseMaterial **<< inactive since 2014**	https://www.linkedin.com/company/re-use-materials-b-v-/	UK	@EnergySvgTrust	https://www.linkedin.com/company/energy-saving-trust/
Leap forward	@leapforward_grp **<< inactive since 2021**	https://www.linkedin.com/company/leapforward/	GERMANY	-	https://www.linkedin.com/company/chillservices/

R2M Solution	@R2MSolution	https://www.linkedin.com/company/r2m-solution/			
ACA Group	@acagroup_be **<< no longer active, now on Bluesky**	https://www.linkedin.com/company/the-aca-group/			
VITO	@VITObelgium **<< inactive since end 2024**	https://www.linkedin.com/company/vito/			
TU Delft	@tudelft @urbanenergytud	https://www.linkedin.com/company/tu-delft-urban-energy-platform/ https://www.linkedin.com/in/henk-visscher-8ab80310/			
BPIE	@BPIE_eu **<< no longer active, now on Bluesky**	https://www.linkedin.com/company/buildings-performance-institute-europe-bpie			

Influencers/Amplifiers			**EC accounts**		
Name	**X**	**LinkedIn**	**Name**	**X**	**LinkedIn**
European Federation of Agencies and Regions for Energy and the Environment	@Fedarene	https://www.linkedin.com/company/fedarene/	European Research Executive Agency	@REA_research	-
Fit for 55 - Explained	@fitfor55info	-	Marie Slodowska Curie Actions	@MSCActions	-
Head of Media and Campaigns @energycities	@AdrianHiel	https://www.linkedin.com/in/adrianhiel/	Directorate-General for Energy #EUGreenDeal #REPowerEUWe	@Energy4Europe	https://www.linkedin.com/showcase/eu-energy/

The European learning community for future-proof cities	@energycities	https://www.linkedin.com/company/energy-cities/	European Climate, Infrastructure & Environment Executive Agency #CINEA_EU #EUGreenDeal	@cinea_eu	https://www.linkedin.com/company/cinea-european-climate-infrastructure-environment-executive-agency/
A Cluster dedicated to "Intelligent Solutions For Zero & Positive Energy Buildings" Services: R&D, Innovation Management, Training, Ecosystem Development	@IsZEBCluster	https://www.linkedin.com/company/iszeb/	We fund #H2020 #HorizonEU research & innovation for a greener Europe and a healthy planet for all l Official account by EC and REA	@EUgreenresarch	
The #information and #networking place for professionals in the #sustainable #construction sector	@C21_Int	https://www.linkedin.com/company/construction21-international/	Official account of DG Research & Innovation @EU_Commission, managing @HorizonEU & implementing the EU Commission's R&I strategy	@EUScienceInnov	https://www.linkedin.com/showcase/european-commission-joint-research-centre/

Beating the drum across Europe to urge politicians to take action to improve energy efficiency in buildings	@RenovateEurope	https://www.linkedin.com/in/renovate-europe-84325b198/	Official DG Research & Innovation account for EU's #HorizonEU research & innovation programme	@HorizonEU	-
The European portal for #EnergyEfficiency in #buildings. #EPBD #nZEB An initiative of the EC	@EU_BUILDUP	https://www.linkedin.com/company/eu_build-up/			
Horizon Results Booster	@HorizonBooster	https://www.linkedin.com/company/horizon-results-booster-research-dissemination-exploitation-services/			
REVOLVE	@RevolveMediaCo	https://www.linkedin.com/company/revolve-group			

Sustainable energy news from CINEA	@cleanenergy_eu	https://www.linkedin.com/company/cinea-european-climate-infrastructure-environment-executive-agency/			
Business Insider: Science What you want to know about science	@insiderscience	https://www.linkedin.com/company/businessinsider/			

Relevant Horizon projects					
Name & description	**Twitter handle**	**LinkedIn page**	**Name & description**	**Twitter handle**	**LinkedIn page**
Cool Life Project -Addressing the need for #energyefficient solutions to the EU's rising demand for cooling in buildings	@CoolLIFE_EU	-	#H2020 funded project aiming to develop software & hardware packages to smart up buildings in Europe	@CollectiefP	https://www.linkedin.com/company/collectief-project/

e-SAFE is Horizon2020 project which aims to develop #Energy and Seismic Affordable #renovation solutions	@eSAFEbuildings	-	Smart European Energy Performance Assessment & Certification – Next generation building energy rating	@H2020ePANACEA	https://www.linkedin.com/company/h2020epanacea/
Advanced manufacturing of bio-based products for urban outdoor applications through innovative characterization, digital technologies and circular approach.	@AmbianceEu	-	Integrating Building Renovation Passports into Energy Performance Certification schemes for a decarbonised building stock. Funded by H2020	@H2020iBRoad2EPC	https://www.linkedin.com/company/h2020ibroad2epc/
HorizonEU Project | INdustrialised and PErsonalised #Renovation for #Sustainable societies #buildings #energyefficiency #BIM	@INPERSO_EU	https://www.linkedin.com/in/inperso-project-90436b252/	The BUILDCHAIN project will design and develop its own Digital Building Logbook solution for the integration of building data and knowledge, and the inclusion of new applications and functionalities dealing with integrated information, efficiency, circularity and transparency to improve the building stock, facilitate informed decision making and its validation.	@BUILDCHAIN_HE	https://www.linkedin.com/company/buildchain-he/

#EU funded #H2020 project that promotes #energyefficiency by investigating #behaviouralbias of individuals' decision making in energy consumption.	@EvidentH2020	-	oPEN LAB is a H2020 funded project aiming to identify commercially viable & replicable solutions for #positiveenergy neighbourhoods	@oPENLab_project	https://www.linkedin.com/company/openlab-project/
a project that offers a paradigm shift in building energy efficiency by utilising IoT big data	@iBECOME_EU	-	openDBL is A Horizon2020 project that brings 13 European partners together to digitalize the building industry	@opendbl	https://www.linkedin.com/company/opendbl/
Innovations to reduce and reuse waste in the European #ConstructionIndustry Funded by HorizonEU	@ReincarnateEU	https://www.linkedin.com/company/reincarnate-eu/	CHRONICLE is an EU-funded research and innovation project developing building performance digitalisation and dynamic logbooks for future value-driven services.	@CHRONICLEeu	https://www.linkedin.com/company/chronicle-europe/

H2020 project deploying augmented intelligence solutions to enable optimised energy consumption in EU buildings.	@AutoDAN_Project	https://www.linkedin.com/company/auto-dan-project/	Making the #constructionindustry efficient, reliable & safe with #DigitalTwin Tech. H2020	@AshvinH2020	https://www.linkedin.com/company/ashvin-h2020/
A reference big data platform implementation and AI analytics toolkit toward innovative data sharing-driven energy service ecosystems for the building sector	@BeyondH2020	https://www.linkedin.com/company/beyond-project-h2020/	RECONMATIC is a #HorizonEurope Research & Innovation Action project for sustainable construction & demolition waste management	@reconmatic	https://www.linkedin.com/company/reconmatic/
RECONMATIC is a #HorizonEurope Research & Innovation Action project for sustainable construction & demolition waste management	@reconmatic	https://www.linkedin.com/company/reconmatic/	DISCOVER is a project funded by the Horizon Europe Programme focused on revolutionizing the construction and demolition industry by developing an advanced system for the autonomous, synchronous, and continuous identification and analysis of materials in end-of-life built environments	-	https://www.linkedin.com/company/discover-horizon-project/
The BIO4EEB project aims to develop a portfolio of bio-based insulation solutions in the form of Posidonia panels and fibers, complex polyelectrolytes, PLA and bio-	@BIO4EEB	https://www.linkedin.com/company/bio4eeb/	The MOBICCON-PRO project will introduce and demonstrate a systemic, circular and mobile solution in the South-East Europe (SEE) region to improve the recovery and recycling of	-	https://www.linkedin.com/company/mobiccon-pro/

polyurethane, bio-based windows and finally a pre-fabricated façade element which aggregates these different materials			Construction and Demolition Waste (CDW).		
LIAISON provides knowledge and technical solutions to limit transport infrastructures (TI) emissions, both caused by transport infrastructure itself and to which transport infrastructure contributes.	-	https://www.linkedin.com/company/liaison-eu-project/	The MEZeroE project aims to contribute to the next generation of healthy nearly-zero-energy buildings (nZEB).	-	https://www.linkedin.com/company/mezeroe/
SUM4Re is pioneering sustainable construction by creating material banks from the built environment. Combining urban mining, automated on-site data acquisition, and advanced material identification, we promote circular construction practices.	@SUM4Re_EU	https://www.linkedin.com/company/mezeroe/			

Table 7 – Relevant X & LinkedIn accounts for tagging on social media

Annex 2 - Communication & dissemination outputs

In D5.1 and D5.2, the Demo-BLog project established and reported the foundational communication tools. Annex 2 lists Demo-BLog's recent communication and dissemination activities (since D5.2), highlighting the project's commitment to stakeholder engagement.

