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# Intermediaries in Action: How Integrated Home Renovation Service Providers Engage Stakeholders in Energy Renovations for Homeowner Associations

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# Intermediaries in Action: How Integrated Home Renovation Service Providers Engage Stakeholders in Energy Renovations for Homeowner Associations

R Elgendy<sup>1\*</sup>, E Mlecnik<sup>1</sup>, H Visscher<sup>1</sup> and Q Qian<sup>1</sup>

<sup>1</sup> Department of Management in the Built Environment, Faculty of Architecture and the Built Environment, Delft University of Technology, Delft, The Netherlands

\*E-Mail: r.elgendy@tudelft.nl

**Abstract.** Across Europe, homeowner associations (HOAs) are increasingly recognised as pivotal entities in the energy renovation of condominiums, which are essential for achieving the EU's energy efficiency targets. However, the success of such renovations hinges on the active involvement and effective collaboration of diverse stakeholders throughout the renovation journey, from project initiation to post-renovation operation. This paper aims to map stakeholders involved in energy renovations supported by intermediaries for HOAs, categorise their roles, and analyse their relationships to better understand collaboration dynamics. By investigating these stakeholder interactions, the study seeks to identify opportunities for improving stakeholder engagement, optimising IHRS coordination, and unburdening HOAs throughout the renovation process. Using an iterative approach that combines desk research, focus groups, and interviews, this study identifies the relationships between renovation intermediaries and potential stakeholders for condominium renovations. The findings of this study highlight that successful energy renovations require the involvement and effective coordination of multiple stakeholders. Achieving comprehensive condominium renovations necessitates a public-private collaboration, ensuring that all financial, technical, and regulatory aspects are adequately addressed. The findings provide actionable insights for intermediaries such as one-stop shops, policymakers, renovation service providers, and HOAs, enabling them to enhance collaborative frameworks, streamline processes, and develop strategic actions. By strengthening public-private cooperation, these insights support the efficient implementation of energy renovations and the unburdening of HOAs throughout the renovation journey. This study contributes to the development of integrated renovation pathways that are efficient, scalable, and sustainable.

## 1. Introduction

The Energy Performance of Buildings Directive (EPBD), enacted in April 2024, implements crucial updates to hasten the decarbonisation of the building sector throughout the EU (1,2). Member States of the EU need to establish and manage technical assistance facilities, including one-stop shops (OSS), to support all stakeholders involved in building renovations. These facilities are designed to offer streamlined information and comprehensive support, with a particular focus on households experiencing energy poverty and the worst-performing buildings (3).

Accordingly, several European countries have established OSSs to facilitate energy renovations in the housing sector (4). These OSSs operate under diverse organisational structures and business models (5–7), reflecting variations in market demands, policy frameworks, and geopolitical contexts. Recently, Member states such as the Netherlands and Belgium have intensified efforts to accelerate energy renovations, with a focus on apartment buildings (8,9).

Apartment buildings represent the most common housing type in Europe (10), making their decarbonisation a critical focus. These buildings can be privately owned, publicly owned (e.g., social housing), or mixed ownership due to the privatisation of social housing (11). Privately owned and mixed-ownership apartment buildings typically fall under the jurisdiction of homeowners associations (HOAs), which include individual co-owners but also can include entities owning multiple units, such as housing companies (6). HOAs are responsible for maintenance and renovation decisions, often through an elected board (12). Larger buildings may employ a condominium manager to implement board decisions, though in some cases, this role is assumed by a voluntary co-owner (13,6).

HOAs face numerous barriers throughout the energy renovation process (14). Integrated home renovation services (IHRS) have emerged as a potential solution to overcome these challenges (15,16,6). These services, provided by innovative intermediaries ranging from public and private organisations to public-private partnerships, aim to manage, coordinate, and connect key stakeholders (5). Such intermediaries play a critical role, as the success of energy renovations often hinges on active stakeholder coordination and trust rather than solely on technical solutions, which are generally well-established (17,18). Energy renovations encompass a range of tasks, from conducting energy audits to managing post-renovation activities (19,6). These tasks involve multiple stakeholders, each contributing specialised expertise (15). Effective coordination of these stakeholders is crucial to ensure a seamless and efficient renovation process (17,20). Intermediaries play a pivotal role in this context, serving as the central entity that facilitates communication and collaboration among stakeholders (18).

