



WORKSHOP

Collaboration models for energy renovation

Erwin MLECNIK, TU Delft

Workshop @ Speeding Up the Energy Transition in Existing Buildings: Innovation through Collaboration
Old Library, Delft, 18 November 2024



This project has received funding from the European Union's Programme for Environment and Climate Action (LIFE) MGA — Multi & Mono, under grant agreement No. 101076316.

Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.



Collaboration models for energy renovations

ROUND TABLE

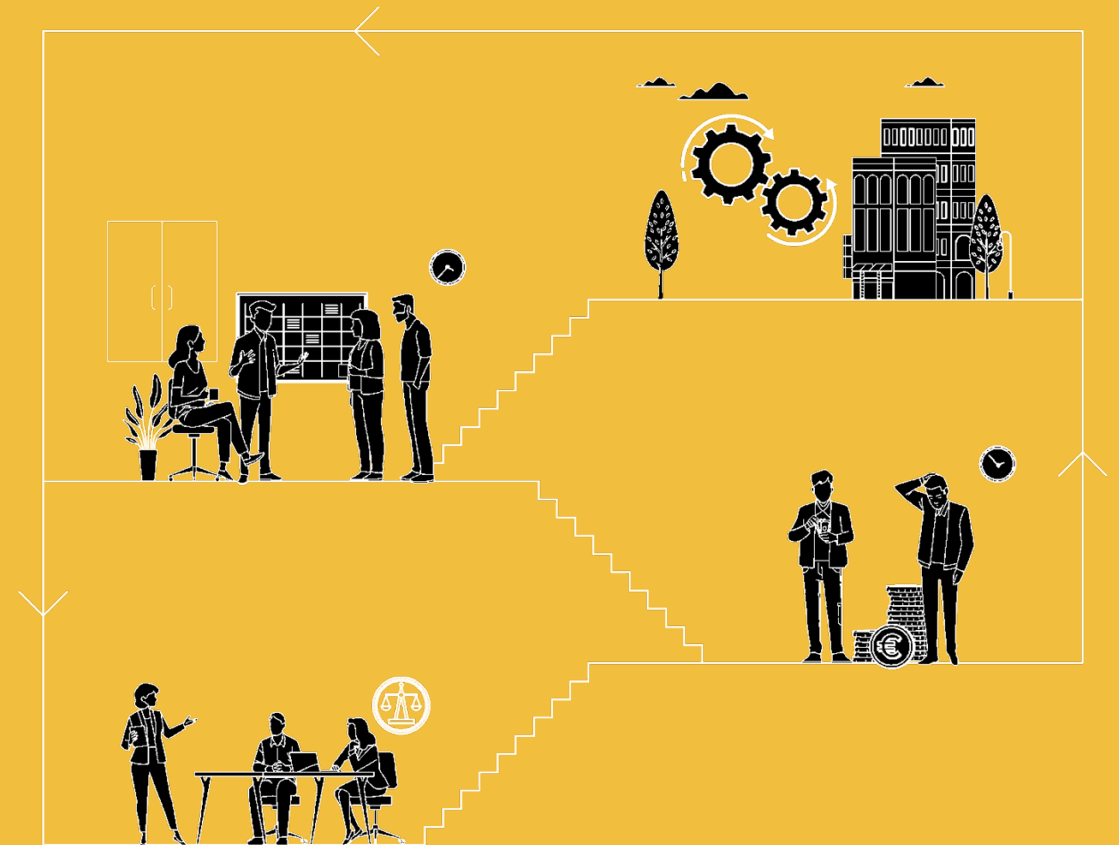
Who are you?

What are your expectations of this workshop?

Collaboration models for energy renovations

Speeding up renovations of buildings owned by multiple owners requires a different way of doing business.

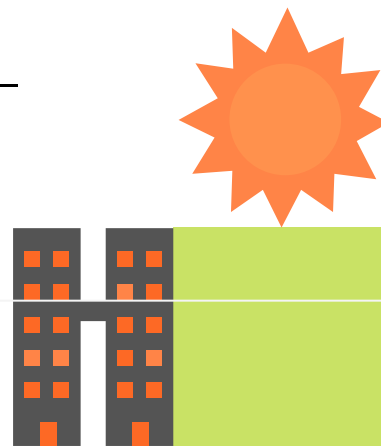
This session mainly offers insights about new business models and collaboration structures that help homeowners to jointly pursue a whole renovation trajectory.



WORKSHOP AGENDA

Collaboration models for energy renovation

Time	Topics
13:00 – 13:15	Round table - participants and their expectations
13:15 – 13:25	The WNR collaboration model for renovating apartment buildings owned by homeowner associations - Walter van Steenis WNR
13:25 – 13:35	Exploring collaboration models for renovating housing owned by mixed stakeholders - Olivier Lauteslager Verbouwstromen
13:35 – 13:45	Business models for Integrated Home Renovation Services for targeting homeowner associations - Ragy Elgendy TUD
13:45 – 14:15	Q&A and discussion with the audience on the way forward Moderated by: Guus Mulder TKI Urban Energy
14:15	Moving back to plenary room for key takeaways - Erwin Mlecnik TUD



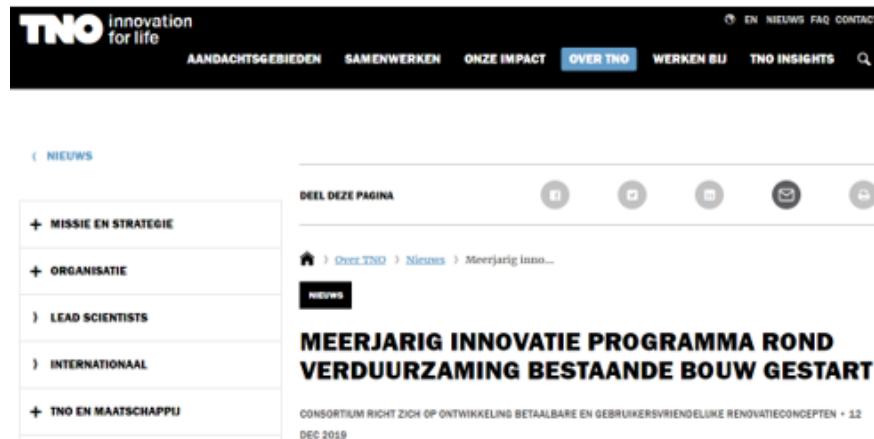
WNR collaboration model

**for renovating apartment buildings owned by
homeowner associations**

Walter van Steenis, WNR

› IEBB- INTEGRALE ENERGIETRANSITIE BESTAANDE BOUW, STICHTING WOONLASTENNEUTRAAL RENOVEREN (WNR) DEELPROJECT 7.5

- WNR collaboration model for renovating apartment buildings ‘owned’ by a condominium association (CA)
- Major risks, major uncertainty (CondoReno)
- Examples of projects



This presentation was made possible in part with financial support from the MMIP 3&4 scheme of the Ministry of Economic Affairs & Climate and the Ministry of the Interior & Kingdom Relations



WoonlastenNeutraal Renoveren

Walter van Steenis, CEO

INTEGRALE ENERGIETRANSITIE
BESTAANDE BOUW

WNR COLLABORATION MODEL FOR RENOVATING APARTMENT BUILDINGS 'OWNED' BY A CONDOMINIUM ASSOCIATION (CA)