Videos and webinar recordings

Demo-BLog videos have served as both outreach and educational tools, helping to visualise pilot functionalities, share user experiences, and document the impact of DBLs.

Title of Video	Lead	Link
Testing data collection at the DreamHûs of TUDelft	TUD	Link
Interview with the 5 DBL pilot leaders	R2M	Link
Introducing the 5 DBLs in Demo-BLog	R2M	Link
What is Demo-BLog about?	R2M	Link
Webinar recording: DiCE Lab and Demo-BLog webinar on DBLs	TUD	Link
Webinar recording: DBLs – Unlocking Their Real-World Value	R2M	Link
Webinar recording: DBLs for a Circular and Affordable Built Environment	R2M	Link

Table 8 – Demo-BLog videos and webinar recordings

Infographics

This newly designed infographic, developed by BPIE, TUD, CSTB, and R2M, provides a visually engaging summary of the four new features (also known as 'functionalities') being developed in the five DBLs that are part of Demo-BLog. It has been published on the website and shared via social media (LinkedIn, X), and will also be shared in the next newsletter.

External events and conferences

In addition to major European conferences, Demo-BLog partners actively organised and participated in a series of smaller-scale national and regional events. These included stakeholder workshops, local authority meetings, and sector forums, which facilitated practical dialogue, piloting, and feedback gathering for the ongoing development of DBLs.

Date	Event / Workshop	Lead(s)	Location	Role	Link

Organised events					
24 Sep 2024	Workshop: Digital Building Logbooks and Permit Processes	TUD	Luxembourg	Organised workshop at SP2024	Link
24 Sep 2024	Workshop: Creating Efficient and Impactful Digital Building Logbooks	TUD	Luxembourg	Organised workshop at SP2024	Link
Event contributions					
15–18 Jan 2024	Belgian Renovation Week	VEKA, BPIE	Brussels, Belgium	Stakeholder sessions and policy roundtables on digital logbooks for renovation	News
17 Apr 2024	4th Building Digital Twin International Congress	TUD	Barcelona, Spain	Pilot presentation on digital logbook advancements at BDTIC	Video
21 May 2024	CONSTRUMAT 2024	R2M, BPIE	Barcelona, Spain	B4P booth, demo, outreach	Link
11–13 Jun 2024	EUSEW 2024	R2M, TUD	Brussels, Belgium	Shared stand, policy input	Link
25 Jun 2024	Les Assises du Logement	Qualitel	Paris, France	Lecture to French policymakers and housing sector on user-centric renovation advice	Link
21 May 2024	DiCE Lab Seminar	TUD	Zurich, Switzerland	Seminar and panel speech at ETH Zurich	Link

17 May 2024	EFL Spring Conference	TUD	Turin, Italy	Keynote presentation on DBLs for EU housing decarbonisation	News
3–4 Jun 2024	EERA JPSC Summer Event	TUD	Prague/ Brno, Czech Republic	Seminar and roundtable on digital tools for energy transition in buildings	News
25 Sep 2024	Sustainable Places 2024	TUD	Luxembourg	Paper presentation: Data collection techniques and technologies for digital building logbooks	Link

Table 9 – External events and conferences attended by Demo-BLog

Newsletters

The Spring 2025 newsletter was distributed to all Demo-BLog subscribers and published via the project website and LinkedIn. This issue announced the May 2025 webinar series, introduced the new pilots infographic, and featured updates on pilot progress and recent event participations. The newsletter supported ongoing stakeholder engagement and provided a comprehensive update on Demo-BLog's latest activities.

Podcasts

Leap Forward and TUD were featured in the Service Design Podcast episode "Design for the Energy Transition," where they discussed Demo-BLog's co-creative methodology, digital innovation, and the role of inclusive design in digital building logbooks and the energy transition. The episode highlighted project use cases and stakeholder engagement strategies, reaching new audiences in the design and innovation community. The episode is available via streaming platforms and LinkedIn at https://www.linkedin.com/posts/service-design-podcast_demo-designresearch-energytransition-activity-7335631000762290176-NhZx.

Annex 3 – Initial results PESTEL Analysis

A first PESTEL analysis at national level has been performed in 2024. Below a summary of the result is presented.

Political

- **EU-wide alignment**: The European Green Deal, EPBD revisions, and Circular Economy Action Plan strongly encourage DBL adoption. These frameworks promote transparency, energy performance monitoring, and circularity in buildings.
- **National support**: All pilot countries (France, UK, Germany, Belgium, Netherlands) have initiated national or regional programs promoting DBLs (e.g., France's PREB, UK's Heat and Buildings Strategy, Flanders' Renovation Pact, Germany's iSFP).
- **Variability**: While France and Belgium have mandates (e.g., France's *Carnet d'information du logement* since Jan 2023), countries like the UK and the Netherlands rely more on voluntary schemes, with political momentum building toward mandates.

Economic

- **Cost sensitivity**: DBLs are frequently viewed as costly to implement and maintain, especially in countries without robust public subsidies. This affects willingness to pay among homeowners and SMEs.
- **Incentive mechanisms**: France, Belgium (Flanders), and Germany offer substantial subsidies for renovation and digital tools. The UK and Netherlands are more limited, focusing on innovation and circular economy financing.
- **Market opportunity**: As building renovation accelerates, DBLs are increasingly seen as enablers for green finance, energy savings verification, and new business models (e.g., logbook-linked retrofitting services or material resale platforms).

Social

- **Awareness gaps**: Low public awareness and understanding of DBLs remain a barrier, particularly among older homeowners and small landlords.
- **Shifting perceptions**: Co-design and social inclusion strategies (e.g., Demo-BLog's Playbook) have helped improve perception, especially in pilots that emphasized community engagement (e.g., Woningpas, CLEA).
- **Generational shifts**: Younger professionals and homeowners are more open to digital tools, especially if linked to sustainability, energy savings, or ease of compliance.

Technological

- **Infrastructure strength**: All pilot countries have solid digital infrastructure, with widespread BIM use, growing IoT integration, and national building databases (e.g., BDNB in France, BD in Belgium).

- **Innovation drivers**: Several pilots (Chimni, CIRDAX) explored frontier tech like blockchain, data mesh (ACA), and SOLID pods (VITO) to manage interoperability, privacy, and access control.
- **Barriers**: Persistent issues include lack of interoperability, fragmented data standards, and cybersecurity risks in handling sensitive building and user data.

Environmental

- **Climate policy alignment**: DBLs are increasingly positioned as key enablers for decarbonisation (e.g., tracking EPCs, renovation passports, material reuse, LCA reporting).
- **Circular economy integration**: Countries like the Netherlands and Belgium (Flanders) are piloting circular construction data flows via DBLs (e.g., Madaster, CIRDAX).
- **Demand-Side Push**: Stakeholders are beginning to demand DBL-linked functionalities to improve energy tracking, optimize retrofits, and contribute to green building certification.

Legal

- **Data privacy and ownership**: GDPR compliance is essential, with countries like Germany and Belgium advancing clear models for consent and access. Projects like SOLID support user-controlled data pods.
- **Regulatory frameworks**: France and Belgium have passed legislation mandating DBLs or BRPs. Germany is integrating DBLs into energy audit schemes. The UK lacks a dedicated law but uses standards like TM31 and Home Reports (Scotland).
- **Standardization momentum**: At EU level, there is increasing push for harmonized DBL structures, especially to enable integration with Smart Readiness Indicators (SRI), EPCs, and Digital Product Passports.

Annex 4 – Exploitable Results

This annex provides a status overview of the exploitable results of the DemoBLog project as per M24.

