Replication and Exploitation Plan

D7.1

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House Style

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 THE USE OF THE EU EMBLEM IN THE CONTEXT OF EU PROGRAMMES 2021-2027 LINK				
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Yellow	255	204	0	#FFCC00

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Abbreviations

ANTW: City of Antwerp
APC: Agence Parisienne du Climat
CA: Condominium Association
C&D: Communication and Dissemination
CM: Condominium Manager
CondoReno: Acronym of the project "Creating and Multiplying Integrated Home Renovation Services for private condominiums in the Netherlands and Flanders" (LIFE grant agreement No. 101076316)
EBC: European Builders Confederation
IAB: International Advisory Board
IHRS: Integrated Home Renovation Services
KER: Key exploitable result
KPI: Key Performance Indicator
LoI: Letter of Intent
LSG: Local Stakeholder Group, referring to the local stakeholders that co-create supply for IHRS
MECH: City of Mechelen
NAB: National Advisory Board
OOST: City of Ostend
PP: Project Partner
R&E: Replication and Exploitation
REP: Replication and Exploitation Plan
TCO: Total Cost of Ownership
TRL: Technology Readiness Level
TUD: Technical University of Delft
UIPI: International Union of Property Owners
WNR: Stichting WoonlastenNeutraal Renoveren
WP: Work Package

Terminology

Business model: a model that describes the value logic of an organisation in terms of how it creates and captures customer value, and which can be concisely represented by an interrelated set of elements that address the customer, contain a value proposition and address organisational architecture and economics dimensions. Sources: Fielt (2014), Seddon et al. (2004), BPIE (2016), Laffont-Eloire et al. (2019), Hidalgo-Betanzos et al. (2023).

Condominium: a building or cluster of buildings split through a deed of division into individual units that are independently sellable.

Condominium Association: a legal entity that is constructed by the property owners that first buy a functional unit in a condominium, to govern the building (cluster) and manage functional units of the building and associated territory.

Condominium Manager: a commercial entity or an entitled co-owner that manages a condominium and its facilities and that is appointed by a condominium association to do so.

Direct use: implies that partners utilise the results themselves for commercial applications (for example, by producing and/or commercialising a new product or service) and/or for further research ('further' with respect to the scope of the project in which the foreground is generated) (Janouskis, 2020).

Dissemination: sharing research results with potential users - peers in the research field, industry, other commercial players and policymakers). By sharing your research results with the rest of the scientific community, you are contributing to the progress of science in general (European Commission, 2023)

Energy Performance Certificate: An official energy-efficiency evaluation of a building or part of a building aiming at informing building owners, occupiers, and property actors on the energy performance of their buildings so that they can compare and assess different buildings and make informed decisions. Energy Performance Certificates are often accompanied by advice and practical information on how to improve the energy efficiency of buildings and their performance class Source: BPIE (2021).

Energy performance of a building: The calculated or measured amount of energy needed to meet the energy need associated with the typical or standard use of the building services.

Energy poverty: A set of conditions where individuals or households are not able to adequately heat or provide other required energy services in their homes at an affordable cost. There are three main components: low household income; high/growing energy prices; and inefficient energy performance of buildings concerning thermal insulation, heating systems and equipment. Sources: Pye et al. (2015), Thomson and Bouzarovski (2019), EU Energy Poverty Observatory (2020).

Energy use: The energy input to a technical building system providing an energy performance of buildings service intended to satisfy an energy need (EPBD, 2021).

Exploitation: the use of results for commercial purposes or in public policymaking (European Commission, 2023)

'**Exploitable**' results are results that can be used with a business model OR as an ingredient for a new project (Janouskis, 2020).

Indirect use: implies that partners may allow third parties to exploit the results through a specific agreement (Janouskis, 2020).

Intermediaries: Stakeholders that act as a third party and interact or connect between supply and demand, for example, between demanding actors and energy and renovation solution providers. Intermediaries may have more experience and expertise compared to the homeowner, therefore being able to deliver a more comprehensively/thoroughly researched solution. Source: Hidalgo-Betanzos et al. (2023).

Open: open results are results that are freely available.

Primary energy: Energy that has not been subjected to any conversion or transformation process. Primary energy includes both non-renewable and renewable energy. For a building, it is the energy used to produce the energy delivered to the building. It is calculated from the delivered and exported amounts of energy carriers using conversion factors. Upstream processes and related losses are considered. Source: Hidalgo-Betanzos et al. (2023).

Renewable energy: Energy from sources that are not depleted by extraction, such as wind power, solar power, hydroelectric power, ocean energy, geothermal energy, heat from the ambient air, surface water or the ground, or biomass and biofuels. These alternatives to fossil fuels contribute to reducing greenhouse gas emissions, diversifying the energy supply and reducing dependence on unreliable and volatile fossil fuel markets, particularly oil and gas. Source: Hidalgo-Betanzos et al. (2023).

Renovation: Construction activities related to interventions onto existing buildings or connected infrastructure. These interventions range from simple repairs and maintenance to adaptive conversion, transformation, and reuse. Source: Hidalgo-Betanzos et al. (2023).

Replication: the process of repetitive use of the project results and created capabilities in other territories and/or areas to realise economic and environmental benefits without substantially changing the initial form and/or content of the results (Winter, 2001).

Results: Outputs generated during the project, which can create impact during and/or after the funding period. Results are owned by the beneficiary or beneficiaries that generates them; they can be used either by the project partners or by other stakeholders (e.g. when background is involved for the generation of results).

Scaling out: refers to increasing the capacity of IHRS by adding additional IHRS providers and/or new services, as opposed to increasing the capability of the existing IHRS for existing services (scaling up).

Stakeholders: The persons, homeowners, companies, public institutions and in general every agent with an interest or concern in an ongoing or future project. The stakeholders in renovation projects can be a wide and diverse list of agents, including decision-making actors and also other involved

participants that can influence the success or failure of the renovation process. Source: Hidalgo-Betanzos et al. (2023).

Strong actor partnership: Involve a deep level of collaboration, where entities work closely together on multiple fronts, sharing resources, information, and responsibilities. The collaboration extends beyond individual projects to encompass broader strategic alignment and joint decision-making processes.

Use: the direct or indirect utilisation of the results in further research activities other than those covered by the project, or for developing, creating and marketing a product or process or for creating and providing a service (Janouskis, 2020).

Introduction

The CondoReno project aims to increase the impact of successfully tested, innovative IHRS business models, targeting decision-making about ambitious energy renovations within condominium association (CA) meetings. This is done by facilitating:

- Scaling out the IHRS methodology to CAs (currently IHRS activities are often limited to services for individual homeowners).
- Scaling up the creation and development of IHRS in Flanders and in the Netherlands, developing supporting toolkits, supply-demand interaction, and a shared digital resource center.
- Cross-sectoral partnering using the IHRS methodology targeting CAs, engaging multiple stakeholders through project results and matchmaking in collaborative actions.

The CondoReno project results will provide stakeholders with a starting kit for multiplying IHRS for condominiums in the Netherlands, Belgium and other EU regions.

This Replication and Exploitation Plan (REP), describes how the project consortium will aim to achieve a maximum transfer of information and shareable results to the audiences that can best make use of it. It illustrates how the project results will be implemented and how they will impact on the market, future developments, and policymaking.

The first version of the REP contains detailed context about the project, covering the LIFE CondoReno project goals and outputs, and the market and policy context in Flanders and the Netherlands. The first version can be found here.

This version of the plan is organized into four sections and covers the following points:

- Section 1: Key exploitable project results and target stakeholders
- Section 2: Guidelines for the project advisory boards and engagement with other European initiatives dedicated to IHRS and one-stop-shops for energy efficiency
- Section 3: A Roadmap to enabling IHRS replication among the target audience of the project

Section 1: Key exploitable project results and target stakeholders

In this project, there are six identified key exploitable results (KERs). The KERs are classified in the following two groups:

- KER1 are related to IHRS business models
- KER2 are related to the supporting tools that can facilitate IHRS

This section includes a summary of KERs within the project along with a market analysis which summarizes their potential for replication and/or exploitation.