- **WNR method**

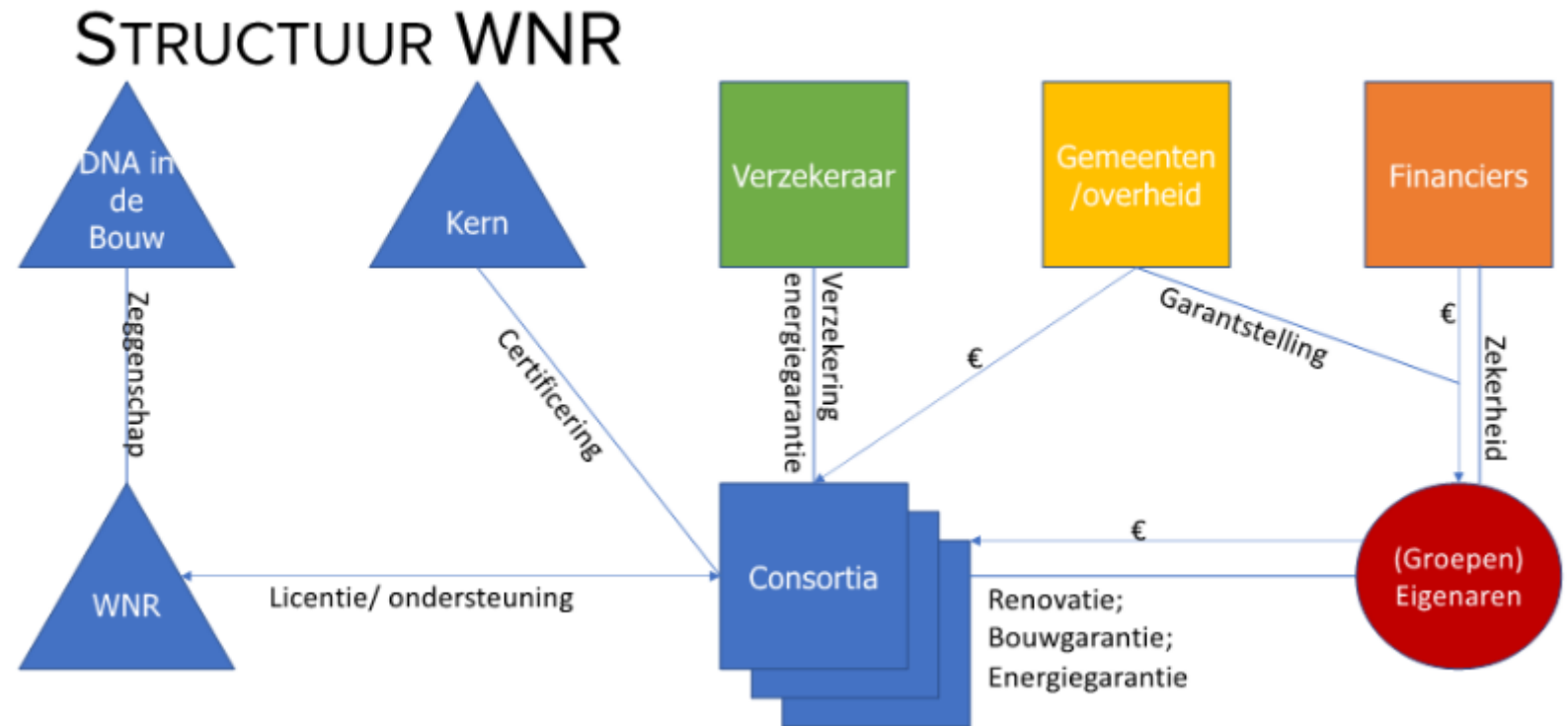
- Comprehensive guidance, from initial advice to renovation and aftercare with energy performance guaranty
- Aiming to offer high-quality renovations (label A or better), living cost neutral or as optimally as possible
- Based on demand of the supply side, the already existing cooperation with Vereniging DNA in de Bouw, an association of SME in energy saving, architects and construction



WNR COLLABORATION MODEL FOR RENOVATING APARTMENT BUILDINGS 'OWNED' BY A CONDOMINIUM ASSOCIATION (CA)

WNR structure

- WNR's organizational chart is entirely based on facilitating collaboration
- Foundation WNR was successfully established June 19, 2020
- high quality is necessary to guarantee energy performance



WNR COLLABORATION MODEL FOR RENOVATING APARTMENT BUILDINGS 'OWNED' BY A CONDOMINIUM ASSOCIATION (CA)

- **Cooperation is crucial, especially the role of the municipality**
 - Neighbourhood approach, planning
 - A collective heating grid, municipal heat vision (Transitievisie Warmte)
 - Flora and Fauna, legislation, permits and cooperation with other CA's
 - Environmental Quality Commission, permits
 - Security of existence, vulnerable groups
 - Social housing associations, determine priorities



> Mijn Amsterdam

Onderwerpen Nieuws Contact

Home > Wonen en leefomgeving

Verduurzaam uw vve-gebouw



Heeft u een koopwoning en maakt deze woning onderdeel uit van een vereniging van eigenaren (vve)? Dan bent u samen met alle vve-leden verantwoordelijk voor het onderhoud van het gebouw. Zoals bijvoorbeeld onderhoud aan dak, gevel, parkeerplaatsen en lift. Steeds meer vve's voeren onderhoud uit in combinatie met verduurzamingsmaatregelen om energie te besparen.

INTEGRALE ENERGIETRANSITIE
BESTAANDE BOUW

› WNR COLLABORATION MODEL FOR RENOVATING APARTMENT BUILDINGS ‘OWNED’ BY A CONDOMINIUM ASSOCIATION (CA)

- **Conclusions**

- The hypothesis that renovation with a neutral impact on housing costs should be possible
 - This has been proven theoretically
 - Now we prove it in practice
- There are still some mayor barriers, with huge risk the process stops
- Further research is needed



Major risks, major uncertainty

- CA board,
- no professional clientship
- Board members are volunteers
- Volunteerism is not without obligation
- Many quarrels and internal feuds
- Strict guidance, Roadmap
- Who pays decides



RASCI table

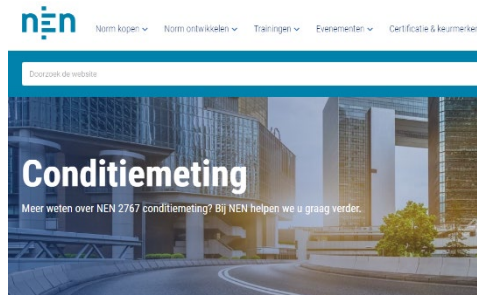
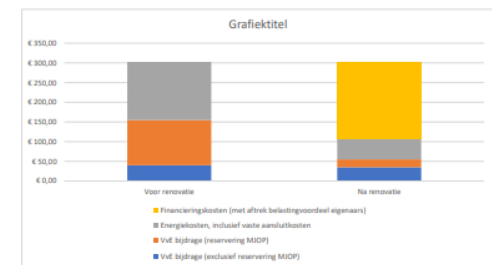
	Proceseigenaar (W/N)	Procesbegeleider functioneel	Procesbegeleider technisch	Bewonerspecialist	Kwaliteitsmanager	Financieel adviseur	Architect/bouwkundig bureau	Bouwkundig adviseur	Bouwkundig adviseur	Bouwkundig adviseur	Bouwkundig adviseur	Bouwkundig adviseur	Constructie	Inballieft	Aannemer	Ecoloog	Afbesoerlijks	Bouwkost specialist	Jurist	VVE leden	VVE bestuur	VVE beheerder	Gemeente
1. Team samenstellen	A	S	R																				
2. Bewonersonderzoek uitvoeren	A				R																	I	C
3. Financieel kader opstellen	A	R				C											C					I	C
4. Functionele eisen opstellen (of aanpassen)	A					R																I	C
5. Functionele prestaties opstellen	A	R			S			C	C								C						
7. Opname bestaande situatie	A						R														I		C
7.1 Uitwerken bestaande situatie	A					C	C	R															
8. Technisch ontwerp maken (of aanpassen)	A		R			C			C	C	C	C	C	C			C	S					
11. Check met functionele prestaties	A		R																				
12. Voer de financiële doorrekening uit	A				R																		
13. Check met de financiële kaders	A				R																		
8.1 Voer de onderzoeken uit	A		R						C	C	C				C	C							
17. Breng de subsidie aanvragen in kaart	A				R																		
18. Breng de financieringsmogelijkheden in kaart	A				R																		
19. Breng de vergunningsaanvragen in kaart	A					R																	
20. Maak een nieuwsbrief	A																				I	R	
21. Beleg een ALV	A																				I	R	

Major risks, major uncertainty

- Providing insight into housing costs before and after renovation is essential
- Current housing costs are structurally too low, the reserve for major maintenance is too low
- Tightening requirements in legislation and regulations can be valuable in this regard
- Attention for (vulnerable) owners who get into financial difficulties

Aanleveren gegevens	Aantal woningen 175	
Kosten/jaar voor renovatie	Individueel	Collectief
VVE bijdrage (exclusief reservering MJOP)	€ 480,00	
VVE bijdrage (reservering MJOP)	€ 1.380,00	
Energieverbruik elektriciteit (normaal)		€ 6.900,00
Energieverbruik elektriciteit (dal)		€ 7.900,00
Energieverbruik aardgas		€ 263.500,00
Opbrengst zonnepanelen (normaal)		nvt
Opbrengst zonnepanelen (dal)		nvt
Vaste kosten elektra aansluiting		€ 14.750,00
Vaste kosten gas aansluiting		€ 45.850,00
Investering renovatie	Individueel	Collectief
Investering renovatie per appartement	€ 78.000,00	
Investering onderzoekskosten en procesbegeleiding		€ 500.000,00
Eigen vermogen VVE (vrijval bij renovatie)		€ 200.000,00
Subsidie	€ 20.000,00	
Resultaat renovatie		
Complex na renovatie volledig aardgasvrij (ja/nee)	nee	
Complex na renovatie (extra) zonnepanelen (ja/nee)	nee	
Energiebesparing	90,00%	
Kosten/jaar na renovatie	Individueel	Collectief
VVE bijdrage (exclusief reservering MJOP)/maand	€ 420,00	
VVE bijdrage (reservering MJOP)/maand	€ 240,00	
Waardevermeerdering na renovatie	€ 25.000,00	
Financiering		
Looptijd lening (jaren)	30	
Rente rennovatieleening	1,60%	
Potentieel belastingvoordeel eigenaren	30,00%	