ER1 - Enhanced UK Logbook			
ER Type	**Product/Application**	**ER Manager**	**EST**
TRL before	**2**	**Expected TRL after**	**6**
Related WP	**WP1**	**Related deliverable**	**D1.7**

Short description:

Approximately 250,000 homes in the UK have a DBL provided by 7 different commercial parties. Those parties, at the UK government's instigation, have together recently formed the Residential Logbook Association (RLBA) to bring the DBLs to a common standard and promote data interoperability. Currently, UK DBLs have 4 functions: a repository for service information; a way to manage building and maintenance work; a simple way to display legal / statutory information required of landlords; and a single source of information to facilitate the buying and selling of the property. Logbook providers are interested in expanding the current functionality to include renovation plans and energy efficiency advice.

Demo-BLog will develop a user-centric automatic renovation module. This module expands the DBL functionality with automated renovation advice and building renovation plan, which will support householders with making renovation decisions and investments. The functionality will enable DBL providers to share data and form a range of renovation advice services.

Innovation:

The delivery of early-stage automated renovation advice and building renovation plan functionality within a DBL, will support householders to benefit from governmental one-stop-shop renovation support. The functionality, involving open APIs, will enable DBL providers to share data and form a range of renovation advice services. As such, and with a strong focus on UX and customer journey, the functionality will lead to a significant increase in the renovation rate.

Supporting the integration of public sector support with commercial DBLs will be new and will drive the uptake of DBLs. Improved quality and completeness of exiting private sector logbooks will also help build the market.

Development status M18:

During M13 to M14 Energy Saving Trust, Solstice Associates and Trustmark agreed the data flow between the databases, the advice tool and the logbook and used this to develop the API specifications. During M15 to M17, Solstice Associates and Trustmark developed a set of APIs to draw data from the Scottish EPC register and the Trustmark Data Warehouse into the renovation advice tool. In M15 Energy Saving Trust, Trustmark and Solstice began the

collaboration with Leap Forward to establish the user journey and develop a prototype. Through a series of workshops, we have now established the primary user journey and in M18 Leap forward will produce a prototype that will be tested with a group of six users (also in M18). After collecting the user feedback, the specification of the enhanced logbook tool will be finalised and the software development will begin.

Exploitation vision:

The intended paths for the exploitation of the enhanced UK Logbook include enabling subsequent technologies, open distribution, licensing to a third party, and utilisation by EST to offer free energy advice to the public. The objective for the first two years post-project is to expand the adoption of the enhanced logbook beyond the initial logbook company, with a target of at least three private logbook companies using the enhanced logbook. EST plans to build relationships with logbook providers, share results, raise public awareness about logbook benefits, engage with the Residential Logbook Association (RLBA), and facilitate cost-effective implementation for logbook companies. External partners such as logbook companies, RLBA, government policymakers, social housing providers, private landlords, financing organisations, and other stakeholders will play a crucial role in promoting this tool to support homeowners. Ongoing costs to run the enhanced logbook would need to be recovered, and licensing to the Residential Logbook Association is a potential option. Market mechanisms for the ER will be explored during the Demoblog project.

Pitch for the enhanced Chimni DBL: *"Our building logbook with a functionality that offers renovation advice which draws on data from the Scotland EPC register and the Trustmark Data Warehouse, helps homeowners and private landlords in Scotland who want to reduce the running costs, reduce carbon emissions and improve the comfort of their homes, but don't know what the most effective way of improving the energy performance of their homes is, by giving them tailored recommendations of what measures they can install to increase the energy efficiency of their homes, which are based on specific information about their building and enabling them to make decisions more easily about what improvements to invest in and allowing them to track progress of the renovation work in one easily accessible online portal, unlike other online renovation advice tools that do not use detailed and specific information about the building in order to offer advice and do not offer a platform or system to enable the user to track or update their renovation progress over time."*

Pitch for The API that connects the DBL to the building data source: *"Our API that surfaces data from Scotland's EPC database helps logbook providers and online renovation advice tool providers who want to expand their services to offer renovation advice to homeowners by creating an easy way of accessing building information, generating added value from EPC data in the form of streamlined user journeys and more accurate advice and enabling logbook providers and renovation advice providers to scale up their services and reach more people, unlike current EPC data, which is only available in quarterly Excel downloads and is not designed to be integrated into automated renovation advice tools, resulting in solutions that rely on manual entry by users."*

Intellectual property:

The project will have multiple owners: EST, TrustMark, the logbook company (pending procurement), and the Scottish Government (owner of EPC data). The ER requires access to the logbook company's software and the RLBA Data Hub for integration of EPC/TrustMark data and retrofit advice calculator into the logbook. Approval from the Scottish Government is needed for the EPC register API specification, and TrustMark must provide API access to their Data Warehouse. The ER will be open source, with EST retaining IP rights for the advice tool and the logbook company for their logbook solution.

Market analysis:

The target audience for the tool is homeowners or individuals with decision-making authority over their homes, specifically those interested in making energy upgrades and renovations. Homeowners in the UK face high fuel costs, and many older buildings have low energy efficiency ratings, resulting in discomfort due to cold and damp conditions. The logbook tool aims to provide homeowners with comprehensive information about their homes, including energy advice to reduce energy consumption, improve quality of life, and achieve environmental benefits such as carbon reduction and improved air quality. By integrating data from various sources, the logbook tool simplifies the process of assessing a home's energy efficiency, enables tracking of renovation progress, and has the potential to increase a home's value if energy upgrades are pursued.

More information about other providers of online renovation advice tools who offer services in the UK is requested. Especially how these providers obtain building information.

Exploitation actions:

In M15 Energy Saving Trust hosted two stakeholder workshops, one with UK logbook providers and one with UK providers of digital, automated retrofit advice tools. These two groups are important for the post-project exploitation of the project outputs, because they can use the ER directly, or use the learnings from the UK pilot to develop their own solutions. The objective of the workshops was to gather feedback from industry stakeholders to feed into the development of the enhanced Chimni logbook. We used the workshop to find out what the stakeholder requirements would be if they wanted to integrate a digital advice tool with a DBL. This insight helped us develop the specification of the advice tool and APIs that connect the various databases with the advice tool. The outputs from the two workshops confirmed many of our assumptions about what type of solution would be useful to these stakeholder groups. We were also pleased to see that many UK logbook providers have already started considering integrating renovation advice into their platforms. All stakeholders indicated that they would like to continue the engagement on this topic, and we agreed to host another workshop to share further developments. This ongoing dialogue will provide us with further useful insights that will help ensure that the exploitable results are useful to the logbook industry and digital advice provider in the UK, beyond the lifetime of this project.

Support needs of ER Manager:

None.

ER2 - Augmented CLEA DBL			
ER Type	**Product/Application**	**ER Manager**	**QUAL**
TRL before	**5**	**Expected TRL after**	**7**
Related WP	**WP1**	**Related deliverable**	**?**

Short description:

The CLEA DBL is deployed across 152,000 dwellings: 145,000 (B2B) over entire privately-owned multifamily buildings (mostly new); 7,000 (B2C) on individual dwellings / single-family houses contains core functionalities & features. CLEA has functionalities: general dwelling information (incl. data retrieved from cadastre through API); documents module (minutes of general assemblies, invoices, rules of the condo, etc.); equipment module (user guides for HVAC & devices, maintenance alerts, etc.); news (blog curated by QUAL); energy Associated with document Ref. Ares(2022)8057739 - 22/11/2022 monitoring module (API for French smart meters Linky & GASPAR; algorithm to show energy split per use according to French thermal regulation). The UX can be customised according to the dwelling and the user (e.g. specific interface for the 'Syndic'). CLEA's current utilisation rate when sold via B2B is 28% (against 90% for B2C).

The Result is an extension of the current CLEA DBL that introduces new functionalities and enables new services for their end-users.

Innovation:

Additional functionalities of the CLEA DBL:

- new services to improve energy performance,
- new services 'beyond-energy' (e.g. sustainable product passport, etc.),
- strengthening linkages with external data platforms through APIs (French national buildings database BDNB developed by CSTB; Registre d'immatriculation des copropriétés developed by ANAH, etc.),
- improved data verification and reliability: through blockchain and development of a 'reliability index',
- improved user-friendliness of the DBL through UX design,
- improved accessibility of the DBL in particular for older persons (e.g. content export as a PDF).

Development status at M24:

The development of the module is completed (works simulator with targeted EPC calculation). We are now in a testing phase before launching.

Currently, we have been working on the finalisation of the cost calculator.

Exploitation vision:

Target for the experimentation: 50 single houses. Numbers of CLEA created for "automated renovation module": 1 000 / year (number of scenarios).