Table 1elaborates on the KERs in terms of:

- Whether they are open and/or exploitable (where **open** means freely available for use, and **exploitable** implying a useable business model or an ingredient for a new project)
- How the KERs will be further exploited (the exploitation routes), and who the implementing actors will be (these are the stakeholders/groups most likely to utilize or exploit the KER)

KER	*DESCRIPTION*	*OPEN/ EXPLOITABLE*	*EXPLOITATION ROUTE*	*IMPLEMENTING ACTORS*
KER1 - related to the IHRS business models				
KER1.1	Multi-layered business model descriptions including recommendations	OPEN	Direct Use: optimizing existing models by local policy actors	Cities of Antwerp, Mechelen, Ostend
			Direct Use: optimizing existing non-profit models	WNR[1]
			Indirect Use for commercialisation (deployment of novel services, e.g., guided by Embuild)	Third parties/ commercial actors, e.g., IHRS targeting individual homeowners that aim to expand services to CAs
			Direct Use: integration as example in management courses	TU Delft
KER1.2	Policy recommendations and market guidelines for	OPEN	Direct Use: recommendation of new legislation/standard	UIPI, EBC

[1] WNR coordinates all activities required for an IHRS. WNR facilitates the CA board with all services that are purchased from third parties. For that reason, WNR does not own the methods and (calculation) models used, unless explicitly stated

	creating and multiplying IHRS targeting CAs		Indirect Use: integration in new policies	Third parties/ policy actors, federations
KER1.3	Consultancy and project development services related to IHRS business model development.	EXPLOITABLE	Direct Use: deployment of new research projects (targeting markets and policy actors)	TU Delft
KER2 - supporting tools that can facilitate IHRS				
KER2.1	Supporting planning and management tools for the IHRS and CA renovation actors (can be upgraded to personal recognition).	EXPLOITABLE	Direct Use: integration of tools in novel products and commercial services	WNR[2]
			Indirect Use: integration of tools in existing products and commercial services	Third parties/ IHRS providers, members of Embuild, EBC, UIPI
KER2.2	Training modules and certifications to level up IHRS and CA skills. Maturity-layers for integrating Energy Performance Guarantees and Quality Assurance.	EXPLOITABLE	Direct Use: commercialisation, deployment of a novel service	KERN[3]
			Direct Use: reinforcement of blended education	TU Delft, KERN
KER2.3	Digital resource centre for customer relationship management and matchmaking of supply and demand by local policy actors (can be upgraded to personal recognition of actors involved in IHRS).	EXPLOITABLE	Direct Use: deployment of a novel product	Cities of Mechelen and Ostend

Table 1 Key Exploitable Results

In the next draft of this document, we will further elaborate on the valuation path for each KER. An indication will be provided on whether the KER is intended for internal use by partners, requires further research, is an enabling technology (for subsequent product, service, etc.), to be used as training material, intended for open distribution, intended for the establishment of industry standard, direct sales / consultancy service, intended for licensing the innovation to a third party, launching a startup or spin-off, or other.

[2] WNR coordinates all activities required for an IHRS. WNR facilitates the CA board with all services that are purchased from third parties. For that reason, WNR does not own the methods and (calculation) models used, unless explicitly stated
[3] Main aspect in replication by KERN will be: training about integral renovation approach and further establishing the quality assurance proces to allow more parties to engage in the WNR-services

1.1 Market Analysis of KER1- related to the IHRS business models

The CondoReno project provides a framework to create and multiply business models using a methodology to map existing business models and stakeholders. Knowledge is provided regarding viable customer segments, value propositions, customer relationships, communication channels, financial gain, key resources, key activities, key partnerships, and cost structures. This information can be used in full by the project partners to reinforce each other's business model development. Selected information is available in public reports for third parties to enhance their own business models and consultancy services, entitled:

- Activating business models for condominium renovations
- Stakeholder classifications for IHRS for condominiums in the Netherlands and Flanders

Public deliverables about the CondoReno business models and their evaluation are freely available for IHRS developers and interested actors.

Innovativeness compared to existing products and services

CondoReno offers business model development knowledge to fit the objective of enhancing IHRS to reach out to CAs and CA managers in CA meetings. IHRS can be upscaled to cover groups of homeowners at the same time, thus also enhancing the attractiveness for supply actors to engage in long-term relationships and collaborations.

Unique selling point (competitive advantage)

The developed IHRS are locally well-embedded and target high energy efficiency after building renovation (ref. energy label A) as well as non-energy benefits, such as unburdening the decision-making process and financial planning for CAs. In theory, the CA does no longer have to manage multiple individual renovation actors but can rely on one trusted and experienced actor.

Product/service market size

The market gap opportunity will be further explored by the cities of Antwerp, Mechelen, Ostend and WNR with the support of TU Delft.

Market trends/ public acceptance

The potential social impact is high as the aim is to triple the number of deep renovations by CAs and to speed up the CA decision-making processes. Policies are currently also being developed to support CAs with specific subsidies and loans for renovation master planning and coaching of CAs, which will give a further impulse to develop IHRS for CAs.

Product/service positioning

IHRS business model development is value-driven and currently models are being developed by local policy actors as well as non-profit and commercial actors. The CondoReno models position IHRS as targeting the highest possible energy efficiency of buildings after renovation using living-cost neutral approaches to guarantee affordable solutions and performance guarantees for all homeowners.

Legal or normative or ethical requirements

Many governments organise the energy transition in a step-by-step approach, not necessarily aiming for high energy savings in the first renovation step. Achieving the highest possible energy efficiency of buildings requires obligations to take renovation measures in the short and longer term, e.g., at the time of transaction of buying or renting an apartment. Exploitation of the IHRS business models by EU actors might depend on opportunities to reduce legal barriers for CAs to renovate their buildings and produce renewable energy. Also, financial services offered to CAs might highly depend on bankable options and the development of local revolving funds or other national funding schemes.

Competitors/ substitutes

In the Flemish context, the IHRS are driven by the municipalities and Energy Houses, yet CondoReno also intends to develop market driven IHRS. Aspiring market driven IHRS might be perceived by CAs as competitors of the existing IHRS. This means they need to develop a complementary offer, for example focusing more on the contractual, financial, legal advice and execution and quality assurance of the renovations. Similarly, in the Dutch context market driven IHRS also need to find a way to systematically collaborate with municipal CA or energy advice desks.

Sector application

KER1 addresses collaboration, knowledge sharing and partnering needs of multiple actors (contractors, architects, consultants, suppliers, intermediaries) who want to be involved in integrated renovation services and who now perceive less need and desire to reach out to CAs. In a most optimistic scenario, IHRS business models can also alleviate the high financial burden on local policy actors who are currently managing such emerging IHRS with the prospect of market actors taking over the IHRS.

Cost of implementation before R&E

The creation, testing, evaluation, and promotion of four starting business models (Antwerpen, Mechelen, Ostend, WNR) is funded by the LIFE CondoReno project. The creation of two starting business models (guided by Embuild) is funded by the LIFE CondoReno project as well.

Timing of related project deliverables

The four viable business models for IHRS for condominiums in the Netherlands and Flanders (D.2.2) for testing in cases were reported in December 2023 (see here). Four business models will have been applied and tested in eight selected demonstration projects by the end of year 3 of the project. In parallel, co-creation of IHRS for CAs (D.5.2) will take place (including development of 2 additional IHRS business models by Embuild) which results will be reported in M30 (March 2025). C&D about the business model development experiences will also happen in parallel (WP8). International R&E will be initiated in the last project year after delivering an evaluation of the IHRS business models (D.6.1 M34, July 2025) and an executive summary for policy makers (D.6.2, M36, September 2025). Further R&E will happen after the end of the project.

Adequateness of internal staff

Project staff must adhere to the consortium agreement to implement the IHRS business models. Additional staff and resources may be required to facilitate the application of business models in other EU regions.

Involving external partners

The business model development requires the involvement of multiple stakeholders at local, national, and international levels, to serve wider application. The main stakeholders are mapped in the CondoReno WP2 stakeholder mapping.

Replication and exploitation roadmap

Local, national, and international uptake of IHRS business models during the project is done by the project partners and supported by dedicated advisory boards (see Chapter 5). The actions required during the la st year of the project include the publishing of associated guidelines and policy recommendations via the CondoReno website and social media and the presentation of business model outcomes in five target regions in Europe on dedicated events organized by local homeowner and contractor associations. If applicable, partners might apply for additional funding (EU, national) to harmonize actions or disseminate business model development knowhow beyond (specific cities in) Flanders and the Netherlands. TU Delft further engages to continue R&D in this field depending on proposed initiatives of internal and external partners and networks.

1.2 Market Analysis of KER2 – Supporting tools that can facilitate IHRS

The CondoReno project provides various practical project results that can help IHRS to effectively target CAs, CA managers or groups of homeowners. Besides the IHRS, the developed tools might also support:

- Actors who could use planning and management tools to support renovation processes, e.g.:
    - project managers and project developers who could use tools that integrate and manage multiple renovation services according to the CA renovation journey;
    - energy coaches and architects who could use tools to provide a renovation master planning;
    - CA managers and financial intermediaries who could use tools to develop a financial plan for living-cost neutral renovation solutions.
- Training providers with specific modules to upgrade actor services towards providing energy performance guarantees and quality assurance.
- Local authorities who could use a digital resource centre with an effective client relationship management system to support the follow-up of renovation processes and actor interaction.