Resultaat berekeningen		
Opbouw resultaten	Individueel	Collectief
Besparing woonlasten per jaar	€ 2.351,59	€ 411.527,99
Concurrerende loopprijd (cumulatief)	€ 70.547,59	€ 12.345.837,59
Financieringskosten (in mindering)	€ 14.864,81	€ 2.601.341,67
Subsidie	€ 20.000,00	€ 3.500.000,00
Waardevermeerdering na renovatie	€ 25.000,00	€ 4.375.000,00
Woonlasten Neutraal Renovatiebudget	Individueel	Collectief
Renovatiebudget op basis van besparing, exclusief subsidie	€ 55.682,78	€ 9.744.485,91
Renovatiebudget op basis van besparing, inclusief subsidie	€ 75.682,78	€ 13.244.485,91
Renovatiebudget (besparing, subsidie en waardevermeerdering)	€ 100.682,78	€ 17.639.485,91
Woonlasten per jaar, collectief	Voor renovatie	Na renovatie
VVE bijdrage (exclusief reservering MJOP)	€ 84.000,00	€ 73.500,00
VVE bijdrage (reservering MJOP)	€ 241.500,00	€ 42.000,00
Energiekosten, inclusief vaste aansluitkosten	€ 309.400,00	€ 107.872,41
Financieringskosten (met aftrek belastingvoordeel eigenaars)	€ 0,00	€ 411.576,49
Totaal	€ 634.900,00	€ 635.048,90
Woonlasten Optimale Renovatie, individueel per maand	Voor renovatie	Na renovatie
VVE bijdrage (exclusief reservering MJOP)	€ 40,00	€ 35,00
VVE bijdrage (reservering MJOP)	€ 115,00	€ 20,00
Energiekosten, inclusief vaste aansluitkosten	€ 147,33	€ 51,37
Financieringskosten (met aftrek belastingvoordeel eigenaars)	€ 0,00	€ 136,04
Kosten per woning per maand (gemiddeld)	€ 302,33	€ 302,40



Major risks, major uncertainty

- **The process step from optimal scenario to Final Design (DO) and implementation**
 - Risks are increasing
 - Costs are rising, more research and elaboration in detail
 - Uncertainty is increasing, as is the chance that the process will come to a standstill
 - We are researching whether a guarantee fund (calamity fund) might be an option



Requirements Guarantee
and financial fund

D3.5



Examples of projects

- **CA Amsterdam LS**

- Process is going very slowly and now another step backwards under the influence of the social housing company

- **CA Amsterdam GS**

- The Environmental Quality Commission has the opinion that the entire building should be tackled at once
 - Including two other CAs under the same roof
 - The CM of the 3rd CA is unwilling to take action



Examples of projects

- **CA Brunssum**

- Best scenario, a social process supervisor in addition to technical process supervisor
- Possibly too much pressure of the municipality that scared people off

- **CA Nijmegen**

- Excellent example, with unanimous decisions to start research and invest in the best solution
- Thanks to the efforts of the chair of the CA



**THANK
YOU**

• **How to find us**



CondorenoLife



Life_CondoReno



condoreno.org



LIFE21-CET-HOMERENO-CondoReno

Collaboration models

for renovating housing owned by mixed stakeholders

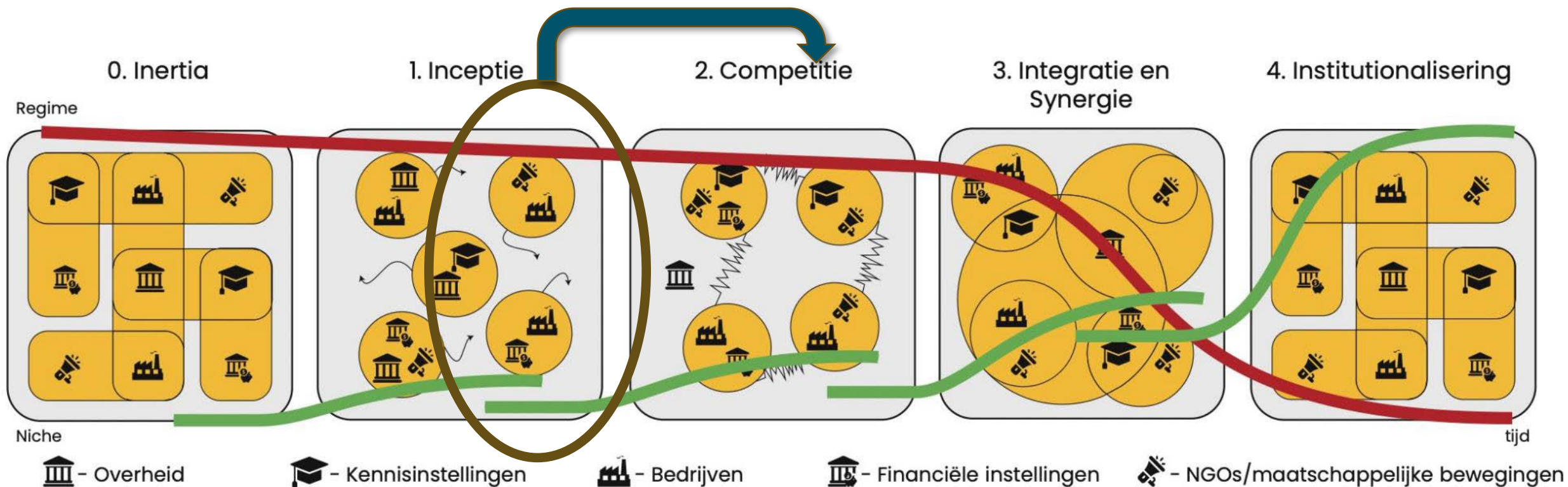
Olivier Lauteslager, Verbouwstromen



verbouwstromen

**Samenwerkingsmodellen voor
energierenovaties** door Olivier Lauteslager

Transmissie model; fase inceptie



Aanpak gemengde VvE's

Deelnemers aan intervisiesessies (COIL)



Stadgenoot

VvE Uitergaasp

164 woningen



de Alliantie

VvE's Valkenhof

318 woningen
10 VvE's



de woonplaats
alle ruimte!