Pitch*: "Our automatic renovation advice module helps homeowners who want to improve their home in term of energetic quality (diminution of energetic consumption, reduction of GHGE emissions) by giving advices allowing him to find the best works scenario in term of quality / cost / time (what to do in first, comparison of technical solutions, prices) and Giving advices to find the right professional unlike other solutions who seeks to sell ready-made solutions not necessarily the best for the case".*

Intellectual property:

The ER has one clear owner: Qualitel solution.

The ER requires access to knowledge on quality, characteristics and renovation materials / consumption / IT and data expertise / behaviour of inhabitants / civil engineering for work scenarios.

The IP will be protected by copyright.

Exploitation actions:

The key exploitation strategy involves connecting with companies that carry out energy renovation work or manufacturers of building equipment. A start has been made with contacting this type of stakeholder. Two manufacturers of heating equipment and one B2B distributor of construction materials have been engaged with, resulting in sales leads.

Support needs of ER Manager:

Support is needed for business plan development, establishing partnerships with other SMEs and large corporates.

ER3 - Augmented Woningpas DBL			
ER Type	**Product/Application**	**ER Manager**	**VEKA**
TRL before	**5**	**Expected TRL after**	**7**
Related WP	**WP1**	**Related deliverable**	**D1.2**

Short description:

Woningpas launched in Dec 2018 for residential building-units (single-family house or unit in multi-family building). Automatically available for the building owners (natural persons/companies): 4,000,000 individual building units. The passport will be expanded to all non-residential buildings by the end of 2023. It includes data and status of the dwelling, plot and surroundings: energy (label, renovation roadmap and real energy use), insulation, installations, solar potential, soil, sewage system, water supply, flood sensitivity, building permits, mobility, dwelling quality. Data is linked with external data platforms through APIs and it has a digital safe for attestations, plans, relevant documents with the possibility to update renovation works and a check-tool on dwelling quality. Possibility to share Woningpas (user interface) with third persons and the wider public.

The Woningpas DBL will be upgraded with a functionality to facilitate the participation of citizens in decarbonisation projects (building related) of energy communities.

Innovation:

Enhance energy-communities and a collective approach in the renovation process (with focus on sustainable heating systems, renewable energy, decarbonization) driven by the DBL, sharing data with 3rd parties (private and public) and integrating data from 3rd parties (private and public).

Development status at M24

On June the 11th Woningpas was launched with the new functionality. Eventually the demonstration was launched together with EnergieHuis (energy house), which is a municipal institution or a collaboration between different municipalities that provide information and assistance for energy investments and renovation works, and three energy cooperatives that are active across 94 municipalities in Flanders: Energent based in the East Flanders province, Klimaatpunt based in the Flemish Brabant province and the Pajottenland region, and Campina Energie based in the Antwerp–Kempen region. These cooperations offer group- and neighbourhood scale initiatives concerning heat pumps.

The evaluation of the demonstration is currently ongoing, though changes to the functionality were also analysed and implemented by the end of 2024 (December the 18th). The new update includes the option for a group installation of solar panels. The goal of this update is to add another point of comparison for evaluation which can lead to the better understanding of how homeowners react to the functionality. This expansion is released in collaboration with 6 energy companies: Energent based in the East Flanders province, Klimaatpunt based in the Flemish Brabant province and the Pajottenland region, and Campina Energie based in the Antwerp–Kempen region, ECoOb based in the region of Leuven, Klimaan based in the region of Mechelen and Stroomvloed based in the region of Flemish Ardennes.

Exploitation vision:

We aim to expand the use of the logbook in facilitating the participation of citizens in a collective decarbonization project, and especially in the case of a collective approach on installation of a heating pump. In this project the functionality is demonstrated with 3 energy communities and one energyhouse. Besides this, the functionality is being expanded to the group installation of solar panels, together with 6 energy communities. We hope this demo will inspire other EC's to connect to the logbook and data-exchange and scale up the functionality to Flanders. Maybe it can be interesting on a European level as well.

The exploitation strategy is to:

- Raise awareness among the policy makers on the value that logbooks can bring in facilitating the participation to an EC and so in augmenting the renovation rate.
- Increase the demand of EC to share data on the projects with the logbook. It requires an investment from the EC to set up data exchange as well as it requires investment for the logbook side as well.
- Make it easy for Energy corporations or communities to connect to the logbook at lower cost by for example working on a generic common data exchange.

Intellectual property:

There will be multiple "owners" of the IP. Logbook-owners (OVAM, VEKA, dOMG, Wonen in Vlaanderen) and Energy communities.

Exploitation actions:

The demonstration was released in cooperation with 3 energy cooperations and 1 energyhouse in Flanders that have their working area in 94 cities in Flanders. The demonstration also focuses on type of decarbonisation project: the group purchase of a heating pump.

Besides this, an extra demonstration was added by the end of the year (the group purchase of solar panels) in cooperation with 6 energy cooperations: the group purchase of solar panels.

The demonstration will learn us if a digital building passport can play a role in convincing people to participate in a neighbourhood initiative and facilitate the process. If the result is positive than we can enlarge the scale of the demonstration to other energy-communities in more cities in Flanders and with other neighbourhood-initiatives.

ER5 - Augmented CIRDAX DBL			
ER Type	**Product/Application**	**ER Manager**	**RUM**
TRL before	**7**	**Expected TRL after**	**9**
Related WP	**WP1**	**Related deliverable**	**D1.4**

Short description:

CIRDAX launched in 2016 and is one of 2 most used systems for Building Material Management in the Netherlands. It is used by government organisations (as part of European Programmes, like Digital Deconstruction, Circulaire en Modulaire Woningbouw, RE-USE, SUM4RE and the European Center for Circulair Building and Transformation) to explore the Circular Building agenda and private (real-estate) organisations as a business support module for maintenance and renovation. CIRDAX is a digital materials database which stores all kinds of information on building components and materials. The data in CIRDAX is provided via an inventory of components and materials, partly obtained by 3D-scanning and manual additional services. CIRDAX offers a dashboard with information on building components and materials: incl. market value, CO2-value, removability, etc. CIRDAX is linked to blockchain to provide unchangeable and/or verifiable information on the materials ownership, giving future transactions with materials and liability concerning the (future) use of material a legal framework.

ReUseMaterials plans to create an enhanced two-sided marketplace for secondary materials in Belgium, incorporating CIRDAX, a supply-side database, a demand wizard for architects, and a coordinating marketplace. The project requires resources from the Demo-Blog project and two additional projects, as the funding from Demo-Blog alone is insufficient for

ReUseMaterials to cover all development costs. The completion of this project is anticipated as the culmination of these combined resources.

Innovation:

Enhance a legal and data driven approach in the construction process with focus on circular design by architects and re-application of components and materials driven by the DBL on the Belgium market, sharing data with 3rd parties (private and public) and integrating data from 3rd parties (private and public) through direct integration and/or API's to organise marketplaces for building components and attached CO2-rights, and integration of smart data from new technologies (digital meters, sensors, AI) and possibilities for monitoring.

Development status at M24

The central activities around DBLs regarding the reuse of materials in buildings with the help of the Cirdax DBL are focused on the connection between the owners of these materials in a building and the stakeholders who can determine whether and where these materials will be reused. A connection that can also result in a transaction regarding these materials on a digital marketplace under certain conditions. In the project plan Demo-Blog this is called "the enhanced marketplace for architects", the central goal in which the Cirdax DBL plays an important supporting role, both as a data source for materials (the old version) and as a support tool for stakeholders to define their needs concerning materials, including secondary materials.

An enriched marketplace for the continuous (re)use of materials has a two-way relationship between stakeholders, via the marketplace, as its starting point. It is therefore not the same as a one sided marketplace or webshop where materials from buildings are offered to anonymous buyers. The framework for an enriched marketplace for materials from buildings, in the work on the DBL Cirdax, consists of four distinct elements that form a marketplace framework for secondary materials:

1. The transparent supply of materials from buildings offered by real estate owners (the old version of Cirdax).
2. The demand from stakeholders in the built environment for secondary materials, particularly the demand from the architects (the additional new module in Cirdax).
3. The manner and conditions under which transactions involving secondary materials can be accomplished, including the role of blockchain to ensure the property right on materials (the goal for WP3)
4. The establishment of a (regional) economic order within which transactions involving secondary materials can be organised in a sustainable manner (for which the results of WP2 are necessary, concerning the standardisation requirements of Digital Logbooks).