Innovativeness compared to existing products and services

The developed planning, management, training and digital tools advance existing tools and training to fit better with targeting CAs and CA managers. The tools aim to offer insights into how to propose living-cost neutral renovations including energy performance and quality assurance. Furthermore, the

digital resource centre and its matchmaking opportunity increase the local attractiveness for supply actors to engage in CA renovations, and with local authorities.

Unique selling point (competitive advantage)

The developed tools will be promoted by the IHRS and other intermediaries as well-proven for integration into existing services. Financial planning is made easier for CAs by connecting to ongoing decision processes and the availability of multi-annual maintenance plans and reserve funds. The training offers certification for professionals. The digital resource centre offers visibility of experienced actors.

Product/service market size

The market gap opportunity is further explored by the project partners.

Market trends/ public acceptance

Policies are currently being developed to support CAs with specific subsidies and loans for renovation master planning and coaching of CAs, which will give an impulse to develop tools for targeting CAs with management and planning solutions. Passive house renovation training is already ongoing, and the proposed modules can enhance existing training. The digital resource centre idea from CoachCoPro/ APC has already been adopted in 28 cities and regions in France, and tools with the same objective were implemented in Antwerpen and Liège (ACE-retrofitting project), dena in Germany (IEE COHERENO project). A pool of energy coaches is available in Antwerpen. In this project Mechelen and Ostend will follow. Furthermore, a pool of renovation master planners was introduced by VEKA in Flanders. In the Netherlands, municipalities have also been developing local desks to support CAs with energy-related issues.

Product/service positioning

The tool development is value-driven and currently tools and training are being developed by local policy actors as well as non-profit and commercial actors. The CondoReno models position additional elements for targeting the highest possible energy efficiency of buildings after renovation using living-cost neutral approaches to guarantee affordable solutions and performance guarantees for all homeowners.

Legal or normative or ethical requirements

Exploitation of the tools for commercial purposes will depend on mutual agreement with the partners who own the IP rights. Certification of trainees will be a voluntary initiative. The listing of actors in public databases might require screening of experience or training of these actors.

Competitors/ substitutes

The tools are developed within a highly competitive environment that continuously develops commercial CRM systems and management tools for real estate professionals. There are also numerous energy advice tools, but most of them do not target CA decision-making related to energy issues. Nevertheless, commercial activity in this field can be expected during the project, which

requires project partners to constantly look for synergies and provide information for training activities. Trainings and networking events for CAs and CA managers can be a good basis for advancing use of tools. Therefore, partners need to find synergies with existing trainings, like for example result-oriented collaboration (RGS methodology), passive house planning and AZEB-trainings, real estate management curricula, advanced education for sustainable building managers, and so on.

Sector application

KER2 tools and training can target various actors (contractors, architects, consultants, suppliers, intermediaries, local authorities,) who want to develop commercial or non-profit activities reaching out to CAs. Planning and management tools are primarily intended to support existing and emerging IHRS and CA managers. The training is provided in various formats. On the one hand supply chain actors are instructed about living-cost neutral propositions and quality assurance for energy performance guarantees. On the other hand, training can be organized (also by third actors) to instruct CAs about their legal responsibilities, the organisation of maintenance planning and renovation scenarios. The digital resource centre will be managed by local authorities or their affiliated institutes who manage CA client relations.

Cost of implementation before R&E

The emergence of the needed tools and trainings is funded by the LIFE CondoReno project. CondoReno covers costs for providing an inventory of tools to IHRS, arranging quality assurance, and eliminating financial loads and risks in CA renovation processes, activating demand and supply for IHRS, and testing and adjusting decision-support instruments in case studies, resulting in recommendations for adoption or further development. After the project tools and trainings might need some further resources for the implementation of commercial or non-commercial use, either used directly by the project partners, or indirectly by third parties.

Timing of related project deliverables

Initial tool developments will be presented for testing in cases to national advisory boards in 2024, including:

- An investment proposal method and financial decision support tool (D.3.1) (final expected Sept 2026)
- A toolkit for CA decision-making (D.3.2) (final expected September 2025)
- A toolkit for SME's engaging in IHRS for condominiums (D.3.3) (final expected October 2024).
- Requirements for guarantees and a financial fund (D.3.5) (final expected March 2025)
- First training material for activating the supply side (D.3.4) was developed in December 2023 (see here to access the Guidebook for course providers) (final expected October 2024).
- A complementary digital tool for condominium renovation (D.5.1) (October 2024).

Overall, commercial uptake of tools and trainings by project partners and third parties can only be expected after validation (year 4). Further R&E will take place after the end of the project.

Foreseen product/service price

At this stage it is difficult to calculate the potential costs of the tools and trainings as they still need to be developed and tested.

Adequateness of internal staff

Project staff must adhere to the consortium agreement to implement the IHRS tools and trainings. Additional staff and resources may be required to continue the development of tools and trainings, also in other EU regions.

Involving external partners

The development of tools, trainings and digital resources requires the involvement of multiple stakeholders, at local and national levels, to serve wider application. Next to application by the IHRS, the management and planning tools should preferably be tested and supported by CA managers or other key frontrunners that could apply these tools (e.g., banks, revolving fund managers, insurance companies, facility managers, architects, real estate brokers, project developers. renovation contractors, project managers). These actors will be attracted during the co-creation processes and as part of joint IHRS business model development. The trainings might also be offered via associations that are well embedded towards the target groups (e.g., contractor associations, homeowner associations). The digital resource centre and matchmaking platform will only be a success if external partners subscribe locally (e.g., CAs, architects, energy consultants, renovation suppliers).

Status of IPR: exploitation forms

The tools and trainings based on this KER come in the form of distinct types of management sheets, digital modules, trainings, certification (competences and process – quality assurance) and consultancy. Project partners own IPR of their prior knowledge and the knowledge they develop within this project.

Replication and exploitation roadmap

Local, national, and international uptake of IHRS tools and trainings is organized by the project partners and supported by dedicated advisory boards (see Chapter 5). The actions required during the last year of the project include the publishing of associated guidelines and recommendations via the CondoReno website and social media and the presentation of developed tools and trainings. During the period after the project completion WNR will follow up the use of CondoReno planning and management tools, KERN and Embuild will follow up the training initiatives and Mechelen and Ostend will continue the developed digital resource centre. If applicable, partners might apply for additional funding (EU, national) for tools to reach more advanced technology readiness levels and for trainings to develop on a national scale.

Revenues

Once the development of tools is validated and completed, and following the project, Stichting WNR – on a non-profit organisation basis - could potentially generate revenue from consultancy services provided to CAs and renovation suppliers for CAs, particularly to cover its own (future) running costs

and demonstrate the feasibility of the IHRS business. Once fully developed, commercialized trainings and certification could provide revenues for KERN and Embuild. The development and/or promotion of the digital resource centre might also lead to some revenues for APC's matchmaking services towards cities in Europe. Otherwise, public deliverables might allow third parties to use tools and trainings to create revenues. Project partners as well as third parties might engage in new project proposals to attract project grants, national/regional incentives, and commercial revenues.

In the next draft of this document, we will elaborate on the result type for each KER. For instance, an indication will be provided on whether the KER offers a:

- Significantly improved product
- Significantly improved service
- Significantly improved process
- Significantly improved marketing method
- Significantly improved organisational method
- Consulting services
- New product
- New service
- New process
- New marketing method
- New organisational method

The next draft of this document will also include further details to define additional details on the strategy for the KERs to go to market.

