Deliverable 2.3 - Estimated and achieved key performance indicators (KPIs) report

Annexes M20_M24_M30

31-03-2025

Final version

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[1] **R** = Document, Report; **Dem** = Demonstrator, pilot, prototype; **DEC** = website, patent filings, videos, etc; **OTHER** = other
[2] **PU** = Public, **SE** = Sensitive

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EXECUTIVE SUMMARY

Within the TANDEMS project's project management framework, monitoring stands out as a crucial element, ensuring success and attainment of intended outcomes. The project adopts a dual strategy for monitoring and evaluation, incorporating both result-oriented and action-oriented approaches. Both monitoring approaches work in tandem rather than being mutually exclusive, contributing to effective project management in diverse contexts.

Result-oriented monitoring tracks progress against predefined targets using key performance indicators (KPIs) and follows a structured plan-monitor-evaluate cycle. This approach ensures a systematic assessment of project success and alignment with original goals. On the other hand, action-oriented monitoring, or reflexive monitoring, adopts a dynamic and adaptive approach, integrating monitoring into the ongoing project process. Action-oriented monitoring seeks to define pathways for systemic change, acknowledging the complexity of innovation projects and proactively engaging with emerging challenges.

The purpose of the 'deliverable 2.3 Estimated and Achieved Key Performance Indicators report' is to expound on the dual monitoring and evaluation strategy implemented in the TANDEMS project. This document provides an overview of the result-oriented monitoring approach, emphasizing the use of KPIs for assessing progress and impact. Furthermore, it introduces the action-oriented monitoring approach, promoting reflective learning, enhancing collaboration, and facilitating adaptive responses to complex challenges.

To maintain transparency and relevance, an addendum to deliverable 2.3 is published every six months (i.e., in M24, M30, and M36). These supplements offer periodic outputs of the monitoring and evaluation activities, providing stakeholders with real-time insights into the project's trajectory and performance.

Reflexive learning sessions were scheduled, to collaboratively reflect with the TANDEMS partners on the pivotal moments within the pilots, identify lessons learned (e.g., by means of the systemic iceberg model) and define actions for replicating successes, seizing opportunities and tackling obstacles.

KPI project meetings were scheduled to keep track of the progress made against the estimated Key Project Level Indicators and the expected outputs.

The meeting minutes of the KPI project meetings and the reflexive learning sessions that were organized in M18 – M30 of the TANDEMS project's lifetime can be consulted in the enclosed annexes.

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LIST OF ABBREVIATIONS

AGEM	Achterhoekse Gemeentelijke Energie Maatschappij
EU	European Union
KPI	Key Performance Indicator
M	Month
PBL	Planbureau voor de Leefomgeving
VITO	Vlaamse Instelling voor Technologisch Onderzoek
WP	Work package

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Annex 1: Kick-off TANDEMS after M18 | KPI monitoring (online, 16th June 2024)

1 Participants

Table 1: List of participants

Organisation	Name	Organisation	Name
Kamp C	Maro Saridaki	**ZuidtrAnt**	Sophie Loots
VITO	Erik Laes	**ZuidtrAnt**	Liesbet Veulemans
VITO	Erika Meynaerts	**Klimaan**	Steven Laurijssen
AGEM	Justin Pagden	**Mechelen**	Bart De Bruyne
AGEM	Maroeska Boots	**Gabrovo**	Todor Popov
DuneWorks	Marten Boekelo	**Burgas**	Ivalyo Trendafilov
Oikoplus	Michael Anranter		

2 Aim

By establishing a structured process for KPI monitoring, the project partners can proactively address issues, celebrate successes, and keep all projects moving forward towards their objectives. VITO emphasized the critical need for regular monitoring of the **Key Performance Indicators (KPIs)** to ensure that the TANDEMS project remains on track. The goal is to hold **bi-monthly KPI monitoring meetings** that focus on **result-oriented discussions** about the current status of various KPIs across pilot projects. The meetings will serve as a platform for partners to address any issues, especially those projects that are at risk of not meeting their goals.

3 Discussion

This meeting did not allow for in-depth discussion between the partners. The following points were shared by the project coordinator with the TANDEMS partners.

KPI Traffic Light System:

- Red status: projects not on track, requiring immediate attention and discussion.
- Orange status: projects facing challenges but still manageable; these projects will be discussed to prevent them from sliding into red.
- Green status: projects that are progressing smoothly and do not require immediate discussion. These will be celebrated as positive examples but will not take up meeting time.