All four elements are strongly interrelated, because without the supply of secondary materials there will also be no demand for these materials. If the quality of the secondary materials is insufficient, or unknown, then these materials will not be used anyway. The stakeholders suite therefore provides stakeholders like architects and building companies to define their demand for secondary materials, where the supply of possible reusable materials

are provided by Cirdax itself. In this way stakeholders can work on matching demand and supply.

Progress in software development: The new module (the stakeholders suite) is fully developed. Its functionalities regarding the role for specifying needs for secondary materials will be tested in the workshops for architects and builders. Technically the extra module works fine, the way the functionalities will be used in the scope of the enhanced marketplace by the stakeholders is to be explored within the scope of WP 3.

Multi-cycle circularity assessment: The most characteristic challenge of circularity concerns solving the issue of asymmetric information between sellers and buyers of materials from a building. That is, how buyers and sellers in a marketplace can enter a transaction with each other, even if this transaction involving a material is far in the future. The problem of asymmetric information is also called the Lemons Problem after Akerlof (1970).

The issue of asymmetric information when using Cirdax is also called the issue of multi-cycle circularity assessment. That can be translated as follows. As we mentioned in section 2.1, the cycle of a material in the world of circularity starts with the inventory of the quantity and quality of materials in a building. This assessment of the materials is recorded in Cirdax, which serves as a data management system for these materials. The transparency in information about these materials is the first step in the multi-cycle assessment and reduces the issue of information asymmetry on the supply side of materials.

The second test within the materials cycle concerns the design of the need for secondary materials by a future user, such as an architect or construction company. We have analysed the requirements for this in extensive research like described in section 2.2. This user must deal with various aspects surrounding the quality of materials, such as legislation and regulations, quality and suitability of the materials. He or she will assess the needs for secondary materials against the availability and quality of the secondary materials (second assessment). An assessment supported by the Stakeholder suite, which is explained more in detail further on in this paragraph

The match between demand (need) and supply creates a transaction, in which the material is the object of the transaction. But a transaction itself is also part of specific forms of asymmetric information, which often emerges when using the material after the purchase. If a material does not meet the requirements of expectations (the third assessment), then the issue of liability arises. This can also be organized based on the ownership rights that are linked to each material and are visible in the material passport of a material. Because this right of ownership has been created based on a blockchain registration, it is always possible to determine who the former owner was and who must ensure compliance with the (private) contract associated with the delivery of the material. This third assessment completes the cycle or cycle of a material and the reuse of this material.

In summary: the multi-cycle circularity assessment of a material has three parts: 1. inventory, 2. requirements formation and 3. the (enforceable) transaction. All three components are shaped by Cirdax (1.), the Stakeholder Suite (2.) and the use of blockchain (3.) and come together in a digital marketplace.

Blockchain registrations are already an existing part of Cirdax and are not an introduction of new technology. However, it is true that Blockchain technology, through its functionality to establish property rights, makes transactions on a digital marketplace possible. In addition,

she ensures that the buyer (architect and/or construction company) and sellers can make binding and enforceable agreements with each other, which also gives the stakeholder suite its legal foundation.

The stakeholders suite (the new model): The stakeholders suite is an integration of several separate modules of the Dynablogs-background-architecture. A systems database architecture that also provides the architecture for the original Cirdax-system. The several separate modules that together form the Stakeholders or Demand-suite function is a support system for users on the demand side for secondary materials.

In the stakeholder suite, an architect or construction company can work with a CO2- or Euro-budget, so that he or she can make an example calculation of which materials or which environmental impact fits within the boundaries of his or her project.

The stakeholder suite also provides various support options for projects, so that the manageability of a project is promoted. Opportunity and collaboration are in fact components of an enriched marketplace itself, because they shape the transaction between suppliers and demanders. For the training purposes (Capacity) within Demo-Blog, the marketplace will be simulated partly based on the instrumental possibilities of both Cirdax as a supply of secondary materials and the stakeholder suite as an unlocker and supporter of the needs for (secondary) materials.

The basis of the Stakeholder Suite is created by the project management possibilities offered by Cirdax and the underlying database system Dynabloqs, as shown in the image below. On the left side are all possibilities, which will be further set up in the coming months with concrete project information, so that for example a CO2 or Euro budget can be used for secondary materials and the reservation of materials.

Given the market for architects in Belgium, we need to align with Belgian standards for certain elements. This applies to the CO2 calculations that are based on the ICE database in Cirdax, but for which the Totem database is the standard in Belgium. The CO2 calculations in the Stakeholder Suite need to be adjusted accordingly. We then look at which other support tools should be added to the support processes for a stakeholder per demonstration/workshop. Which then become part of his or her “suite”.

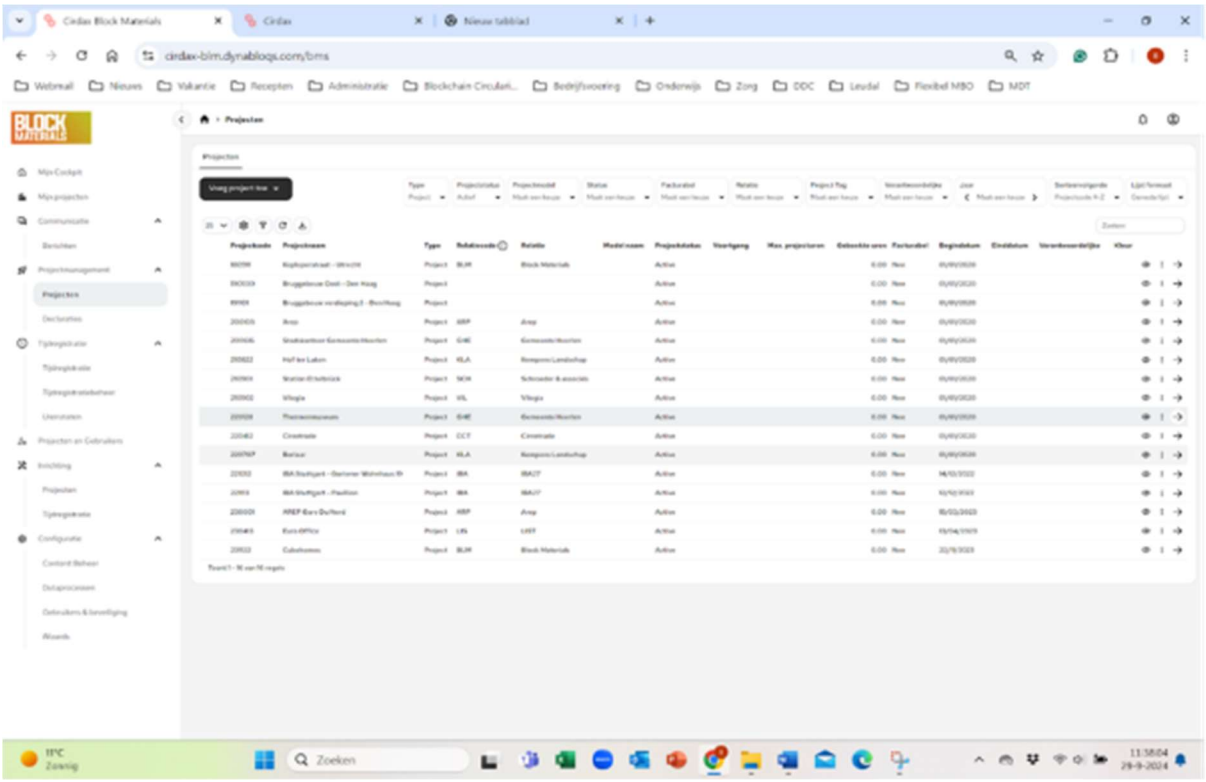

Figure 7 - Menu structure of the Stakeholders suite

All desired possible calculations from a stakeholder perspective, particularly those for architects, will find a place in this workplace support environment. The different workshops and demonstrations will further shape which indicators, tools etc. will be added. In doing so, the needs of the professionals in the construction sector will be explicitly considered in comparison with the original wishes of the project, such as: design for adaptability/renovation; design for disassembly, reuse and recycling; versatility indicator of a building; the indicator for the convertibility of buildings, the expandability of buildings; and the construction of sliding layers (independence). Some support options can be found in the screenshots of the “stakeholder suite” below.