Section 2: The role of project advisory boards and engagement with other European initiatives dedicated to IHRS and one-stop-shops for energy efficiency

The project team has begun activating our target audience in the following way:

- **Co-creating and engaging with local energy consultancy desks and renovation hubs**:
  - In Flanders, there is a monthly meeting among 20 energy houses. A separate meeting will be held with the energy houses that work specifically with condominium associations. In these meetings, practical knowledge sharing takes place on topics such as renovation financing (loans and subsidies), assessing the financial situation of a condominium association and sharing working materials. The energy houses share a Teams platform which serves as a resource centre for information sharing.
  - In the Netherlands, exploratory meetings were held with relevant local stakeholders. Presentations were held for The Municipalities of The Hague, Rotterdam and Amsterdam and possible synergies were discussed by WNR and TU Delft with existing consultancy desks and renovation hubs. Energie communities in South Holland were addressed during a workshop for this target group. Other Dutch IHRS follow the project as observer (see Letters of Intent).
  - International connections were made with IHRS during meetings dedicated to one-stop-shop development organized by the LIFE project itself, and via the EU Peers project, which assembles multiple European one-stop-shop initiatives. Dedicated meetings were held with Austrian, French, Swedish and Bulgarian one-stop-shops.
  - Partners are organizing a webinar with information about support for condominium associations.
- **Dutch, Flemish and International Advisory Boards**: meeting approaches for activating target audiences (e.g., by involving high-impact federations and associations and policymakers), particularly also aiming for formalized intentions for the uptake of IHRS in national policy or covenants in national advisory boards, and formalized IHRS development intentions in five countries via an international advisory board. See further for an overview of the Dutch and Flemish Advisory Board members. More details on their structure can be found below.
  - A first Dutch advisory board meeting was held in The Hague on 22 november 2023.
  - A first Flemish advisory board meeting will be held in Mechelen in june 2024.
- **Letters of Intent**: Stakeholders on both the supply and demand side have been invited to signing a Letter of Intent (LoI) to support the project. As part of this process, the team is inviting stakeholders to find ways to become active in the project – either by advising on project developments and/or utilizing results. There have been several moments of communication with LOI signatories to date. See further for a complete list of organizations which have agreed to engage in and support the project. Organizations will support the project in various ways:
  - Through mapping with data (WP2)
  - Testing and development of tools related to their practice (WP3)

    - Case development (WP4)
    - Local Stakeholders' Communities and the development of a digital platform (WP5)
    - Evaluation methods (WP6)
    - National Steering Committees (NSC) (WP7) in Flanders and the Netherlands for assisting in various WPs and an international advisory board (IAB) for exchanging information and feedback.
    - Dissemination with their channels (WP8), enhancing and further capitalizing knowledge
- **Targeted communication**: via our reach in workshops, conferences, the Letter of Intent signatories, the materials being produced in the project are reaching the target audience.
- **Synergies with other European projects**: when possible, the CondoReno team participates in knowledge-sharing opportunities with other initiatives dedicated to IHRS and One-stop-shops for energy efficiency.

The project team is maintaining active outreach, and the intention is that stakeholder communities, committees and the members of the advisory boards will grow during the project. This outreach provides the team with a pathway to ensuring that the project results will lead to real impact upon the conclusion of the project. See the project community here.

Dutch Advisory Board Members include:

- Aannemersfederatie Nederland Bouw en Infra
- Appartement en eigenaar
- Bouwend Nederland
- DVvE
- Energiesprong Alliantie
- Gemeente 's-Hertogenbosch
- Gemeente Breda
- Gemeente Den Haag
- Gemeente Rotterdam
- Ministry of Internal Affairs and Kingdom Relations (BZK)
- Onderhoud.NL
- Province Gelderland
- Segon BV
- Stichting VVE Belang
- Stichting Duurzaam Stoer
- Stimuleringsfonds Volkshuisvesting
- TKI Urban Energy
- Verbouwstromen
- Woonnu

In the Netherlands, a policy expert group and a legal/financial expert group will be established.

- **Policy Expert Group:** The board will formulate a coordinated response in the upcoming Internet Consultation on new SVVE rules for 2025 (expected to open in summer 2024).
- **Expert Group on Legal and Financial Issues:** A workshop is being organized on 11 April with key actors including the Ministry BZK, Wartmefonds, SvN, Segon, WOAB, Appartement

en eigenaar, Energiesprong Alliantie and Woonnu to discuss the needs and structure of a calamity fund for energy renovations in condominium associations.

Flemish Advisory Board members include:

- 03 Beheer NV
- Agoria
- APB Kamp C
- Appartement tv
- Artuur
- BBL - Bond Beter Leefmilieu
- Buildwise
- Bureau Bouwtechniek
- Carl Mariën beheer
- CIB
- City of Liege
- City of Bruges
- Clabots Advocaten
- Core FM
- Dubolimburg/ C-Real
- EHI (Association of the European Heating Industry)
- Embuild Wallonie
- FEREB
- Gevelinzicht
- HE-VO vastgoed
- IGEMO
- Immosquare
- Insurea
- KBC Bank NV
- KU Leuven - HIVA
- Pixii
- Provincie West-Vlaanderen
- RenoseeC
- Sea'ndicus BV
- SNPC-NEMS
- Trema
- VEKA (Flemish Energy and Climate Agency)
- VME Lamot
- VME Oliveten III
- VME Residentie Riva
- VME Salvator
- VME Zandpoort
- VVSG
- Woonhaven Antwerpen
- WVI

In Flanders, focus groups will be established:

- **Focus group for engineering offices (April 2024):** WNR and KERN - partners in the CondoReno project - develop integral renovation projects for condominiums according to the principles of Living Cost Neutral Renovation. For the co-owners, the energy costs and contributions to the condominium association (service costs and major maintenance reserves) together after renovation are little or no higher than before renovation. In a workshop on Thursday 25 April 2024, WNR and Kern will share their knowledge and expertise on living cost neutral renovation with the study bureaus from the Flemish Advisory Board. Together we will explore what conditions must be met to apply this living cost neutral approach in Flanders.
- **Focus group on filling the gap between the planning and execution phases of energy renovations (26 April 2024 during the Klimaatcongres):** Flemish energy houses support condominium associations in their decision-making process around renovation works and explore financing opportunities (loans and grants). After deciding to renovate, the works still need to be carried out. In the workshop energy houses and building professionals explore together how to achieve a smooth transition from plan to execution; what the construction industry has to offer to accelerate the implementation of apartment building renovations; what building professionals need to achieve a smooth transition; And what energy houses have to offer to building professionals.
- **Digital Resource Centre focus group**: Focus Group with condominium associations and building professionals regarding the development and use of the digital resource centre. The focus would be on understanding the barriers to using such a tool and will provide input on the design and development of the digital resource centre. These focus groups will take place in May – June 2024.
- **Supply side expert group (Energiecongres Embuild 30 May 2024)**: during an expert day, we bring together experts who each share their expertise in their field with the participants. We thus aim to raise the knowledge level and broaden the insights on the subject.
- **Learning network for IHRS stakeholders (sep/oct 2024 tbc)**: A learning network is a form of peer learning, where work is done in a fixed group, during several meetings around a common theme. In a learning network, knowledge and experiences are purposefully exchanged on a particular knowledge area. During 4 to 5 sessions, 15 to 25 participants work together on knowledge sharing. Ideally CAs and supply side actors convene to develop trust for matchmaking.

2.1 National Advisory Boards & national uptake

The aim of the national advisory boards is to achieve each a cross-sectoral agreement, one in Flanders and one in the Netherlands. The tasks of the NABs are to:

- Reflect/advice on project activities and results, and on potential changes in the project.
- Advice on dissemination activities and reach out to stakeholders.
- Support paving the way for self-sustaining the developed IHRS for condominiums
- Prepare formalized intentions for the uptake of IHRS in national policy or covenants

The Flemish advisory board is led by Embuild and supported by Antwerp (this board is regional and is supported by the Flemish Energy Agency VEKA, due to energy governance being a regional responsibility). The focus groups are planned by the Flemish partners. The Dutch advisory board is led by TU Delft and the related expert groups are supported by WNR.

Boards are invited to meet regularly (once a year, alternating each half year in Flanders and in the Netherlands).

- In the first Dutch NAB meeting in November 2023, it was concluded that one of the greatest areas of potential impact could be through a collective and a coordinated response to policy internet consultations. The Dutch HOA Acceleration Agenda ("VvE Versnellingsagenda" in Dutch) gives long-term perspective on where the government is going, and the board sees an active role in giving input on this policy development (see the summary report here).
- Following a first online meeting, the next Flemish advisory council will take place on 13 June 2024, where Flemish partners will bring the council members together physically at Embuild in Brussels and give an update on the project. VEKA will speak to explain the short- and long-term strategy of the Flemish Government. In various working groups, advisory board members will be actively involved to interactively address obstacles and look for solutions together.

2.2 International Advisory Boards & international uptake

In terms of replicability and upscaling on a European scale, actions by UIPI, EBC and the international advisory board aim to raise awareness but might also lead to direct demand for replication in other EU cities and regions.