Several studies have explored the roles of market actors in the renovation value chain (4,20,15) and the role of intermediaries in supporting collaboration (18,21,22). However, a significant gap remains in identifying the necessary stakeholders for condominium renovations and the role of intermediaries like IHRS providers in fostering collaboration to facilitate energy renovations for HOAs. This raises the question: Which stakeholders are essential for condominium energy renovations, and how do Integrated Home Renovation Service Providers Engage Stakeholders in Energy Renovations for Homeowner Associations?

Recognising Europe's diverse regulatory frameworks, this study examines the evolving market and growing HOA renovation support in the Netherlands and Belgium. The Netherlands fosters market-driven intermediaries, while Belgium relies on public energy houses and government initiatives, such as those of the Flemish government.(8,23–25). The structure of this paper is as follows. Section 2 describes the methodology used in this paper. The results and discussion are presented in section 3. Conclusions are drawn in section 4.

## 2. Methods

This study is conducted within the framework of the CondoReno project, using its extensive network to explore stakeholder collaboration in energy renovations for HOAs in the Netherlands and Flanders. It builds upon previous and ongoing research that has analysed 14 business models of IHRS providers(5,6) and is currently testing four business models across eight projects.

This study follows Reed et al.'s (2018) framework by identifying and mapping stakeholders, categorising them, and analysing their relationships (26). By applying these steps, we can examine IHRS provider-stakeholder interactions, aligning with established business management approaches that assess stakeholder influence on firm success.

An iterative approach was used, combining desk research, insights from European projects, two expert focus groups and four interviews with IHRS providers. This ensured a comprehensive exploration of both theoretical foundations and practical perspectives. This methodology was well-suited for examining IHRS provider-stakeholder interactions, with focus groups fostering collaboration(27) and interviews providing deeper role-specific insights(28). However, potential limitations, such as dominant voices in focus groups and the qualitative method's limited generalisability, were mitigated through cross-validation and diverse stakeholder inclusion.

### *2.1. Initial Stakeholder Mapping*

According to Mitchell et al., "Stakeholders are persons or groups with legitimate interests in procedural and/or substantive aspects of corporate activity" (29). The first stage involved desk research in identifying stakeholders essential for energy renovations of HOAs. This review included recent scientific articles (4,18,30,20,15,31,6) and reports from recent and ongoing European projects (16,32,24). The findings generated a preliminary list of essential stakeholders.

### *2.2. Differentiation between and categorisation of stakeholders*

Two focus groups were conducted to validate and refine stakeholder roles. The first focus group included 17 experts from diverse sectors, such as construction companies, municipalities, intermediaries, the Ministry of Housing, provincial authorities, researchers, quality assurance, a construction union, and a banking expert specialising in sustainable renovation loans. Its goal was to identify stakeholder roles and align them with different renovation stages.

The second focus group, with 15 experts from similar backgrounds, further refined our categorisation of stakeholders and their roles. To incorporate the demand-side perspective, additional insights were drawn from online podcasts featuring homeowners who renovated their condominiums and case study experiences (33) documenting completed renovation projects.

### *2.3. Case studies and social network analysis*

Two IHRS cases were selected from fourteen analysed cases to validate the stakeholder analysis and examine relationships using social network analysis. A public model from Flanders and a private model from the Netherlands were studied over the past two years. These cases were selected precisely because they already attempt to engage a broad range of stakeholders, offering a real-world context to examine not only how stakeholder engagement is structured but also whether key actors are willing and able to participate.

## **3. Results and discussion**

Our analysis began by identifying the stakeholders involved in HOA renovations and categorising them based on their organisational structure using Institutional vs. Market-based Stakeholder model (34) and their level of involvement as primary, secondary or external stakeholders. These categorisations reflect the stakeholders with whom IHRS providers collaborate. Intermediaries can operate as OSSs offering advisory services, facilitating and coordinating renovations, or providing all-inclusive services where they manage the entire process (35,15,5). Regardless of the Intermediary business model, they need to engage with relevant stakeholders from the outset to ensure an integrated approach.

Various terminologies in the literature, such as core, direct, and indirect stakeholders, or main, internal, and external stakeholders, or Key, primary and secondary stakeholders, have been used to describe the stakeholder level. In this study, we adopt the terms primary, secondary and external stakeholders to maintain consistency (36,37).