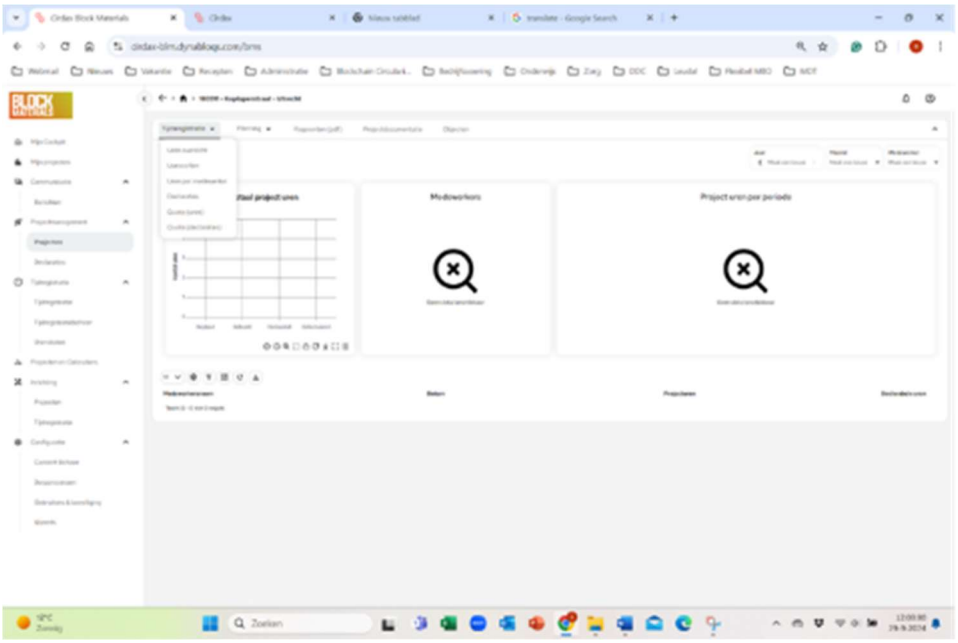

Figure 8 - Support options within the Stakeholder suite I

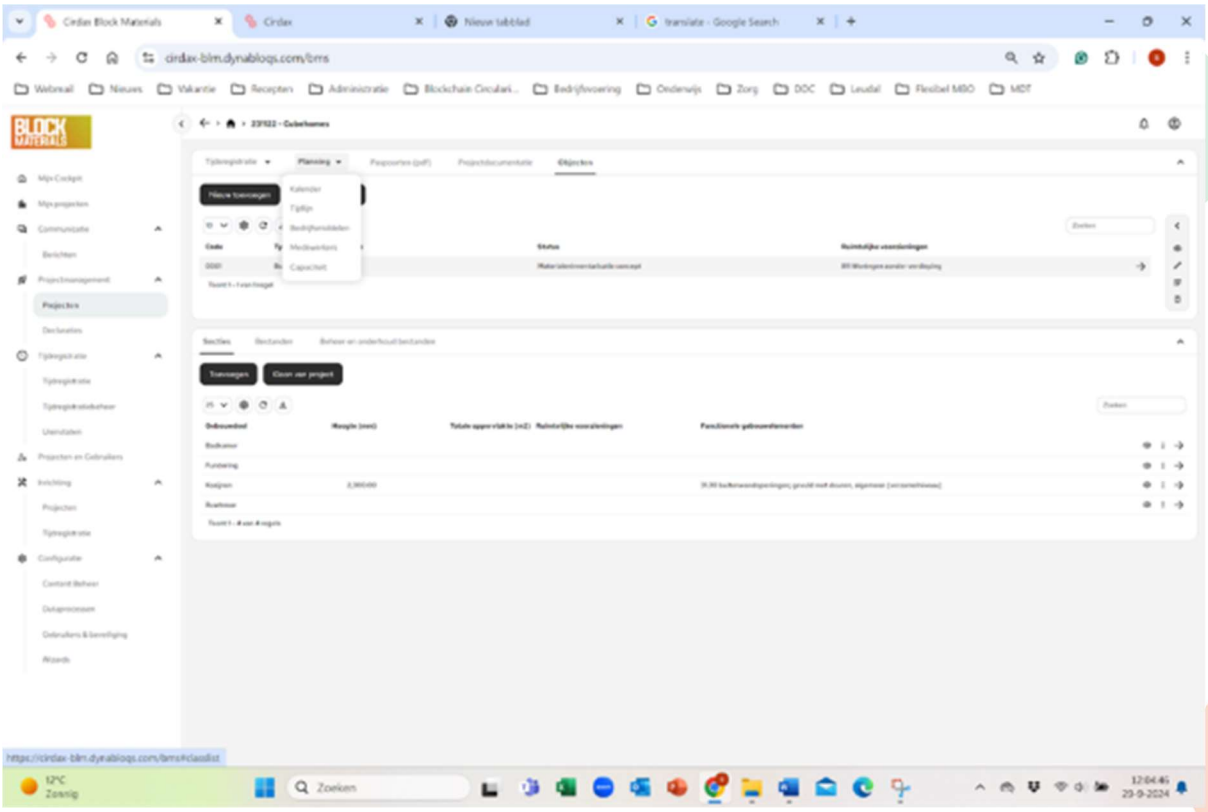

Figure 9 - Support options within the Stakeholder suite II

The stakeholders-suite is an integration module of several existing sub-systems that are already validated and bug free. However, the functionalities for the marketplace will be tested in workshops with (simulated) users. Testing of the IT-technology is not necessary. It works already.

Exploitation vision:

The goals for the enhanced marketplace for architects include attracting 100 suppliers, 100 parties on the demand side, and achieving a transaction fee volume of 100,000 euros. Additionally, the marketplace serves as a research and development platform, with parts of its infrastructure used to enhance existing marketplaces, addressing the limitations of current web shops that fail to consider specific needs and obstacles for optimal material use. The steps towards exploitation are the following ones:

1. Design and develop the demand side of the enhanced marketplace.
2. Design of the two-sided marketplace.
3. Improve the supply side according to the needs of the demand site and the coordinating marketplace.
4. Test the beta-version of the enhanced marketplace with architects from Belgium, according to their needs that are analysed in the design stage of the project. (test with other demand stakeholders will take place in sister projects).
5. Increase the amount of supply of materials in Belgium (an ongoing process).
6. Use the reputation of supplies and demand parties to attract more parties
7. Close the gap between the supply and demand side of the project, by integrating existing integrated marketplace in cases of full use by architects and building companies, or as an experimental learning environment if the potential users are still in the stage of awareness concerning circularity issue in the building industry.

Extra (outside the scope of Demo-Blog)

1. Integrate the supply from other supply side systems in the marketplace
2. Enlarge the product possibilities with the data from other systems, not restricted to material data in a building.

Intellectual property:

ReUseMaterials BV and Block Materials BV leverage their IP and IT expertise to develop the Cirdax system, a digital materials database with CO2 and blockchain registration models. They need the background IP of:

- The Cirdax-database system.
- Block Materials concerning methodologies about marketplaces, blockchain-technology and real estate.
- The Co2-module in Cirdax.
- The Blockchain-module in Cirdax.
- The Translation-module in Cirdax.

- The Dynabloqs-basic infrastructure behind Cirdax and the modules.

The resulting marketplace is a joint IP utilizing EU funding.

The revenue opportunities include fees for inventory services, material supply, material demand, marketplace transactions, and sublicensing the system to partners.

Market analysis:

The augmented CIRDAX DBL creates value for real estate (material) owners, demolition companies, architects, recycling companies, repair hubs etc and for the general environment because the use of secondary materials means that less primary materials have to be made, avoiding Co2-emissions in the primary production process.

The value of implementing blockchain technology in real estate can be summarised by addressing 6 various aspects. These include legal and moral obligations, higher profit margins through inventory and alternative use of building parts, fear of missing out and reputation loss, reduction of transaction costs, trading materials through blockchain-backed property rights, and the potential for disintermediation in the real estate transaction chain. While these benefits have not been fully scientifically proven, they present opportunities for value creation and future returns, albeit with potential resistance from existing stakeholders.

This result provides high value secondary materials to new stakeholders for a competitive price. It provides current owners of materials a higher price for their materials in and out of buildings.

The unique selling point of augmented CIRDAX DBL is to provide targets with a two-sided platform that addresses information asymmetry for secondary materials, solving the "lemons-problem" and ensuring competitive quality and pricing compared to primary materials. Our platform serves as a bridge between stakeholders by considering material characteristics and information needed by both the supply and demand sides.