Through the organization of events in different EU countries, initiating IHRS workshops with local property owner and contractor associations, the project partnership will push for the uptake of the CondoReno approach in ten EU cities/countries (see also WP7). In this context and considering the Green Deal/Renovation Wave ambitions of the European Union, CondoReno digs into some major requirements to move forward for a better and quicker roll-out of quality one-stop shop initiatives for energy efficiency in Europe:

- Highlight the need for consistent funding of comprehensive/all-inclusive IHRS, which can unlock the full potential of sustainable renovation in the private residential sector by accompanying owners throughout the whole retrofit process, including counselling, technical advice, and financial support.
- Ensure free-of-charge first-level advice to consumers when the renovation project is still very uncertain.
- By leveraging EU support, foster the IHRS model to develop context-specific approaches to reach the different segments of the building and housing sectors, while allowing for sufficient flexibility so that consumers can choose their most trusted and qualified professionals.
- Involve relevant stakeholders in the development and management of IHRS to ensure that the tools are targeted to market needs and expectations, to increase the level of trust and to strengthen adequate communication and support (e.g., property owners, consumers' associations, and representative construction enterprise associations).
- Encourage and streamline the financial support and technical assistance provided by the European Investment Bank and other competent bodies to actors wishing to establish an IHRS.

Briefly, intensify the exchange of good practices on IHRS and overall, one-stop shops for energy efficiency at the European level.

As part of this project, EBC and UIPI will jointly set up an **International Advisory Board** (IAB) made of European representatives of EU frontrunners developing IHRS for condominiums, EU policy making actors, EU construction stakeholders (contractors, but also other actors that important in the IHRS supply chain), and EU building owners to monitor and give feedback on the findings and developments of the project. The IAB will convene three times, in M25, M34, M41, online or in Brussels. TUD will support by presenting project results and will also coordinate the knowledge exchanges with the LIFE-HOMERECOM Project EU Peers and any other EU-funded project dedicated to the topic of One-stop-shops for energy efficiency, to identify and the exploit potential synergies.

UIPI, EBC and the international advisory board will identify **10 specific regions/cities in at least 5 countries where they will organize a workshop together with local associations of contractors and property owners and supported by multiple local key players**. They will also organize a policy workshop in Brussels (during the EUSEW in Brussels). TUD will contribute with presenting project results on IHRS development for condominiums on 5 workshops. Indicative options include:

- Organization of public local workshops will take place together with local associations and frontrunners (e.g., EU project partners from INNOVATE, HOMERECOM), in the local language, to discuss the best means to potentiate IHRS for condominiums at the local level, by adjusting to local constraints the recommendations/findings of CondoReno. The objective is to have a large geographical coverage.
- Organisation of public webinars by at least two local associations to start a discussion on the creation of IHRS for condominiums in specific regions.
- Supporting existing workshops with specific sessions on IHRS for condominiums, e.g., organized jointly by EBC and FIEC (umbrella organization of EMBUILD and Bouwend Nederland), as part as the European Construction and Technology Platform activities, as part of EU Build UP or Build UP Skills activities, ECEEE summer study.

Specific opportunities to be further explored include:

- Hungary (via EBC member IPOSZ - an exploratory call to be organized)
- Sweden (via LNU or Lund University)
- France (via APC or in connection with the ECEEE conference in June 2024, or EBC member CAPEB)
- Bulgaria (via the sister project Multihome)
- Poland (via a connection with Embuild)
- Spain (via Opengela)
- Austria (via Hauskunft OSS)
- Slovakia (via EBC member SZZ - an exploratory meeting is planned in Bratislava on 25 March)
- Romania (via EBC member Cluster Zepher - an exploratory call to be organized)
- Italy (via EBC member ANAEPA-Confartigianato and CNA Costruzioni – discussion took place on 22 March)
- Germany, Greece and Czech Republic (via contact with EBC and UIPI)

On the one hand, to uptake the CondoReno project internationally, the project can draw on several organisations that signed the Letter of intent (LoI) from the **demand side**. Property and homeowner associations from Sweden, Germany and Spain have agreed to supporting the project through participating in local network meetings, workshops and advisory boards. Providing expertise from their national context, those associations ensure the access to property owners in different EU countries which will help CondoReno in finding EU wide solutions for label A renovations. The LoI providers also agreed in disseminating the project results, to increase awareness for the concept of IHRS, for example through an internal member association network and email campaigns but also through their social media accounts.

On the other hand, the international uptake of CondoReno can also rely on organisations that have signed a Letter of Intent from the **supply side**, such as national and European contractor associations and federations, as well as SME consulting companies. These actors have expressed their intent to participate in a wide range of activities foreseen in the project, such as workshops, meetings, and advisory boards, as well as providing support to the dissemination of project results. Therefore, they will bring valuable knowledge to the project, and will actively engage their audience in social media platforms, utilizing their reach and influence to spread the word about the project.

However, to be able to uptake CondoReno solutions internationally, the first results of the project need to be accomplished and materialised in the Netherlands and Flanders, which will serve as a benchmark for other geographical areas.

The strategy to set up the International Advisory Board (IAB) is expected to be defined in detail in the update of the next Deliverable on M18, considering that the first meeting of the IAB is foreseen on M25 (November 2024). However, a first brainstorming session between EBC and UIPI will take place in the upcoming months to define the steps and action points that will lead to the constitution of the IAB. In a preliminary way, these are expected to be the following:

- Selection of criteria to define the additional countries and cities in which the international uptake will be focused.
- Study of the relevant actors in the countries previously selected.
- Establishment of prioritization features among the actors mapped in the country.

Selection of actors in each country and engaging them by defining their participation, scope and contributions. IAB members should intend to support – and preferably also lead - multiplication and replication of IHRS for CAs in their region.

Section 3: A Roadmap to enabling IHRS replication among the project target audience

Table 2 illustrates the link between the objectives of the CondoReno project and the expected impact of the project, both at the end and 5 years after the conclusion of the project.

CondoReno objectives	Impact at the end of the project	5 years after the project
SO1 Create six exemplary IHRS business models **SO2** Develop tools and methods for IHRS to support CA financial decision-making **SO3** Demonstrate IHRS energy label A condominium renovations **SO4** Develop supply and demand for IHRS for condominiums **SO5** Multiply IHRS	• 4 IHRS for condominiums covering two types - market-supported and local authority-supported IHRS - implemented, operational and tested at the end of the project (+ 2 IHRS for condominiums implemented) • 4 strong and trustworthy IHRS partnerships, comprising at least 62 strong actor partnerships with local actors (SMEs, architects, engineers, ESCOs, financial institutions, energy agencies, NGOs) within IHRS • Implementation of 1 IHRS for condominiums business model including adequate financing offers based on living-cost neutral renovations, running without the need for public subsidies to cover running costs • Data and guidance made publicly available to facilitate replication of the approach by 19 energy houses in Flanders, and by means of 2 cross-sectoral agreements (NL, Flanders) and awareness raising in at least 10 EU countries. Scientific evaluation that the value of the services offered is recognised by the market.	• Self-sustaining IHRS supply towards CAs in the Netherlands and Flanders and creation of 34 such IHRS in other EU cities and regions. • Reduced energy use and carbon emissions. • Increased renovation rates.

Table 2 Relationship between CondoReno objectives and expected impact

The first step to enabling IHRS replication is to define the target audience for the project results. Figure 1 provides a starting point for this overview by identifying to what extent stakeholders participating in IHRS are currently engaged in renovation journey phases. This overview was developed within the CondoReno project.