The Primary stakeholders are individuals or groups critical to the success of a project or organisation; their involvement and support can heavily influence outcomes due to their power, legitimacy, and urgency (38). Secondary Stakeholders are those who influence or are influenced during the project and can provide indirect support (38,34). External Stakeholders, or stakeholders with lower salience, can directly or indirectly affect the project or decision. They often include government agencies, local communities, and NGOs that may influence or be influenced by an organisation but are not directly involved in its core activities (29,38).

### *3.1. Categories of Stakeholders involved in the renovation journey of Homeowners associations*

This section presents an initial stakeholder categorisation based on literature insights and the first focus group. Stakeholders involved in IHRS for HOAs are grouped into six categories (see Table 1). Demand actors represent the customer segment seeking IHRS. Supply consulting stakeholders provide advisory services, while supply execution stakeholders focus on implementation. Supply financial solutions are stakeholders that can facilitate energy renovations through financial support, like funds, loans or guarantees. The public sector plays a regulatory and facilitative role, and other intermediaries contribute to its development and support.

**Table 1.** Categories of Stakeholders involved in the renovation journey of Homeowners associations

Stakeholder categories	Stakeholder
1. Demand actors	Co-owners, HOA board, Social housing co., Condominium managers
2. Supply Consulting	Renovation coaches, Architects, Study office/engineers, real estate brokers, and Consultants like Legal, Financial, social, communication and IT, and energy/sustainability consultants
3. Supply execution	Contractors, installers, Energy distribution net, material producers, Energy producers, Maintenance companies
4. Supply financial solutions	Banks, investors, Notaries, Insurance co., Financial and guarantee funds
5. Public sector	Municipalities, Energy houses, local HOA, energy and housing desks, ministries, provinces, Public knowledge, and standardisation institutions
6. Other intermediaries	Project managers, Energy cooperatives, Neighbourhood associations

### *3.2. Stakeholders' Potential Roles in Offering IHRS for Homeowners Associations*

In the IHRS framework, various stakeholders must be effectively organised and managed by the IHRS provider to ensure a streamlined renovation process (35,15). As shown in Figures 1 and 2, multiple stakeholders can contribute to different renovation tasks, with some playing primary roles. Key among them is the HOA board, representing co-owners and acting as the client representative (12,6). In mixed HOAs, social or private housing companies function as co-owners, requiring alignment with their goals. Municipalities play a vital role in facilitating services

adapted to the needs of HOAs (16) and granting permits. Larger municipalities often have energy houses (energiehuizen) or housing desks (Woonkantoren) in the case of Flanders or energy desks (energieloket) and HOA desks (VvE-loket) in the case of the Netherlands that have complementary roles of supporting HOAs.

Financial support comes from institutions like the Dutch Warmtefonds (Heating fund), while agencies like the Flemish Energy and Climate Agency (VEKA) and the Dutch Ministry of Internal Affairs provide oversight and incentives. On the implementation side, general contractors emerge as primary stakeholders, starting from the tendering and selection phases through to trust-building and the execution of renovation works. Project managers (when appointed) coordinate supply and demand sides, and renovation coaches (either internal or external) guide HOA boards through decisions. These roles ensure financial and technical coordination between stakeholders.

Secondary stakeholders include architects (mandatory in Flanders), study and engineering offices, legal and financial consultants, and local HOA or energy desks. Their roles vary but are critical throughout the process.

Social consultants facilitate co-owner engagement, while professional condominium managers may support communication but often fall outside the renovation scope (14). Co-owners are essential decision-makers but are usually engaged via the HOA board. Other secondary actors include notaries and subcontractors.