VvE de Wönners

65 woningen



Ymere

VvE Willeskopstr
en Wisseloord

109 woningen



EIGEN HAARD

VvE Kasteelvrouwe

86 woningen



beter wonen

VvE's P.C.
Boutenstraat

126 woningen
4 VvE's

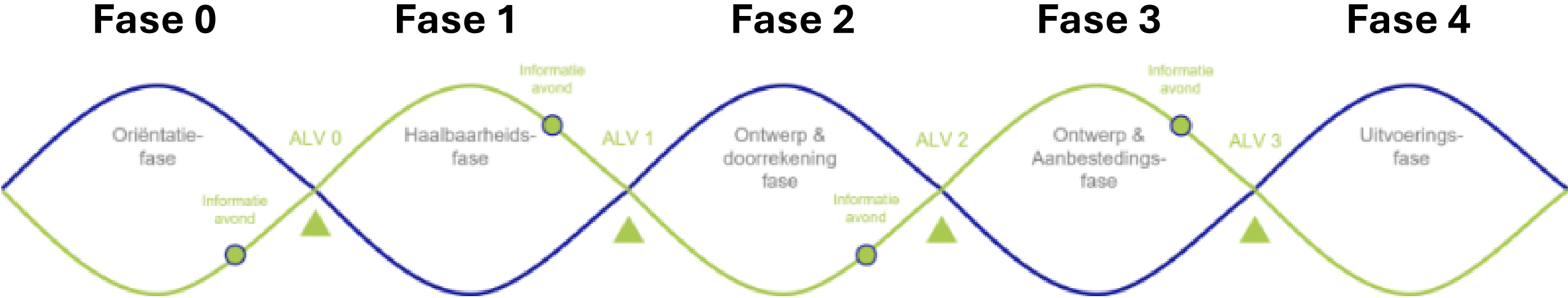


Nijestee i

VvE' s Kostverloren

400 woningen
7 VvE's

UNIFORM BESLUITVORMINGSPROCES

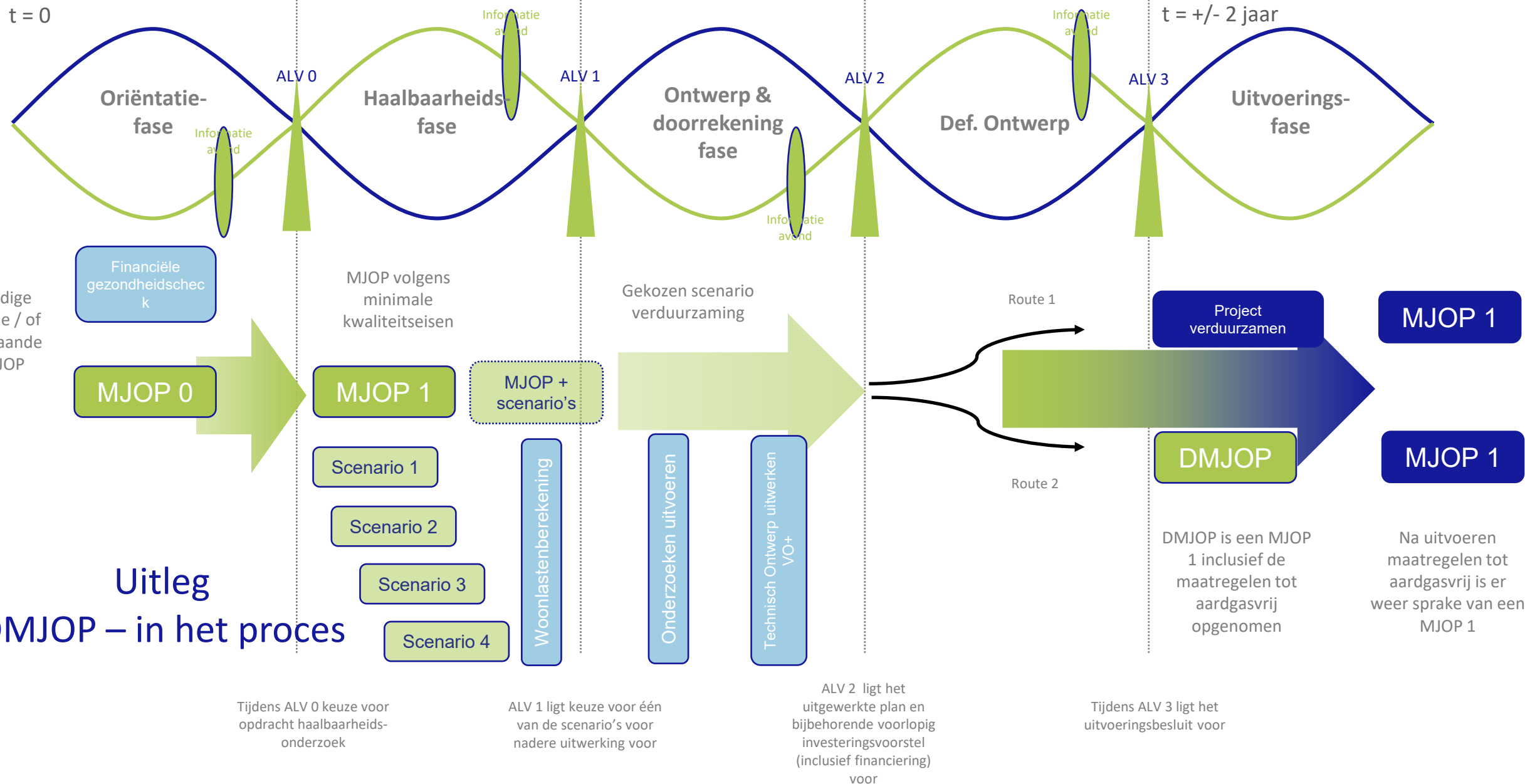


Uniforme werkwijze gemengde VvE

- VvE's krijgen spijtvrije stappen voorgelegd (4 scenario's) die richting een gebouwgebonden einddoel werken in 2050; namelijk aardgasvrij én conform de isolatiestandaard (> 1945)
- Plannen zijn altijd een combinatie van onderhoud & verduurzaming om tot een toekomstbestendige woning te komen.
- VvE's werken in 4 gedefinieerde processtappen en algemene Ledenvergaderingen naar een uitvoering toe
- Stappen zijn uitgewerkt in minimale kwaliteitseisen en tooling die 4 thema's beslaan: techniek, financiën, juridisch en draagvlak

DMJOP TOOLING

— Inhoud (techniek / financiën)
 — Proces (sociaal)



Bevindingen 1

- Samen leren en inspireren tussen corporaties wordt erg gewaardeerd
- Vaak verschillen tussen belangen van corporatie en van VvE
- Corporatie kan heel veel verschillende rollen aannemen
- Meestemmen met eigenaren en akkoord op financieren is must
- Nationale prestatie-afspraken zijn vaak aanleiding en tegelijk de lat (B label)
- Corporaties beslissen op investering niet op maandlasten

Bevindingen 2

- Financieringsvoorwaarden en subsidies maken grote stappen interessant (+ voorspelbare woonlasten)
- Maar "verduurzaam je uit de shit" past moeilijk in beleid van corporaties
- Sparen wordt gezien als dood geld
- Problematiek van omgekeerd scheefwonen
- Wet van verminderde meeropbrengsten geldt bij stapsgewijze aanpak
- Verhoging VvE bijdrage na eerste stap is vaak onrealistisch

Vervolg 2025

1. Handreiking en tooling fase 3 en 4 afronden (white label)
2. Verankering van kennis bij deelnemende stakeholders in hun communicatie en dienstverlening in oa:
 - Communicatie **VvE belang** en **Vereniging Eigen Huis**
 - Toolbox gemengde VvE's **Aedes**
 - Landelijke VvE balie **Milieucentraal**
 - Opleiding procesbegeleiders **Hogeschool Utrecht**
 - Wijziging appartementsrecht door **ministerie VRO**
 - **BRL commissie** VvE beheer

BETROKKEN PARTIJEN

Belangenbehartigers

- Ministerie VRO
- VvE belang
- Vereniging Eigen Huis
- Milieucentraal
- Aedes
- Groene Huisvesters
- VGM
- BVVB

Corporaties

- Ymere
- Eigen Haard
- Stadgenoot
- De Alliantie
- Nijestee
- De Woonplaats
- Beter Wonen

Adviseurs/ procesbegeleiders

- Groen Overleven
- Synopel
- DVvE
- Green Leap
- E3 advies
- PKW
- Tsavo
- Focus vastgoed groep

Vragen?

Team VvE:



Corine Erades
Synopel



Rick Wessels
Groen Overleven



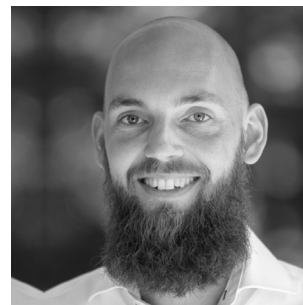
Gone van Gorsel
DVvE



Bastiaan Meijer
Green Leap



Simon Verduijn



Thijs Barkmeijer



Olivier Lauteslager
Marktowne VvE



Banu Tawfiq



Jana de Rooij

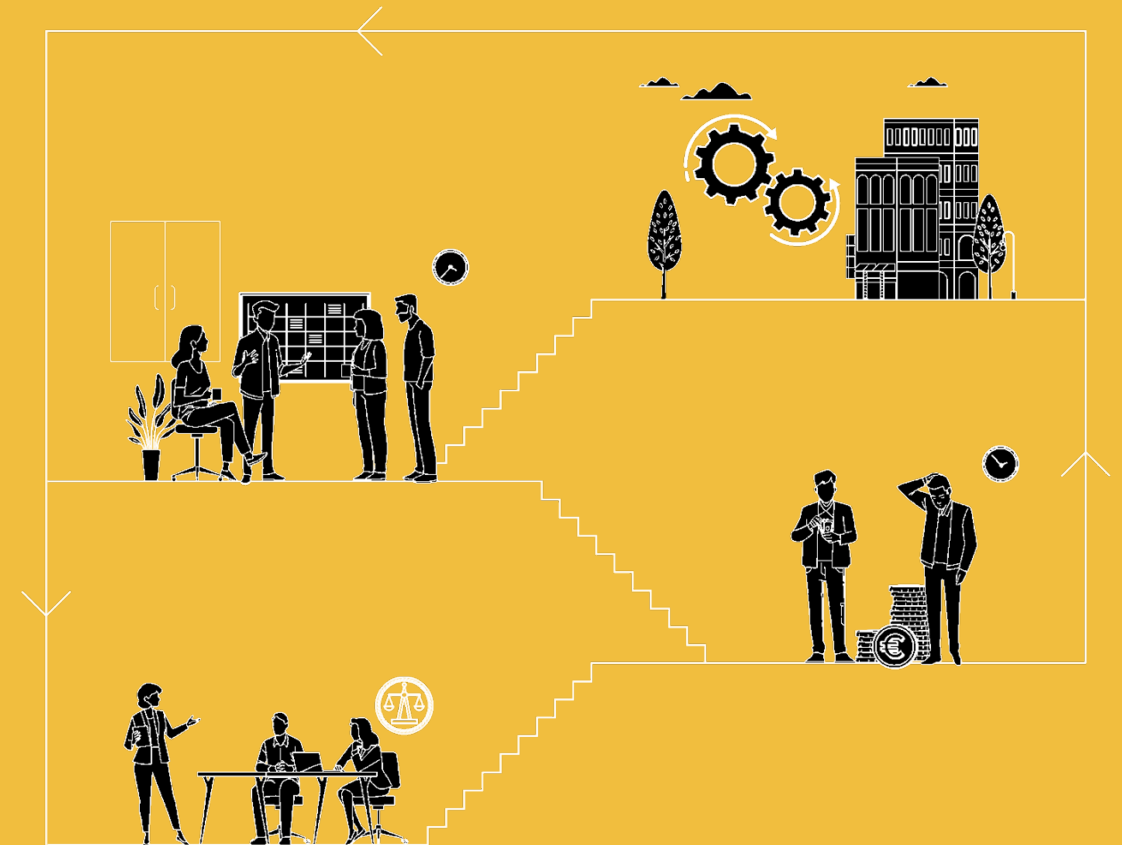
Integrated home renovation services

as a means to boost energy renovations

Towards Accelerating Deep Renovation of Residential Buildings with Multiple Homeowners