Exploitation actions:

The work between October 2023 and December 2024 showed that in an interactive marketplace supply and demand between buyers and sellers should be balanced. If there are no buyers, there is no market, and there is no business case too. This balance has not been reached yet. Although technical solutions to make an interactive marketplace come more and more available, also with the help of the Dutch DMI-project Circular BuildHub, if architects and building companies are not aware of the possibilities no market for secondary materials will function. As is the case now, because research from Leap Forward in the project showed that demand for secondary materials will only appear, if the supply of secondary materials is integrated in others decision-making processes about buying materials. Be it primary, secondary, bio-based or product-as-a-service materials. Such an integration of materials supplies is not part of the Demo-Blog project, but can be part of the cooperating project, like the DMI Circular BuildHub.

However, it is possible within the scope of the project to raise the awareness of architects and building companies for the benefit of DBLs showing materials passports and the supply of materials in a building, like the Dream Hus. And connecting these possibilities about the supply of materials with the elements that influence the demand for secondary materials in workshops and supporting educational, knowledge and demonstration materials. Including

the use of project management systems, that are known in the Demo-Blog Project, as the Stakeholder Suite. In this suite all kinds of support can be organised to make it easier to help an architect to decide and register what kind of materials to reserve for a project, or what kind of materials are available from the buildings that will be deconstructed.

In the project plan for Demo-Blog it is stated that we have to start with workshops at the beginning of 2025. In June 2024 we started with preparing these workshops and improving the ingredients for the workshop. These include the data about materials from the Dream Hus, extending the stakeholder suite, preparing a knowledge base and making an educational design for the workshop, that will later be developed into a full operational workshop for architects, building companies, demolitions companies and real-estate owners.

IR1 - DBLs Evaluation Framework			
ER Type	**Process**	**ER Manager**	**TUD**
TRL before	**2**	**Expected TRL after**	**6**
Related WP	**WP3**	**Related deliverable**	**D3.4**

Short description:

IR1 represents an innovative procedure aiming to establish a DBL evaluation framework derived from the State of Play and assessments of the 5 project DBLs. This framework will serve as a foundation for enhancing and advancing DBL products or services.

Development status M18:

Currently working on a State of Play analysis report as a backbone for further developments. With the findings from State of Play report produced (M6) and the developments of the first clickable prototypes in WP1 (M18), the evaluation framework is currently being designed.

Exploitation vision:

Scientific exploitation through conferences and publications. Presentations at 2-3 conferences & 2-3 publications are foreseen.

Three distinct exploitation paths have been identified: conducting further research, developing enabling technologies for subsequent products or services, and pursuing open distribution. In the initial two-year period following project closure, the objective is to actively engage in 2-3 conferences and publish 2-3 academic papers. The overarching strategy entails fostering collaboration within the research community.

Between M1-25, the following exploitation activities have been conducted:

1. The Demo-BLog project has been presented at the Sustainable Places conference in Madrid, Spain, between 14-16 June 2023, and in Luxembourg, between 23-25 September 2024.

2. Two conference papers will be presented at the 2024 European Conference on Computing in Construction in Chania, Crete, Greece between 14-17 July, 2024. One of the papers will discuss the findings of the State of Play report on the DBL stakeholder engagement, whereas the other is a collaborative paper between Demo-BLog and its sister project CHRONICLE. Both papers have been published in the ISBN numbered conference proceedings with DOI numbers after the conference.
3. One scientific article that reviews EU policies and instruments on digitalizing energy renovation processes is expected to be submitted to the Journal of Energy and Building (Elsevier) by 17 January 2025.
4. The second scientific article is planned to explore the data requirements to facilitate energy renovations and how the DBL can fulfil this gap. For this study, TUD will collaborate with Marta Gómez-Gil (University of Zaragoza, Spain) who has been actively publishing papers on the topic of DBLs in recent years. The writing of the paper is planned to begin in February 2025 and end in September 2025.

Intellectual property:

Ownership of the IP is with all associated partners: For conferences and publication materials, contributing partners. For the PhD thesis, the copyright lies with the author. Thesis must be included in the university's repository of TUD as well.

Background access defined in the CA is not necessary, and scientific results and literature are governed by CC BY, allowing distribution and adaptation with proper attribution. The joint publications are expected to be licensed as CC BY, following common practice. Copy rights of the publications to be jointly developed belong to the authors contributing.

Market analysis:

The main target of IR1 is DBL owners, building professionals and architects. Those actors are currently lacking understanding of the full potential of DBL and embracing it into their product solutions or working processes. The IR1 will allow to assess an existing or new product or service.

Exploitation actions:

None planned at this moment.

IR2 - Improved BDNB - French National database of Buildings			
ER Type	**Product/Application**	**ER Manager**	**CSTB**
TRL before	**NA**	**Expected TRL after**	**NA**
Related WP	**WP1, WP2, WP3**	**Related deliverable**	**D2.2**

Short description:

French national Database of Buildings: improved TRL and practical use-case demonstrated in Demo-BLog.

Innovation:

Linkage of BDNB with CLEA DBL through API.

Development status M18:

During the first half of 2024, a BDNB API was published (https://api-portail.bdnb.io/) by CSTB partner. It enables existing data (building footprint, EPC, building characteristics, etc.) to be retrieved from the postal address. Qualitel partner is currently implementing the API connections into CLEA tool, in order to pre-fill technical forms.

Exploitation vision:

Scientific exploitation.

Keynote Speaker at the International Meet on Industrial and Manufacturing Engineering, Lisbon, Portugal, from March 14 - 16, 2024, Evaluating the Conceptual Architecture Requirements for an Automated Renovation Advice Tool Evaluating the Conceptual Architecture Requirements for an Automated Renovation Advice Tool (DOI:10.13140/RG.2.2.21449.15208).

During the IBPSA France (International Building Performance Simulation Association) held in La Rochelle in France 13-17th of May, CSTB has presented the BDNB API to a scientific audience of 130 persons. But also gave a workshop to show participants how to handle the BDNB API : https://conference2024.ibpsa.fr/

https://www.linkedin.com/posts/sarah-juricic-0a640133_simurex-simurex-sereine-ugcPost-7198236399077072897-h5Oz?utm_source=share&utm_medium=member_desktop

Intellectual property:

CSTB is the single owner of the result. Used Background as described in Appendix A – extracted from the Demo-Blog Project 101091749 Version 2 – January 2023, Based on DESCA – Model Consortium Agreement for Horizon Europe

Market analysis:

To be determined after the testing period (WP3).

Exploitation actions:

IARIA Congress 2024 https://www.iaria.org/conferences2024/IARIACongress24.html has been accepted – publication soon.

CSTB is currently publishing a business model to financially maintain the BDNB API up: https://bdnb.io/services/services_api/.

Support needs of ER Manager:

- Executive training
- Mentoring or coaching
- Business plan development
- Partnership with other SME's
- Partnership with large corporates

- Expanding to more markets
- Introduction to investors

IR5 - Increased European policy impact			
ER Type	**Other (Policy)**	**ER Manager**	**BPIE**
TRL before	**NA**	**Expected TRL after**	**NA**
Related WP	**WP4**	**Related deliverable**	**D4.3, D4.4**

Short description:

Tangible and practical recommendations, policy advocacy, and stakeholder engagement. A fact sheet explaining the policy links and opportunities of the DBL will be delivered for policy advocacy purposes. Secondly, a policy roadmap proposing interventions over the next decade for effective DBL implementation will be defined. Thirdly, a way to achieve a common EU DBL framework will be outlined to provide a template for policy interventions at EU and national/local level. The framework will explain the division of labour between national (local) and EU level policy actions.

Status M18:

A factsheet that explains the DBL concept and its various anchor points in the EU policy framework has been produced. This forms the deliverable *D4.3 DBL policy landscape factsheet*. The factsheet has been produced with a purpose to be used as part of the continued advocacy work throughout the duration of the project – and beyond. It is an accessible and visually inviting document with figures and infographics that will aid in creating interest and understanding with relevant stakeholders and build buy-in for DBLs as an effective policy tool. It also showcases the demos from the project and their respective functionalities. The factsheet will be delivered well ahead of the project deliverable deadline. A special launch event for the deliverable is planned for Q3. Stakeholders from different disciplines will be able to experience the content in the form of a presentation and give their feedback.

In parallel with the finalisation of the D4.3 deliverable, BPIE has mapped and contacted relevant stakeholders from different areas in the EU policy sphere and initiated dialogues to understand how to further strengthen support for DBLs in the EU framework. This work consists in part of disseminating the findings of our policy factsheet and policy mapping, but also serves to inform future work on creating a workable level playing field (Task 4.2) and an actionable policy roadmap (Task 4.3), which will form the deliverable *D4.4 Policy roadmap for the implementation of DBLs*.