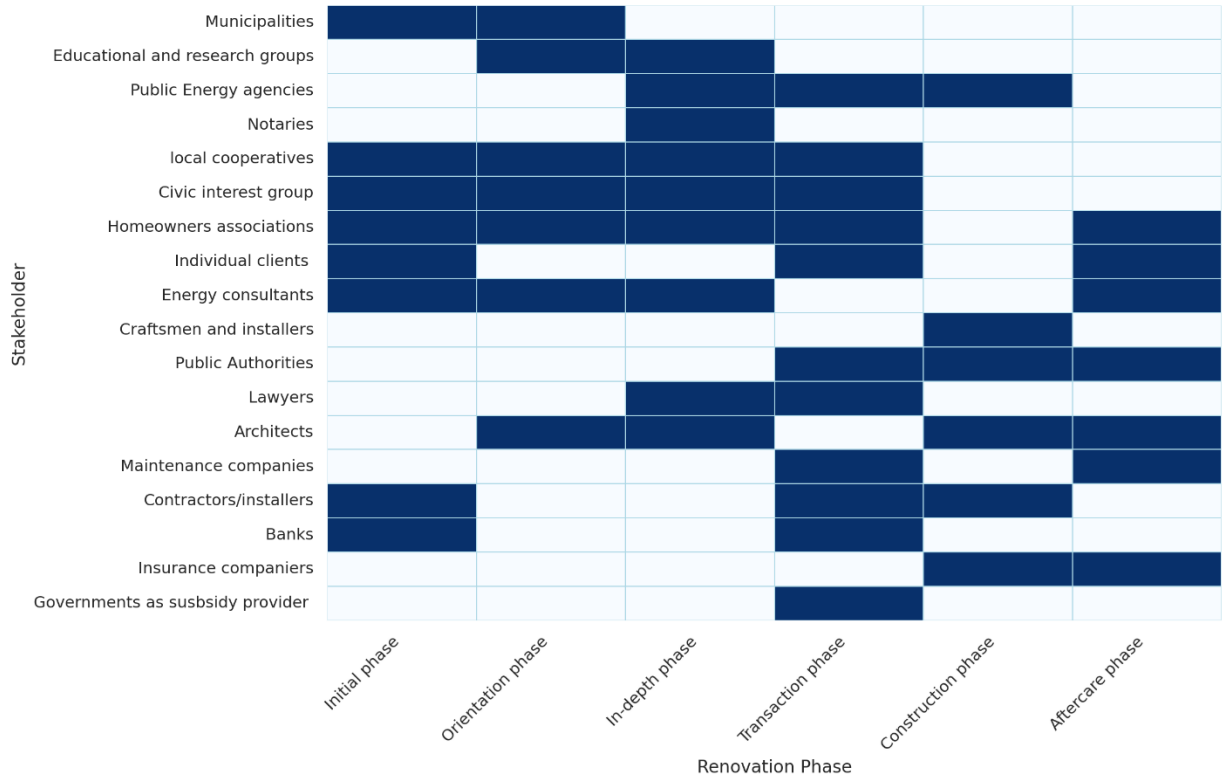

Figure 1 Stakeholders involvement in the renovation journey of condominiums (Source: own graphic)

Further detailed mapping of stakeholders for IHRS for CAs was carried out in WP2 of the CondoReno project. See the report Stakeholder classifications for IHRS for condominiums in the Netherlands and Flanders.

This work's outcomes enabled the identification of important key partners that must be included in the supply and demand side of IHRS. The report was developed jointly with input from stakeholders in the field (see the outcomes of a workshop held in Den Haag on 22 November, 2023). This serves as the framework for further outreach in the project. By identifying and understanding the various stakeholders involved—ranging from homeowners and association boards to service providers, financiers, and regulatory bodies—we have been able to tailor our business model propositions to cater to the nuanced needs and motivations of each group. This stakeholder mapping serves as a vital tool for facilitating targeted communication, fostering collaborative partnerships, and ensuring that the proposed energy renovation solutions are both inclusive and appealing. Through this nuanced understanding, we are better positioned to address potential challenges, leverage opportunities for constructive collaboration, and enhance the adoption and implementation of sustainable energy renovations within condominium associations.

3.1 Uptake and strengthening partnerships

CondoReno aims to **co-create local IHRS** for condominiums by focusing on the local development of IHRS supply and demand for condominiums. This includes 6 IHRS for condominiums. Table 3 describes the IHRS being developed, including:

- Three exemplary local authority-supported IHRS for condominiums in Antwerpen, Mechelen and Ostend
- Additional market-driven IHRS provided by WNR in the Netherlands and Embuild in Flanders

Country		**Project end value**	**Beyond 5 years value**
BE	Antwerpen (ANTW)	1 IHRS for CAs	1 IHRS for CAs
	Mechelen (MECH)	1 IHRS for CAs	1 IHRS for CAs
	Ostend (OOST)	1 IHRS for CAs	1 IHRS for CAs
	Embuild (EMBUILD)	2 IHRS for CAs	4 IHRS for CAs
	Remaining energy houses (incl. 13 cities)	-	17 IHRS for CAs
	Walloon Region	-	1 IHRS for CAs
	TOTAL BE	**5 IHRS for CAs**	**25 IHRS for CAs**
NL	WNR	1 IHRS for CAs	1 IHRS for CAs
	4 cities	-	4 IHRS for CAs
	TOTAL NL	**1 IHRS for CAs**	**5 IHRS for CAs**
Other EU	**TOTAL OTHER EU**	**-**	**2 IHRS for CAs**
Total		**6 IHRS for CAs**	**32 IHRS for CAs**

Table 3 IHRS Development in CondoReno

Together WNR, ANTW, MECH, OOST and Embuild aim for at least 62 additional **strong actor partnerships** within IHRS by the end of the project, and 23 strengthened actor partnerships. Antwerp, Mechelen and Ostend each will deliver strong local partnerships (total 3) involving municipal services for housing, energy houses and energy coaches, renovation/financial consultants, and a pool of contractors by the end of the project that can target CAs, specifically also promoting the (demos of) IHRS that can deliver energy performance guarantees and quality assurance. See Table 4.

Sector partnerships	Leading PP	Current situation IHRS partnerships for CAs	ADDITIONAL partnerships at the end of the project
Architects & engineers	WNR	-	t.b.d.
	ANTW	2 study offices	18 study offices
	MECH	-	5-10 renovation coaches
	OOST	-	t.b.d.
Condominium administrations	WNR	-	t.b.d.
	ANTW	8 CA's (15 guided)	28 CA manager agencies
	MECH	-	t.b.d.
	OOST	-	t.b.d.
Craftspeople, contractors, and installers	WNR	5 SMEs (members DNA in de Bouw)	t.b.d.
	ANTW	-	t.b.d.
	MECH	-	4 installers
	OOST	-	t.b.d.
	Embuild	-	6 companies
	WNR	City of Wageningen	3 additional Dutch cities

Public authorities and energy agencies	ANTW	-	t.b.d.
	MECH	-	t.b.d.
	OOST	City of Ostend	VEKA, Province of West Flanders
Retail banks/ Financing intermediaries/ brokers	WNR	-	SvN, WOAB
	ANTW	1 financial institute	1 financial institute
Training intermediaries	WNR	-	KERN
	ANTW	VIVO (real estate education)	t.b.d.
	MECH	-	Dialoog vzw
	OOST	-	t.b.d.
Energy saving/ marketing intermediaries	WNR	DNA in de Bouw (90 members)	t.b.d.
	ANTW	Samen Klimaatactief, FEREB (concrete repair)	t.b.d.
	MECH	-	Fluvius, Klimaan cvso, MilieuCentraal, Klimaan vzw, IGEMO
	OOST	-	Fluvius

Table 4 Starting situation for creating IHRS for CAs and expected goals at the end of the project

Co-creation, coordination, and optimization of the IHRS will be done with local stakeholders throughout the energy renovation process of condominiums by making best use of the local context, tools and methods, experiences from demo cases and by actively involving local stakeholders, such as CAs, CA managers, and local market actors.

The project aims for actors to collaborate to achieve high energy savings and improved implementation of energy saving measures in apartment buildings owned by multiple homeowners. This is a chicken-egg problem: CAs are not aware of IHRS providers and what they can bring, and IHRS for condominiums are not spontaneously created because there is no demand from CAs. A coherent coordination and support need to help CAs to decide to renovate and eliminate market infrastructure barriers for IHRS. Table 5 provides an overview of the **key barriers that CondoReno IHRS will help to eliminate**.

Barriers	**Examples of barriers that affect CA decision making for energy renovations**	**Project opportunities that affect CA decision making for energy renovations**
Policy and legal barriers	Lack of clarity of responsibilities of CAs. Division of private and common parts. Lack of coherent condominium energy governance policies. Complicated procurement procedures.	Clear communication of CA responsibilities in CA trainings. Assessing legal issues and condominium energy governance policies in national steering committees. Providing clear guidance to CAs and condominium managers related to (simplified) procurement procedures.
Market and economical	Lack of knowledge of, and consultancy for, CAs about investment needs and opportunities. Split-incentive problem. Lack of professional	Training of SME's and CAs about investment needs and opportunities. Solving split-incentive problems in CA meetings demonstrating opportunities for all to invest with payback and reduce living costs. Stimulating professional condominium managers to present sustainable renovation opportunities to CAs.