Ragy Elgendy, PhD researcher

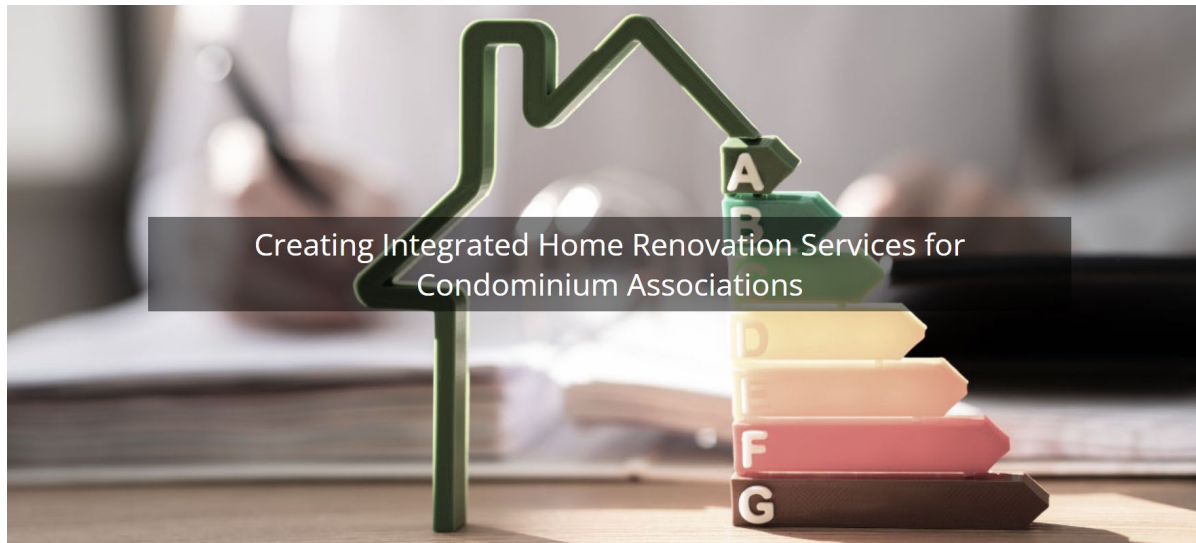
Department of Management in the Built Environment, Faculty of Architecture and the Built Environment, Delft University of Technology, Delft, The Netherlands



CondoReno

This research is part of the research project "CondoReno" funded by the European Union Programme for Environment and Climate Action (LIFE) MGA — Multi & Mono, under grant agreement.

The aim of the project is to **accelerate energy renovations for condominium associations** by creating **6 viable business models for integrated home renovation service providers** to be replicated in 10 European countries.





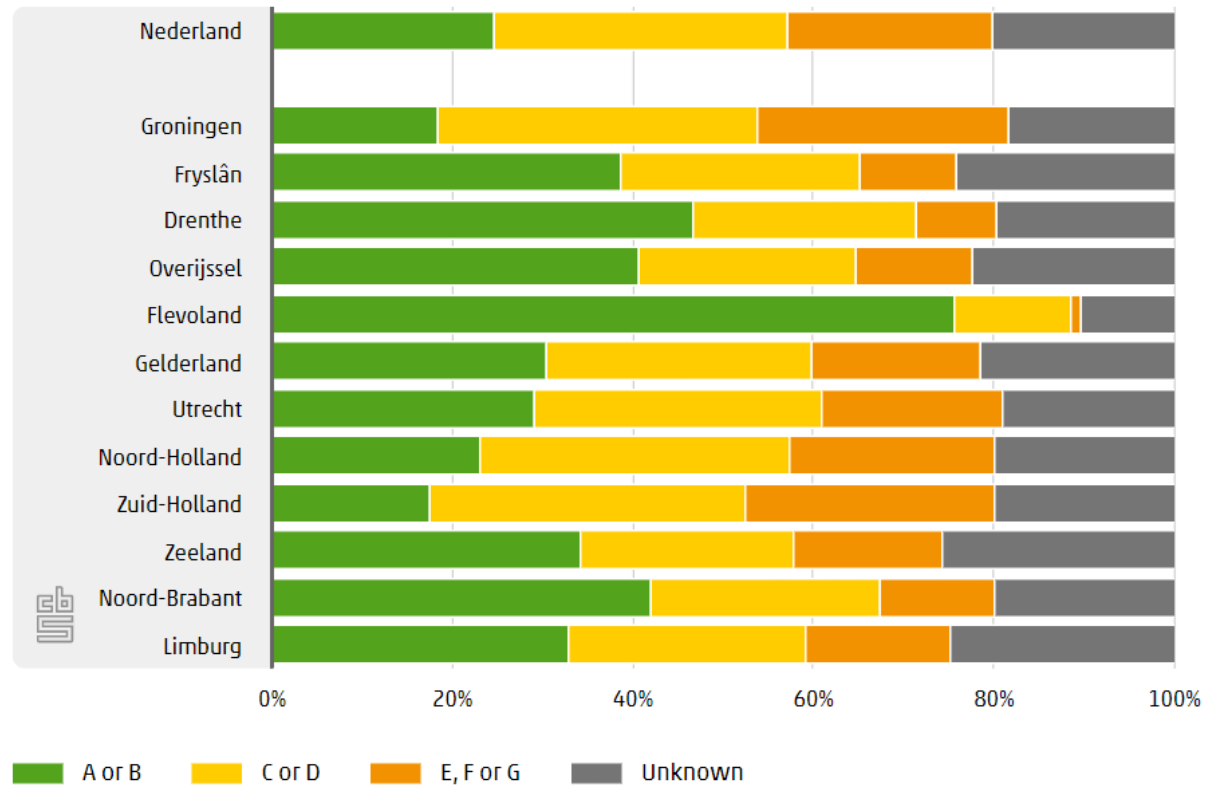
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Homeowner associations in the Netherlands

Source: (Centraal Bureau voor statistiek, 2023)