In short, the work under task 4.3 in the Demo-BLog project is progressing as per the schedule, and the associated deliverables are expected to be submitted on time.

Development status at M24

Building on the initial findings from the DBL factsheet, BPIE developed a concept for and executed a stakeholder workshop in collaboration with UCL, gathering policy makers, finance providers, DBL providers, building managers, and academia to collectively tackle the problem of data fragmentation in the buildings and construction sector. The objective of this workshop was to collectively develop a vision for a unified and coherent regulatory and reporting landscape in the sector. The insights gathered during this workshop will be summarised in a vision piece and also feed into the upcoming D4.4 Policy Roadmap.

The factsheet will be presented at the project GA to foster project-internal capacity building and alignment.

Exploitation vision:

A unified and coherent regulatory landscape, co-created by and supported by all relevant stakeholders. We work towards this vision by supporting stakeholder alignment throughout the building data value chain, demonstrating DBLs contribution in this space, and encouraging cross-policy integration to create an enabling policy framework.

Intellectual property:

The materials will be protected by copyright.

Exploitation actions:

Due to the nature of the task, securing exploitation post-project is largely a matter of creating long-lasting buy-in from key stakeholders (policy makers, industry, national representatives etc.) and providing them with credible evidence to support the effectiveness of DBLs in achieving policy objectives. Concrete actions taken to this end are the mapping, contacting and relationship-building with such stakeholders, as well as the creation of high-quality and validated research results that support our cause.

Written/graphic material that is produced within the task – most notably those that aim to explain the DBL concept – are created to be generic enough to be useful beyond the project.

IR6 - User-centric interfaces for all demo's & DBL social inclusion playbook			
ER Type	**Knowledge**	**ER Manager**	**IF**
TRL before	**1**	**Expected TRL after**	**3**
Related WP	**WP1**	**Related deliverable**	**D1.6**

Short description:

LF aims to deliver user journeys and interfaces for the selected demo cases based on the needs of the end-users as well as deliver general accessibility guidelines for all DBLs. The DBL social inclusion playbook will include guidelines and key performance indicators for social inclusion. It will outline how to implement an inclusive design process and how to deliver an inclusive digital service.

Development status at M24:

IR6 represents an enhanced marketing procedure. We have delivered all user journeys for all DBL's. These were co- created with all relevant stakeholders.

The social inclusion playbook has been developed. The playbook will be a part of the Demo-BLog website, so it will be accessible for everyone. Relevant research was done together with TU Delft and content was added to the wireframes. The playbook will be implemented to the website by BPIE.

We also have delivered and published the Social Inclusion Playbook. The Playbook has been integrated in the DEMO-Blog website under 'Resources': you can visit here. This playbook is now for everybody on the internet free to use.

All DBL pilots also received the final versions of the user-centric interfaces (if they had not yet before). These user-centric interfaces were each tested & validated with 6 end-users of the respective platforms via qualitative user testing.

Exploitation vision:

IR6 serves as an enabling service. LF has shared all the prototypes & user journeys with the DBLs so they can integrate these functionalities in their own DBLs or be inspired for possible future functionalities to improve their services. For the Woningpas all 6,5 million citizens will be able to use this service when the new functionality will be integrated in the DBL. No further exploitation actions were carried out by Leap Forward. Each DBL pilot is responsible for the exploitation of their own user-centric interface/innovation.

Intellectual property:

Leap Forward (LP) is the leader of the IR6 but there are multiple owners. Associated partners are all owners of DBLs and IT developers.

- DBL owner 1: VEKA (Woningpas)
- DBL owner 2: Chill services (CAPSA)
- DBL owner 3: CLEA
- DBL owner 4: Chimni

The template used to develop the user journey is the property of LF. For the Social Inclusion Playbook, there is a shared leadership with TUD and BPIE (owner of the DEMO-BLog website where the social inclusion playbook is available).

Market analysis:

IR6 primarily focuses on companies that aspire to develop a DBL & their users (building owners, architects, governments, etc.) At the moment it is very hard to make energy efficient decisions in community-based projects because of several reasons: Information is not structured for community projects, legislation is not compliant, the possibilities and restrictions are not known, etc. We want to make these aspects more accessible through DBLs.

Exploitation actions:

Similar as to above: LF cannot draft the exploitation vision/actions for all the various pilots as we are not knowledgeable about nor have ownership of the respective market sizes, exploitation strategy, etc. of each DBL.

IR7 - New innovative IT related innovation approaches			
ER Type	**Product/Application**	**ER Manager**	**ACA**
TRL before	**NA**	**Expected TRL after**	**NA**
Related WP	**WP2**	**Related deliverable**	**D2.4**

Short description:

The IR7 output will be a demonstrator or PoC. ACA aims for a demonstrator setup of a data mesh platform in which it is shown how data from various sources can be shared and made reusable towards DBLs or other applications. The result can be an open eco-system around data for DBLs or even the data within DBLs to higher levels. In this setup each data owner can take ownership itself to share its data in a clean and reusable format (possibly following common data standards). The data will be discoverable for anyone that wants to find it and reuse/consume it. The data mesh approach can be a scalable and flexible data platform for a community of DBLs. Kind of a 'data backbone' for the DBLs.

Innovation:

Data mesh is an innovative approach to data architecture and management that fundamentally changes how data is handled within an organization. Here are some key innovations that data mesh brings:

1. Decentralized Data Ownership
2. Data as a Product:
3. Self-Serve Data Infrastructure
4. Federated Computational Governance
5. Scalability and Flexibility

Overall, data mesh represents a paradigm shift in data management, moving away from monolithic architectures towards a more distributed, domain-driven, and product-focused approach. This innovation helps organizations manage growing volumes and complexities of data, while fostering greater agility, scalability, and collaboration across teams and intra-organizations.

Development status M24:

We defined the initial architecture of the platform for the PoC that allows data producers to define Data Products in a self-service manner. We implemented a basic working version where a Data Product API or specification can be used to build, deploy and run a data product written in languages such as Java and/or Python. For this we used Kubernetes as a

framework to build the platform orchestrator, and integrated Google Cloud services like Cloud Function and Big Query for transforming and storing data. For the demo use case, we had working sessions with VEKA and VITO to explore which data can be made available to us and which we need to simulate. Next steps are to enable data producers to register new data products and generate a code repository based on standard templates, and to enable the data consumer to discover published data products in a catalogue. Also generating the necessary datasets for the demo use case is a next focus.

Since M18 we implemented data producer and consumer features in a data product developer portal and a data product catalogue backed by the platform orchestrator automating and integrating the whole experience and technology stack. We also focussed on developing data products for a demo use case on energy related data for buildings. While test driving the data products on the current platform version, we further improved the platform quality and developed new insights into additional features that we can still add.

Exploitation vision:

IR7 Data Mesh platform POC will prove the feasibility and value for having a data (product) sharing backbone for an ecosystem of DBLs and related services. The result will become the basis for an enabling technology to build such a backbone platform. This can result in commercial exploitation towards such a Data Mesh platform with supporting services available for DBLs, the European Union policy makers, etc. In this manner they get a platform to exploit and share energy related data in a controlled and structural way. At the same time, further research on platform capabilities will be carried out to let the result evolve to something that is usable in a broader context. It can also help in education around data mesh platforms (e.g. workshops), and work towards a standardisation around components and interfaces between them.

Market analysis:

IR7 primarily focuses on companies that aspire to develop a DBL & the European Union. At the moment, central data approaches are not scalable towards an ecosystem where data about buildings is scattered with many stakeholders.

Exploitation actions:

The proof of concept, which is currently elaborated, aims to test some concrete business ideas to validate the added business value. While doing this, we assess the feasibility of sharing data and the viability of the technical solution. We want to explore commercial opportunities for such a Data Mesh backbone realisation in the DBL ecosystem and take action to broaden the applicability of the implemented result towards other sectors through further funding or commercial opportunities.

Intellectual Property

- Owner(s) of the IP: ACA IT Solutions
- IP protection measures: Copyright, security measures, contractual clauses...
- IP agreement: All intellectual or industrial property rights to the products developed or made available under this agreement belong exclusively to ACA IT Solutions. 'Product' is understood as: software, or other materials such as analyses, designs, documentation, reports, offers, as well as preparatory materials.