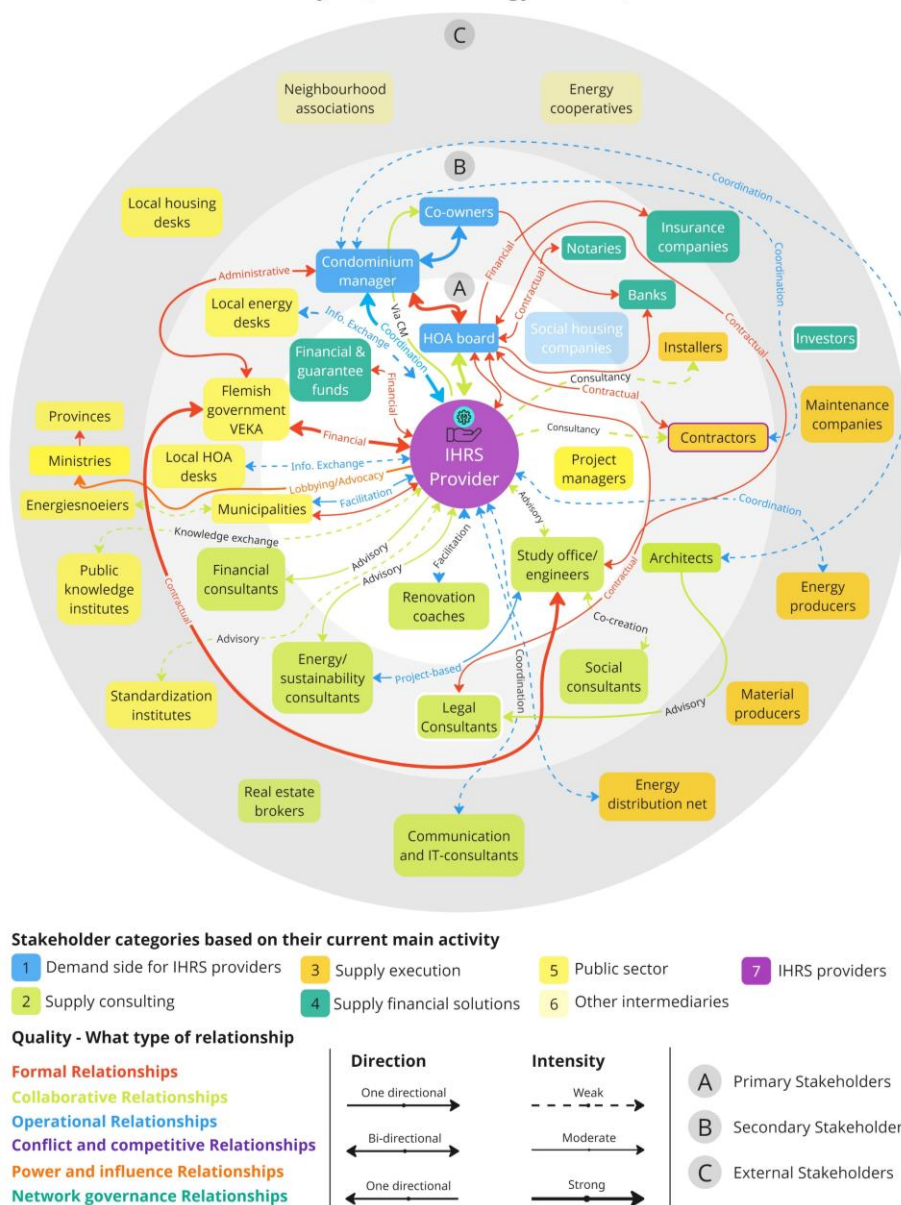
External stakeholders, though less directly involved, can still influence outcomes. These include real estate brokers, IT consultants, investors (e.g., in rooftop extensions), public institutions, ministries, and energy distribution networks. Material producers, ESCOs, maintenance firms, insurers, energy cooperatives, and neighbourhood associations also support project success through resources, expertise, and advocacy.

### *3.3. Investigating relationships between stakeholders*

From a management perspective, intermediaries must clearly define the role of each stakeholder at every stage (39). To explore this, interviews were conducted with representatives of the two case studies that were selected as representative examples of IHRS intermediaries from the Netherlands and Flanders. The relationship types, directionality, and intensity were defined using stakeholder network analysis methods. Interviewees were first introduced to these categories and then asked to describe their interactions with other stakeholders, including who initiates contact, how frequently they interact, and how important the relationship is. To validate this, we also interviewed some of the connected stakeholders and used insights from two years of observations in the two IHRS cases. This triangulation allowed us to assess both the direction and strength of relationships with greater accuracy. It was then shared for validation with the interviewees and later with two additional IHRS providers. Figure 1 illustrates the relationship between public IHRS providers and stakeholders in condominium renovations, based on the Energy House case study in Flanders and validated by other public energy houses in the region. This model acts as a facilitator for HOAs, relying on public funding, government-backed loans, and policy-driven incentives to support renovations. Results from the focus groups and the interviews indicate that the public IHRS model acts as a facilitator, engaging closely with municipalities, Condominium managers, HOA boards, VEKA, and (internal) renovation coaches to provide financial security, regulatory alignment, and social inclusivity for HOAs. It focuses on public-backed loans and grants, ensuring that renovations are affordable and policy-compliant.