	condominium managers delivering renovations.	
Financial	Limited access to capital of individual property owners. Insufficient money in the reserve fund to invest in renovation. Lack of awareness about loans for CAs. Lack of knowledge about how (joint) renovation plans can affect (individual) living costs.	Providing clear instructions to CAs how to get capital via the CA and prepare the reserve fund to invest in renovation. Demonstrating early cost estimates and available loans for CAs. IHRS offering (joint) renovation plans and demonstrating the effect on (individual) living costs, integrating energy savings in payback schemes. Additionally, a collective fund development will be explored to create more certainty for the guaranteed performance and associated low energy costs/monthly costs.
Technical	Poor building physical quality. Lack of building maintenance planning. Lack of advice and renovation plans adapted to the building. Lack of step-by-step renovation guidance after an energy audit or feasibility study. Lack of demonstrated processes for renovation of certain building typologies.	IHRS updating multi-annual maintenance plans and delivering project-based advice and renovation plans adapted to the buildings, either for a deep renovation or a step-by-step plan (identifying packaged solutions or measures in a building renovation passport). Demonstrating how energy performance guarantees can be integrated in CA decision processes. Demonstrate a contingent approach for renovation.
Social/ behavioural	CAs coordinate renovations without having the time, capacities and knowledge. CAs only convene once a year, slow decision processes. Lack of trust towards market actors. Lack of interest in renovating common parts. Lack of sense of urgency among older co-owners leading to lack of willingness to invest as well	Professional IHRS suppliers offer to coordinate the whole renovation for CAs and work together with partners to deliver the needed time, capacities and knowledge. The solutions provided to property owners ensure a full range service path, from audit and feasibility plan, design of the whole renovation, creation of an ad hoc financial plan and provision of adequate/affordable funding, coordination of the process, implementation of the renovation and commissioning and quality checks for assuring performance guarantees. IHRS assure that CAs convene faster and guide CA decision processes towards renovation decisions in subsequent steps (1. feasibility study, 2. decision to renovate, 3. quality assurance). IHRS are promoted by governance actors as 'trusted' partners. IHRS demonstrate the importance of renovating common parts. IHRS demonstrate renovation solutions for the elderly.

Table 5 Key barriers that CondoReno IHRS aim to alleviate or eliminate

These barriers were discussed with stakeholders on various occasions (a.o. CondoReno workshops in Tiel and The Hague). As the market and financial barriers were considered especially important by multiple stakeholders, an expert group was composed from Dutch NAB members to discuss and unravel opportunities for a renovation and calamity fund for IHRS and CAs. The policy barriers will further be discussed by partners with stakeholders and advisory boards to bring forward national policy recommendations. These recommendations will serve as a basis for international policy recommendations.

The socio-technical barriers are addressed in focus groups. The current benchmark is that condominium renovation partnerships are project-based; the CAs see a fragmented supply side and that renovation; energy and service suppliers are not strongly connected with actors that support CA decision making and coaching. The IHRS counter this barrier by co-creating and maintaining partnerships beyond single projects and ad-hoc collaboration and procurement. At the end of the action, the project aims for systemic collaboration between diverse types of actors to approach CAs in an integrated 'renovation journey' approach.

The IHRS developed in CondoReno provide value with an integrated offer that can unburden the property owners as much as possible and that provides them with a single or only a few contact points for all issues related to understanding the process, evaluating options, managing the process, financing the renovation, and delivering a result. Local authorities and private actors can play a role to drive such IHRS.[4]

CondoReno puts an extra effort to investigate barriers and solutions also per decision-making phase. Figure 2 illustrates three key moments during the renovation journey where CondoReno is developing resources and insights. These are the key areas where the project can also scientifically support international IHRS development and evaluation and enable further replication.

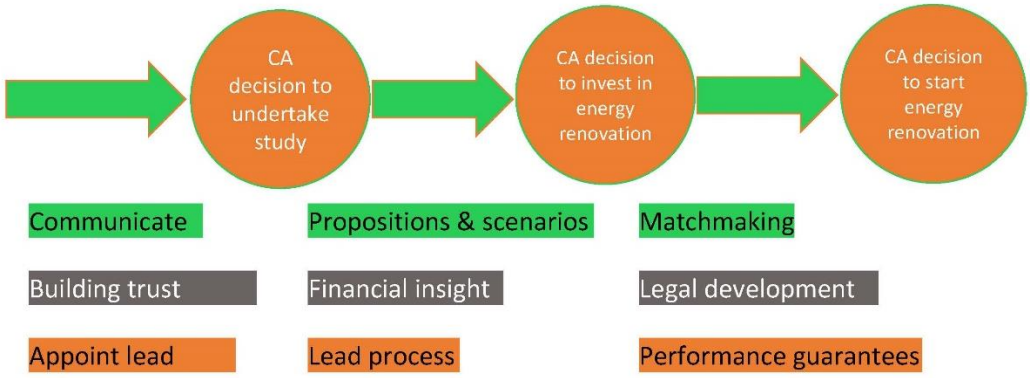

Figure 2 Key moments of opportunity along the customer journey for CondoReno support

Summarized, partners develop and optimize the IHRS consortia based on local experiences as one packaged offer to CAs and CA managers, to create local confidence and simplify the renovation processes of condominiums in specific regions.

Within 5 years after the project, CondoReno should lead to a comprehensive Flemish IHRS structure for condominiums embedded in all Flemish cities and energy houses and improvement of existing partnerships in the major cities in the Netherlands.

[4] This was exemplified in frontrunner EU projects, for example Facirénov (FR) in the Bordeaux region; Hauskunft (AT) in Vienna; Holadomus (ES) in Catalunya; Sunshine (LV); Superhomes (IE); Padova Fit in Padova with extension to two other cities; ACE retrofitting in Antwerp, Paris and Liège.

3.2 Trajectory to long-term impact

In the short term the project focuses on co-creation, developing partnerships and testing a toolkit and IHRS procedures on eight case studies by Mechelen, Antwerp, Ostend and WNR. Eventually this will support the visibility of dedicated IHRS for CAs and the presence of Flemish and Dutch coordinated actions and policies. Five years after the project it is intended that dedicated IHRS will be able to address 80% of the CAs in the major cities.

For long-term impact, CondoReno is engaging with other actors and intermediaries. For direct regulatory interventions such as statutory regulation, direct subsidies, taxes, and other economic instruments governmental actors are needed.

For achieving networks, partnerships, agreements, and covenants the involvement is needed of alliances, governments, NGOs, businesses, and citizen groups. For best-of-class quality assurance and certification, tripartite financing, green leasing, contests, and challenges, sustainable procurement might also be developed and implemented by non-governmental actors with governments at some distance.

Figure 3 summarizes the next TRLs for IHRS for CAs. Notably evaluation of the IHRS performance will play a key role for validating living-cost neutral IHRS.

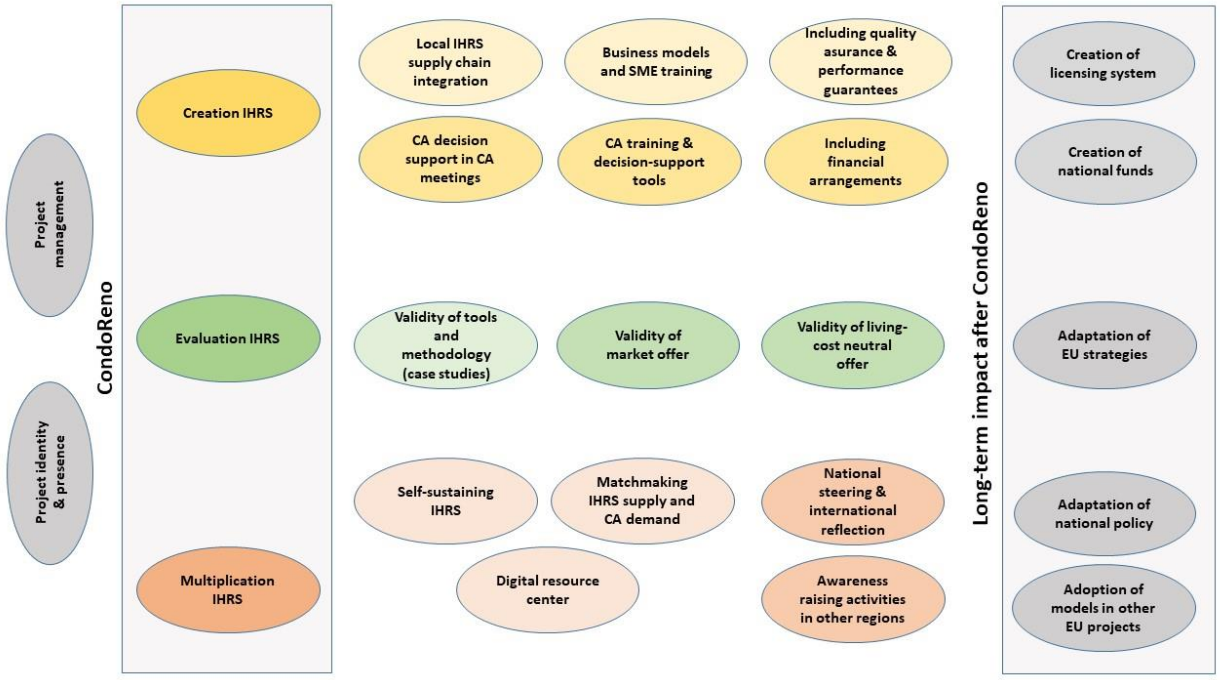

Figure 3 Key factors leading to long-term impact of creation and multiplication of IHRS for CAs