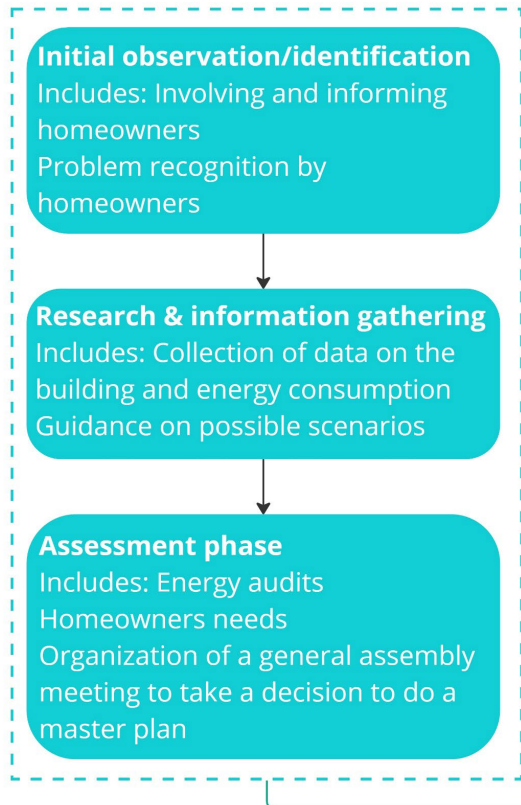
HOAs in the Netherlands

Figure 4.1.2.1 Most recent energy label per VvE

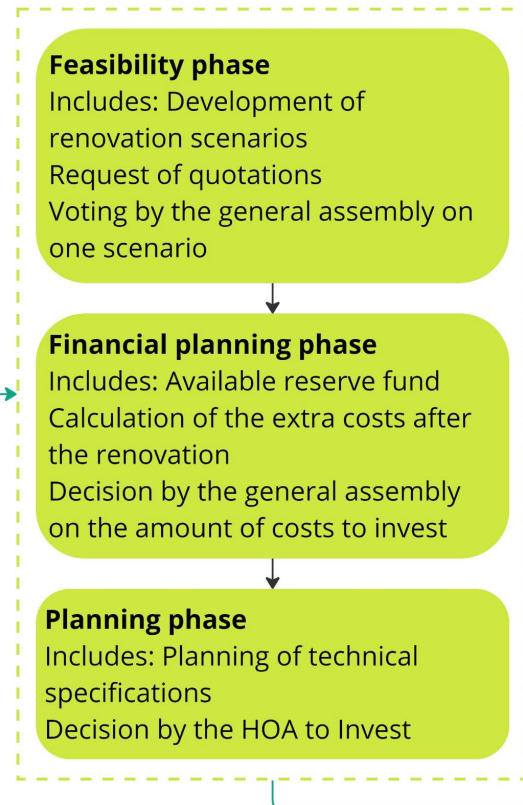


Renovation journey for VvEs

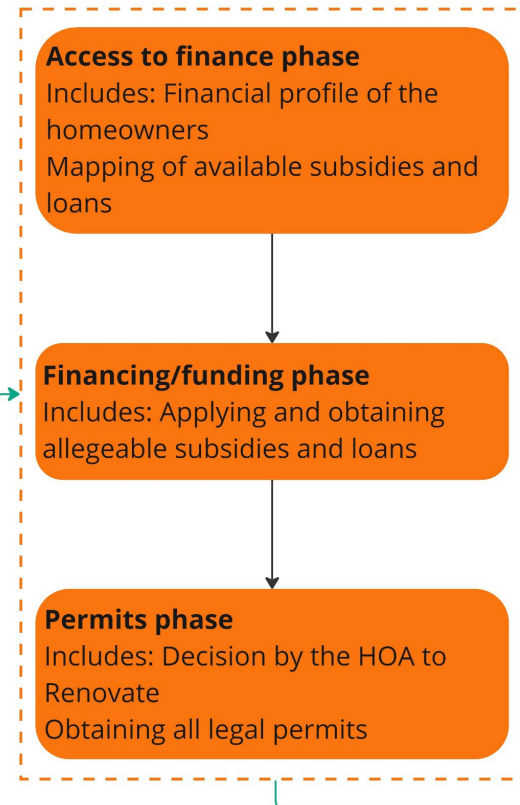
Step 1 : Onboarding phase



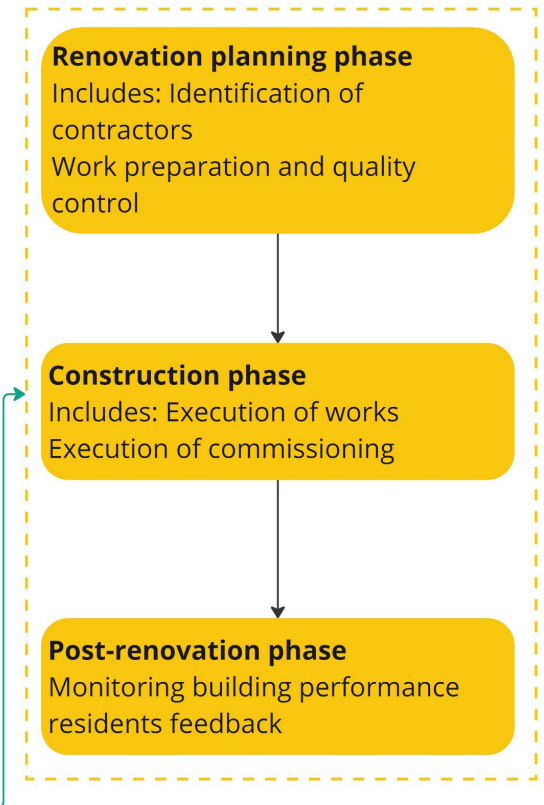
Step 2 : In-depth phase



Step 3 : Transaction phase



Step 4 : Implementation and utilization phase



Mapping of Barriers within the VvE Renovation journey

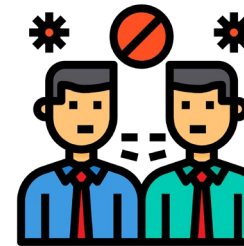
Examples of Barriers & challenges faced by HOAs to undertake energy renovations

Barriers and solutions for homeowners' associations undertaking deep energy renovations of condominiums



1 Financial barriers

- High upfront costs
- Insufficient subsidies
- The financial burden for homeowners
- Split incentives
- Condominium managers business case
- Investors hesitancy



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Keywords

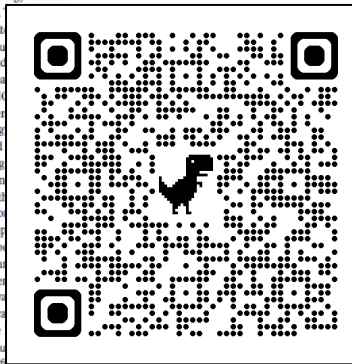
homeowner associations, barriers, solutions, deep renovations, condominiums

homeowners, energy practitioners, and researchers in developing targeted strategies for successfully implementing deep renovation projects for HOAs.

Abstract

Buildings in the EU consume around 40 % of energy and are responsible for 36 % of greenhouse gas emissions. Reducing building energy consumption is a key strategy for climate change mitigation. Residential buildings consume about 20 % of total energy in Europe. Multifamily residential buildings as condominiums, feature individually owned apartments and are managed by Homeowners' Associations (HOAs). HOAs constitute a considerable percentage of the owner-occupied residential sector in Europe. However, the deep energy renovation rate is still low due to the complex process and the financial barriers faced by HOAs. There is a lack of understanding of the barriers to undertaking deep energy renovation projects and their potential solutions. Therefore, this study investigates barriers, incentives, and possible solutions to enable HOAs to undertake deep energy renovation projects. This study employs a combination of qualitative methods including archival research, the gathering of information through interviews at meetings organized by the EU, four interviews with experts, and a workshop with eleven experts. This exploration was conducted from the perspective of three actors: home renovators, public authorities, and policymakers in the Netherlands and Flanders. The barriers are grouped under four categories: financial, legal, social, and technical. The findings indicate that communication, cost, and legal structure are the most significant barriers. The incentives play a vital role only in the early phases of the renovation. The findings can inform policy

Introduction



energy consumption (Tsemelidou et al., 2023). Incentives for heat pumps in buildings (Eloire et al., 2023) account for 1 % of total energy consumption. The Netherlands has been successful in energy renovation of buildings (Boza-Klavari et al., 2023). The energy renovation rate is 1 % to reach the current EU goals (EASME et al., 2023). Deep energy renovations often involve multiple tasks requiring coordination among stakeholders (Milin & Buller, 2021).