However, project execution is outsourced to external technical actors (engineers, study offices, and contractors), leading to delays due to bureaucratic processes. Additionally, since public IHRS providers primarily guide rather than directly manage projects, HOAs must rely on fragmented technical and financial support systems. In this model, HOAs are required to collaborate with pre-approved study offices designated by the Flemish government, which are responsible for developing a master plan when HOAs engage with the Energy House.

**Stakeholder network analysis\_ Public Energy houses, Flanders**



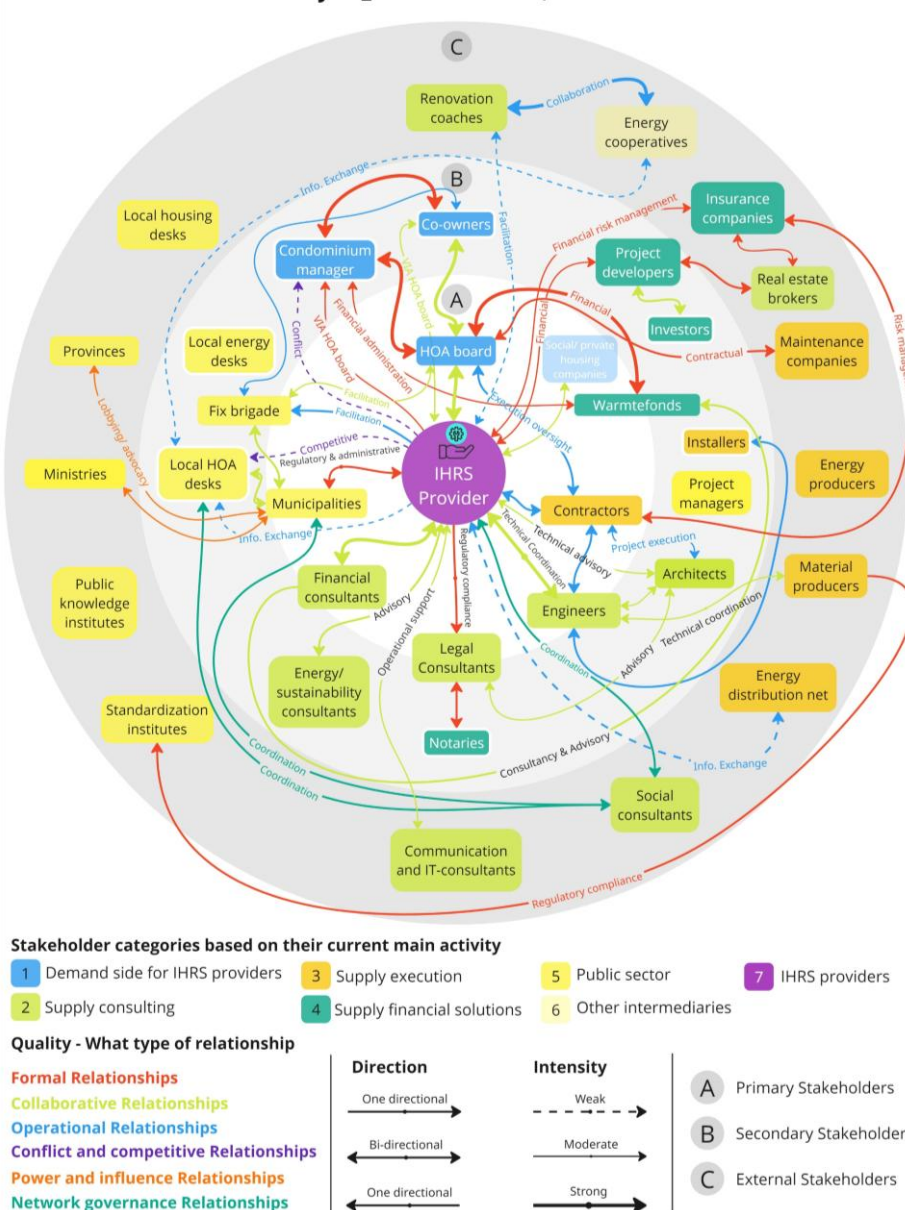
**Figure 1.** Stakeholder network relationships and mapping for the development of Public IHRS for HOAs. Source: Author's synthesis based on Interviews and expert focus groups.