3.3 Sustainability of the project results

The three models driven by the Flemish local authorities might need limited further support after the project, which could be organized on a Flemish level or embedded within broader sustainability scopes. If Antwerp, Mechelen and Ostend succeed, the CondoReno model can be an integrated

tactical scope within their **long-term climate action plans**. Municipal energy reduction goals in climate plans might also be adjusted, for example for Ostend from 25 to 50% for the coming years until 2050. Ostend also aims for the market taking over the IHRS in the long term. The cities of Antwerp and Mechelen will foresee budget in their multi-annual budgeting plan to guarantee continuation of the IHRS. All partners will continue to perfect their IHRS model and expect to be able to continue their mission independently after the project. Favourable local authority IHRS support schemes will also be integrated in all Flemish Energy Houses with intended regional coordination by the Flemish Energy Agency. The three market driven IHRS (WNR, EMBUILD) will be self-sustaining after the project. Through this project also WNR might achieve **long-term collaborations** to support Dutch municipalities or to coordinate procured actions for them. The French CoachCopro network will target French local energy agencies to implement CondoReno results in France as well.

The Embuild IHRS support set up for companies will be integrated in the regular **helpdesk of Embuild**. Partners foresee to exploit more CAs independency in decision-making and will refer to developed IHRS market actors for guidance, execution, and quality assurance. To a considerable extent the market actors and CAs will also be able to use the resource centre for finding clients, contractors and for matchmaking, which might be further developed towards a **self-service-platform** for Flemish IHRS providers. Given sufficient interest in the Netherlands such resource centre might also be replicated there. As a minimum the resource centre will be maintained: the city of Mechelen intends to cover the cost of annual maintenance fees and will reserve IT budget during CondoReno; after the project it might be relevant to **transfer the resource centre to VEKA** so that all Energy Houses are served. CondoReno information and the developed toolbox for the supply side will remain available for Embuild member companies (more than 10.000 companies in Flanders) on the website of Embuild, who will also investigate during this project the possibility for **Embuild to integrate the digital resource centre in its regular offer**.

Embuild in Flanders and **KERN** in the Netherlands will guard the **longevity of trainings**, based on incomes from **licensing** coupled to training on quality assurance. The training modules developed in the project will be continued regularly and integrated in the regular offer of KERN and Embuild local offices (depending on demand of building companies), who already offer a large paying training programme. Furthermore, Flemish partner municipalities expect that trainings can be framed via **VEKA** in the offer of Energy Houses and via **CIB – VIVO** for CA managers. Furthermore, non-profit organisations like Pixii could develop trainings.

If demand for co-creation/business development workshops remains after the project, Embuild will set up "**learning networks**" with interested companies and other stakeholders to come to a working business model. This can be based on formats developed in the project (e.g., Business Zoo). Learning networks are now also part of the regular paying service offered by Embuild. TUD will continue research and manage research results in the scientific and LIFE EU Peers community and in **follow-up project proposals**. TUD, EBC and UIPI will maintain communication with EU stakeholders to share experiences also in other countries as part of regular valorisation work. After the project, the project web site and all deliverables will be archived in a publicly accessible repository. Overall engaged local stakeholders and national experts will be motivated to take up further action for creating or offering IHRS for condominium in multiple other cities and regions.

The developed investment concept will be further exploited and promoted by partners. The partners plan to develop a **TCO-tool** under the lead of KERN, who manages the tool afterwards (still under discussion). KERN will share the prototype that will be derived in this project with partners under free licence. At the end of the project, the CoachCopro platform, which was developed as a free and independent service to multiply energy renovation projects in condominiums, will have been introduced in the Flemish value chain. Demand side advisory services will be provided to CAs for their renovation project by implementation in Mechelen and testing of licensing in Ostend. Partners will outline how a platform could support a national professional community that works with **licensed CoachCopro advisors**. After the project, spill-over can occur to other types of condominiums, e.g., those who do not have an active CA board, condominiums (partially) owned by housing associations, mixed function condominiums, and so on.

Partners will use CondoReno models as a basis to include other policy goals such as local renewable energy production in dense urban areas through district heating (climate goals), high-quality housing (spatial planning and housing goals) and **other sustainability goals**.

Examples of further steps might also include (European Commission, 2023): standards to be agreed on, financing the testing, scaling up or production, promoting acceptance by consumers or other partners in a value chain. Policymakers may also establish follow-up steps to work the results into policies.

Partners could also consider support schemes for follow-up steps, e.g. (European Commission, 2023) national programmes, InnovFin, EFSI, Regional Funds, Enterprise Europe Network (EEN), European IPR Helpdesk, European exploitation support schemes (more on ESIC in the Work Programme), or check if there are any Boosters' services available.

3.4 Timeline

The following draft of this document will include timeline of advisory board contact moments, workshops and other key replication moments.

3.5 Evaluation of the Plan

The success of this plan will be measured through the project key performance indicators (KPIs). The project KPIs can be found in this document.

Annex 1: Stakeholders that expressed an intent to collaborate with CondoReno

The following stakeholders have signed a letter of intent to support the CondoReno project. They are being actively engaged in various aspects of the project including the advisory boards, through workshops, and on dissemination. Some stakeholders below may not be part of the advisory boards of the project but are actively engaged in other aspects of the project.

Architects/Consultants

Artuur	Belgium
Bureau Bouwtechniek	Belgium
Clabots Advocaten	Belgium
Core FM	Belgium
EPB Center	EU
Gevelinzicht	Belgium
Trema	Belgium

Beneficiary IHRS (CA or CA manager)

03 Beheer NV	Belgium
Carl Mariën beheer	Belgium
Fastighetsägarna Sverige	Sweden
HE-VO vastgoed	Belgium
Immosquare	Belgium
Insurea	Belgium
Sea'ndicus BV	Belgium
VME Lamot	Belgium
VME Oliveten III	Belgium
VME Residentie Riva	Belgium
VME Zandpoort	Belgium
VME Salvator	Belgium

Civic interest group or local cooperative

BBL - Bond Beter Leefmilieu	Belgium
Stichting Duurzaam Stoer	Netherlands
CIB	Belgium
Deelstroom Delft	Netherlands

Communication actors

Appartement tv	Belgium
Appartement en eigenaar	Netherlands

Contractors/ Installers

Agoria	Belgium
Buildwise	Belgium
Aannemersfederatie Nederland Bouw en Infra	Netherlands

bouwend nederland	Netherlands
Embuild Wallonië	Belgium
European Construction Industry Federation (FIEC)	EU
FEREB	Belgium

Educational or research actors

KU Leuven - HIVA	Belgium
AMS Institute	Netherlands

Energy agency or supply-demand intermediary

Alec 42	France
Alec Oest Essonne	France
APB Kamp C	Belgium
CAEU 94	France
TKI Urban Energy	Netherlands
Paris Climate Agency Director/ CoachCopro Network	France
Pixii	Belgium
Dubolimburg/ C-Real	Belgium
WVI	Belgium

Financing or insurance actors

Stimuleringsfonds Volkshuisvesting	Netherlands
Woonnu	Netherlands
KBC Bank NV	Belgium

Homeowners

Haus & Grund Deutschland	Germany
SNPC-NEMS	Belgium

Housing associations

Woonhaven Antwerpen	Belgium

IHRS supplier private (or aspiring)

DVvE	Netherlands
Energiesprong Alliantie	Netherlands
RenoseeC	Belgium
WOAB Woningabonnement	Netherlands

Policy Actors

Gemeente ‘s-Hertogenbosch	Netherlands
Gemeente Breda	Netherlands
Gemeente Rotterdam	Netherlands
province Gelderland	Netherlands
City de Liege	Belgium
City of Bruges	Belgium

Gemeente Den Haag	Netherlands
Ministerie van BZK	Netherlands
IGEMO	Belgium
Gemeente Brunssum	Netherlands
Provincie West-Vlaanderen	Belgium
Toulouse Metropole	France
VEKA (Flemish Energy and Climate Agency)	Belgium
Provincie Zuid-Holland	Netherlands
VVSG	Belgium

Associations

AIE/EuropeOn	
Confederation of Chambers of Urban Property and Associations of Owners of Urban Estates of Spain	
EHI (Association of the European Heating Industry)	
EURIMA	
EUROGAS	
RHEVA (Federation of European Heating, Ventilation and Air Conditioning Associations)	
Swedish Property Federation	

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