are

novation



actual

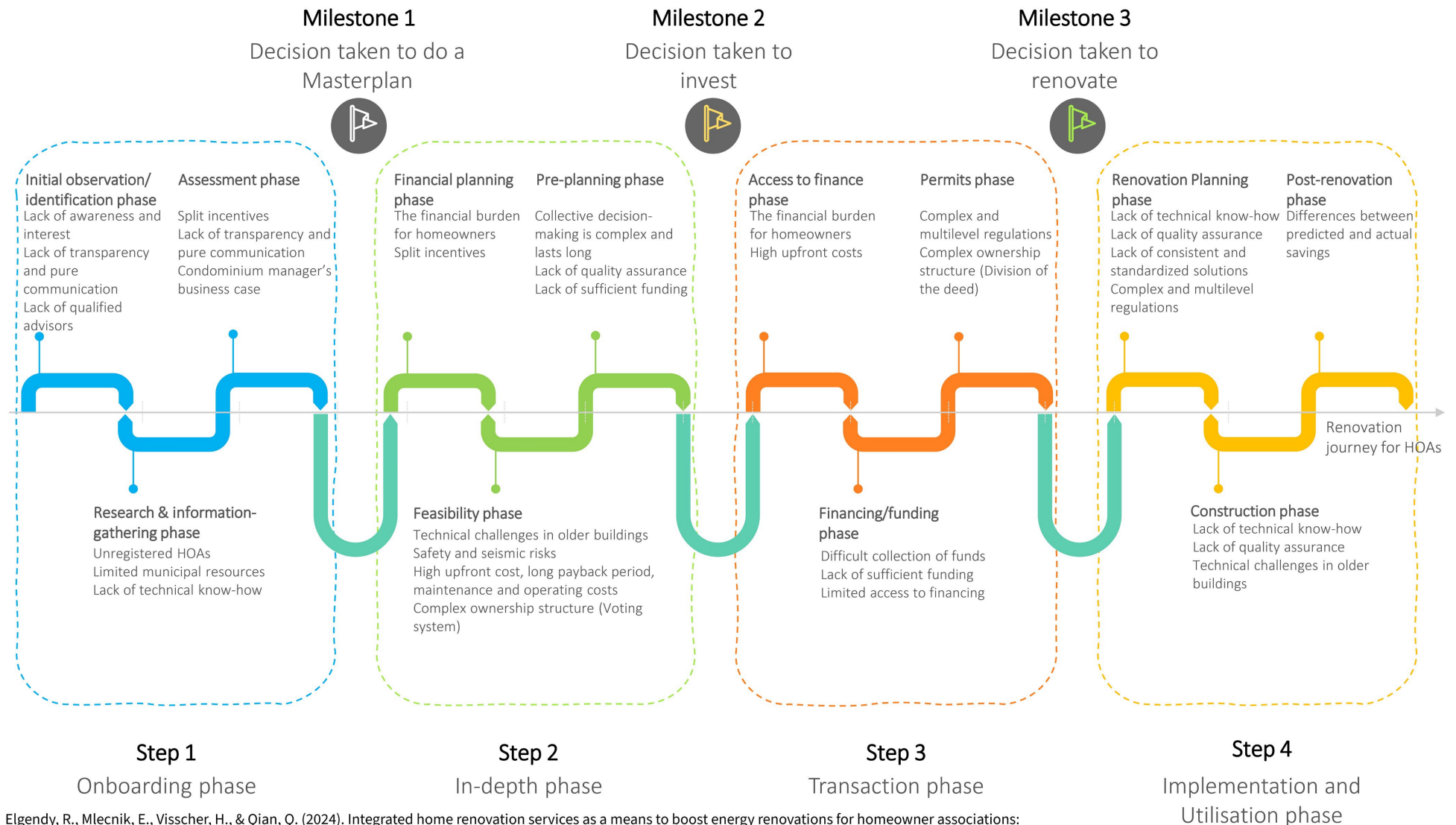


2 Legal barriers

- Complex ownership structure
- Complex and multilevel regulations
- Unregistered Condominium associations
- Limited access to financing
- Ecological policies

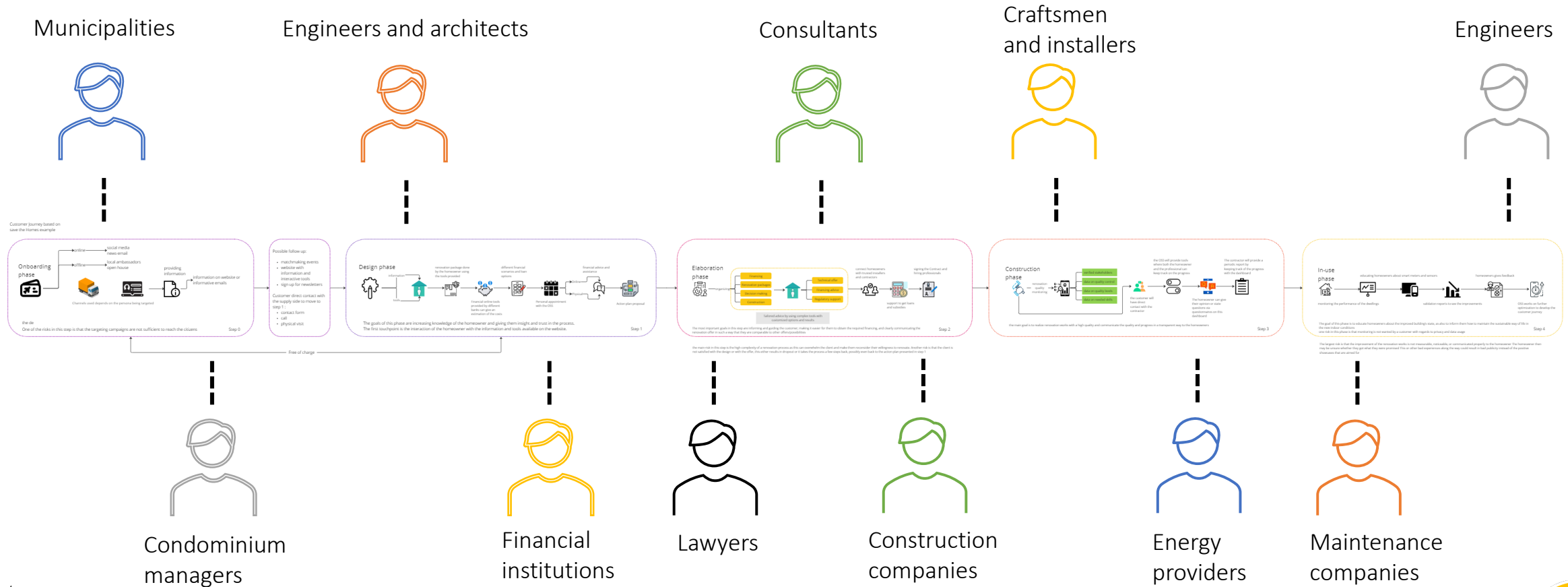


Mapping of Barriers within the VvE Renovation journey



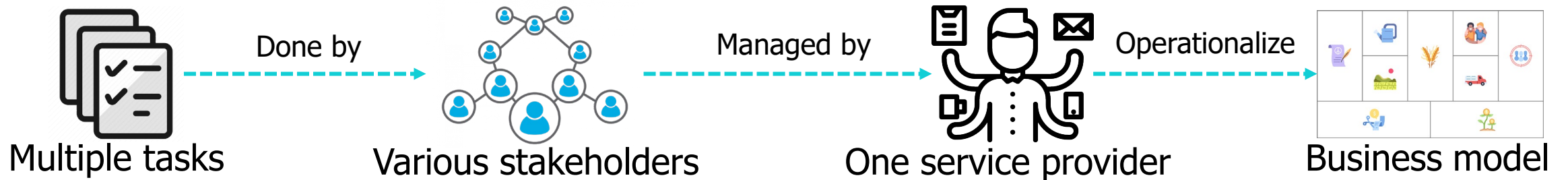
Elgandy, R., Mlecnik, E., Visscher, H., & Qian, Q. (2024). Integrated home renovation services as a means to boost energy renovations for homeowner associations: A comparative analysis of service providers' business models. *Energy and Buildings*, 320, Article 114589. <https://doi.org/10.1016/j.enbuild.2024.114589>

Involvement of several stakeholders



Integrated home renovation service providers (IHRS)

Home renovation projects frequently involve multiple tasks that necessitate coordination among various trades and stakeholders



IHRS providers business models typologies

Public model

For example, Municipal services of "energy houses" in Antwerp, Mechelen and Ostend in Belgium

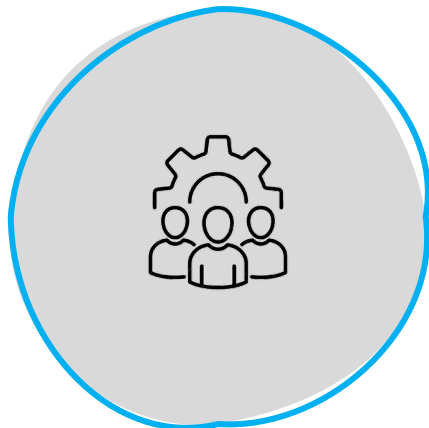


8



Private model

For example, Living-cost neutral renovation services of non-profit organization WNR in the Netherlands