Figure 2 illustrates the relationship between the private non-profit IHRS provider and key stakeholders in condominium renovations, based on a case study in the Netherlands. This model operates as a commercial service provider, acting as a coordinator for HOAs.



Findings from the interviews and focus groups indicate that the private IHRS model has strong relationships with the HOA board, municipalities, investors, financial consultants, engineers, and contractors, ensuring faster project execution and financial flexibility. Unlike the public model, private IHRS providers directly coordinate and execute renovation projects, making them more efficient in delivering results. However, their reliance on private capital increases financial risks for homeowners, as funding primarily comes from loans, private investments, and guarantee funds rather than grants. Moreover, the absence of strong public collaboration means that private IHRS providers must navigate complex permitting and regulatory frameworks independently, adding administrative hurdles.

**Stakeholder network analysis\_ Private model, Netherlands**



**Figure 2.** Stakeholder network relationships and mapping for the development of Private non-profit IHRS for HOAs. Source: Author's synthesis based on Interviews and expert focus groups.

### 3.4. Discussion

The social network analysis reveals how public organisations like VEKA and municipalities play a leading role in the public model, facilitating funding access, regulatory compliance, and social support services. In contrast, private IHRS models in the Netherlands have limited direct engagement with municipalities, interacting with them for permit approvals and regulatory compliance. While public IHRS providers collaborate with energy cooperatives and Fix Brigade to provide low-income homeowners with minor repairs, private IHRS providers depend on engineering firms, real estate brokers, and project developers.

Both models operate with distinct approaches. The public IHRS model prioritises financial security, policy integration, and social inclusivity, ensuring broad accessibility for homeowners. However, bureaucratic delays, slow execution, and limited direct project management hinder large-scale renovations. In contrast, the private IHRS model enables faster execution, financial flexibility, and market-driven innovation but faces challenges such as higher financial risks, limited access for low-income homeowners, and regulatory compliance barriers.

A public-private hybrid IHRS model for both the Netherlands and Flanders could leverage public financial support with private efficiency, ensuring scalability, financial accessibility, and regulatory compliance. To enhance stakeholder collaboration, municipalities could streamline permitting for private IHRS providers and integrate private financing solutions into public renovation programs, allowing HOAs to access blended financial models combining grants, government-backed loans, and private capital. Additionally, early-stage engagement between municipalities, engineers, and contractors can ensure better financial planning, technical feasibility, and risk-sharing mechanisms for homeowners.

Furthermore, Energy cooperatives, social consultants and renovation coaches could play a crucial role, helping homeowners navigate social, financing, and technical solutions. At the same time, contractors should be included in stakeholder engagement discussions, ensuring better alignment of technical execution with policy objectives.

To enhance the effectiveness of IHRS models, a public-private collaboration framework could be developed and supported by strengthened knowledge-sharing and matchmaking platforms, as seen in France (CoachCopro) and Austria (Qualitätsplattform Sanierung) (6,7). Establishing clear policy guidelines that ensure public funding mechanisms complement private IHRS financing models. Expanding blended financial models by integrating public-backed loans, private investments, and guarantee funds would provide more accessible and flexible financing options for homeowners. Additionally, streamlining permitting and regulatory processes through fast-track approval systems for certified IHRS providers can help reduce administrative delays and accelerate project implementation. A unified advisory platform can be established between cities where tools and resources can be shared and where public and private IHRS providers offer homeowners financial guidance, technical resources, and renovation support. Lastly, improving contractor and material standardisation coordination by facilitating joint public-private discussions on renovation material standards and construction processes will ensure cost-effective and policy-aligned solutions for large-scale energy renovations.

## 4. Conclusion

Stakeholder engagement by IHRS providers differs between public and private models due to factors like organizational structure, regulations, and potential conflicts of interest. Public models engage less with private actors to maintain neutrality, while private models have limited interaction with public bodies and condominium managers. These differences reflect each

model's governance and strategic focus. The future of IHRS lies in stronger public-private collaboration, combining government-backed financial security with private-sector efficiency. Policy reforms, better financing, and improved stakeholder coordination can help accelerate affordable, compliant, and efficient energy renovations for HOAs. Future research can focus on analysing these relationships and exploring how IHRS providers can effectively organise, coordinate, and manage the entire renovation journey of HOAs.

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