3



Agency model

For example, CoachCoPro services Agence Parisienne du Climat in Paris



3



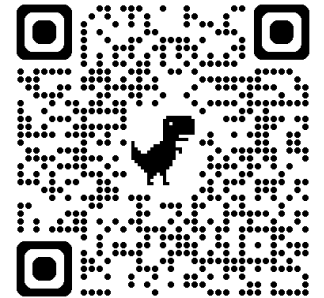
Journal article



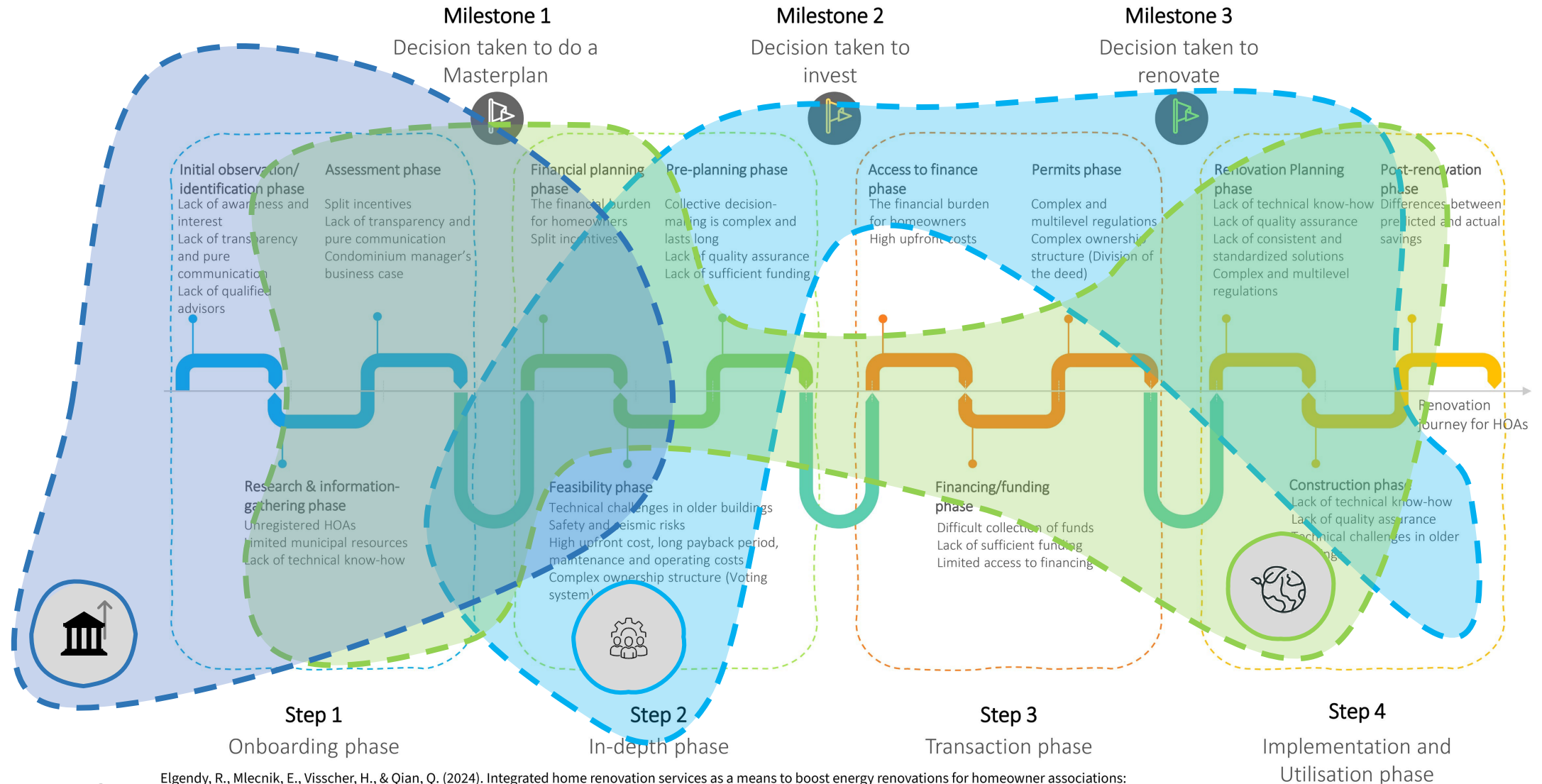
Energy and Buildings
Volume 320, 1 October 2024, 114589



Integrated home renovation services as a means to boost energy renovations for homeowner associations: A comparative analysis of service providers' business models



The main involvement of the three models in the renovation journey



The Green Model

Comparison of the capability rate per business model to pass each phase

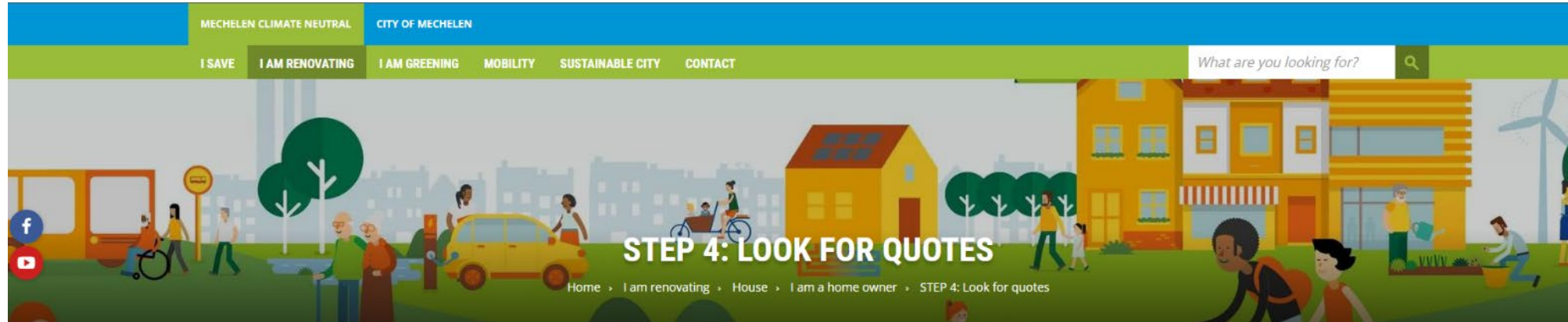
Steps	Renovation phases	Public							Private			Public-Private			
		BM3	BM4	BM5	BM8	BM9	BM10	BM13	BM14	BM2	BM6	BM7	BM1	BM11	BM12
Step 1 Onboarding phase	Initial observation/ identification phase	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow	Green	Green	Green
	Research & information-gathering phase	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow
	Assessment phase	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red	Green	Yellow	Yellow
Step 2 In-depth phase	Financial planning phase	Red	Red	Red	Red	Red	Red	Red	Red	Yellow	Red	Yellow	Green	Green	Yellow
	Feasibility phase	Red	Red	Red	Red	Red	Red	Red	Red	Yellow	Yellow	Green	Red	Yellow	Red
	Pre-planning phase	Yellow	Red	Red	Yellow	Red	Yellow	Yellow	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Step 3 Transaction Phase	Access to finance phase	Red	Red	Red	Yellow	Red	Red	Yellow	Red	Yellow	Yellow	Green	Green	Green	Red
	Financing/funding phase	Yellow	Yellow	Red	Yellow	Yellow	Red	Red	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
	Permits phase	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Green	Red	Red	Red
Step 4 Implementation and Utilisation	Renovation Planning phase	Yellow	Red	Red	Red	Red	Red	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Green
	Construction phase	Yellow	Red	Yellow	Red	Red	Red	Yellow	Yellow	Green	Green	Yellow	Yellow	Green	Green
	Post-renovation phase	Yellow	Red	Red	Red	Red	Red	Red	Red	Green	Red	Red	Red	Yellow	Green

(Green ≥ 67 %, Yellow when <67 % and ≥33 %, and finally Red < 33 %)



Viable
Replicable
Model

Tools to support VvEs



I AM A HOME OWNER

- Step 1: Educate yourself
- Step 2: Get renovation advice
- Step 3: Discover your financial options
- **Step 4: Look for quotes**
- Step 5: Apply for My Home Improvement Loan
- Step 6: Prepare your planned works
- Step 7: Have your work done
- Step 8: Request your premiums

ASK YOUR QUESTION

You read here:

- [Find your contractor](#)
- [Check your contractor](#)
- [Check your quote](#)

Find your contractor

Don't know where to find a reliable professional? Look in our local contractors collective. This is a list of **contractors and professionals** from the region, who have been checked and approved on various points.

CONSULT THE CONTRACTORS' COLLECTIVE

Recommendations



Successful cases

Marshallplein



THAN
YOUR



This work was supported by the CondoReno Project funded by the European Union's Programme for Environment and Climate Action (LIFE) MGA — Multi & Mono, under grant agreement No. 101076316. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.



Ben je eigenaar van een appartement?

Are you an owner of an apartment? Your opinion matters!

De Vlaamse overheid wil VME's en mede-eigenaars ondersteunen bij de renovatie van hun appartementsgebouw.

Dit is jouw kans om mee het verschil te maken!



Scan de QR-code om een korte vragenlijst in te vullen en jouw mening te delen. **Jouw input telt!**

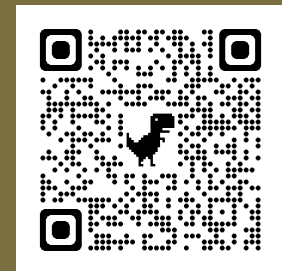
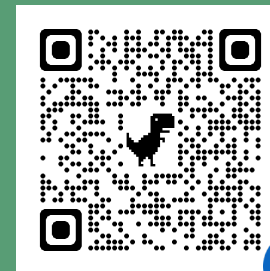
You can give your input in Dutch, English, French, German, Spanish, Italian, Portuguese or Arabic

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THE WAY FORWARD

for collaboration models

for energy renovations

Q&A and discussion

Moderator: Guus Mulder, TKI Urban Energy