Meeting Format:

- Bi-monthly meetings: to ensure continuous oversight, these meetings will occur every two months, with special focus on the red and orange projects.
- Pre-meeting preparation: all partners are required to update the status of their projects in the shared KPI & output table prior to the meeting. This will provide an up-to-date overview of each pilot's status.
- Reporting template: a reporting template has been created to capture the key takeaways, conclusions, and actions from each KPI meeting. This template will ensure consistency in reporting and make it easier to track the evolution of projects over time.
- Deliverable integration: the minutes and action points from each KPI meeting will be used to update Deliverable 2.3, which is due every six months (first submission in September,

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followed by updates in months 30 and 36). This deliverable will include a comprehensive overview of the project's progress, highlighting areas of success and concern.

First Meeting and timeline:

- The first KPI meeting is scheduled to take place end of June. This initial session will set the tone for future discussions and address any immediate concerns with "red" status projects.
- Two additional KPI meetings are planned for July and September to ensure all projects are prepared for the September reporting deadline. These meetings will help identify any remaining issues that need to be addressed before the end of the reporting period.
- Going forward, the bi-monthly meetings will ensure that project partners are constantly updated on the progress made and challenges are addressed before they become major setbacks.

4 Conclusions

Table 2: List of main conclusions

Nr.	Conclusions
1.	**Define the purpose of the KPI meetings as essential to:** • Monitor progress: ensure that the KPI targets for each pilot project are being met. • Identify and address risks: focus on projects flagged as "red" to identify obstacles and find solutions to get them back on track. • Drive accountability: these meetings will ensure that all partners are held accountable for their project's progress. **Facilitate collaboration:** encourage collaborative problem-solving by bringing all partners together to discuss challenges and share best practices.
2.	**Expected Outcomes:** • Improved project performance: by focusing on at-risk projects every two months, the partners can collaboratively solve problems and improve the overall performance of the pilot projects. • Better tracking and accountability: the use of the traffic light system and bi-monthly updates will provide clear accountability for each partner, ensuring that all projects stay aligned with the overall goals of the TANDEMS project. **Timely reporting:** the KPI meetings will help ensure that all data and progress updates are available for the six-monthly reporting, improving the accuracy and quality of the reports submitted.

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5 Actions

Table 3: List of actions

Nr.	Action	Responsible partner(s)	Linked action	Deadline	Follow-up
1.	All partners must review and update the KPI & output table with the latest data before the first meeting.	All partners	Ensure that discussions are based on the most current status of the projects.	Before every KPI meeting	ongoing
2.	Define the feasibility of the reporting structure and template.	Kamp C and VITO	Once confirmed, the reporting structure will be used in all future KPI meetings.	Before next KPI meeting	ongoing
3.	Organize and set specific dates for the KPI meetings.	Kamp C and VITO	These should ideally align with the two-week timeline for the first meeting, with subsequent meetings in July and September.	30/06/2024	ongoing
4.	Focus on red and orange projects	Kamp C	Partners with project status= red or orange should identify key issues and propose actions for getting back on track.	During every KPI meeting	ongoing

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Annex 2: KPIs | Result-oriented status meeting (online, 27th June 2024)

1 Participants

Table 4: List of participants

Organisation	Name	Organisation	Name
Kamp C	Maro Saridaki	**ZuidtrAnt**	Sophie Loots
Kamp C	Jet Groen	**ZuidtrAnt**	Liesbet Veulemans
VITO	Erik Laes	**Klimaan**	Steven Laurijssen
VITO	Erika Meynaerts	**Mechelen**	Bart De Bruyne
AGEM	Justin Pagden	**Gabrovo**	Todor Popov
DuneWorks	Sylvia Breukers	**Burgas**	Ivalyo Trendafilov
DuneWorks	Marten Boekelo	**Eneffect**	Stanislav Andreev

2 Aim

The aim of this meeting was to share in more detail the needs of the LIFE KPI Webtool in tracking progress on the KPIs (Key Performance Indicators) for the TANDEMS project, when focusing on a result-oriented strategy, ensuring that the pilot projects are on track to meet their objectives. The meeting emphasized the need for continuous monitoring of KPIs to identify any areas requiring action or improvement.

3 Discussion

The meeting started with a presentation by Kamp C about the LIFE KPI Webtool and KPI definitions and requirements. Following the presentation, the meeting allowed some time for discussion on sources needed. In section 6 the slides presented by Kamp C can be found.

Following references were shared by Kamp C and VITO to support the partners in their reporting on the KPIs:

- LIFE KPI webtool Guidance for LIFE-CET project coordinators (version February 2024).
- Average energy consumption in Flanders: https://www.vreg.be/nl/energieverbruik
- Primary energy consumption in Flanders: Karakteristiek jaarlijks primair energieverbruik | Vlaanderen.be
- CO_2-emission factors: http://cdn.vlaanderen.be/veka/energie-en-klimaatbeleid-in-cijfers/co2-emissiefactoren-calorische-onderwaarden-en-soortelijke-gewichten-van-fossiele-brandstoffen-en-elektriciteit
- Insights regarding smart metering roll-out: Sweden, Denmark, Finland, Estonia, Spain, Norway, Luxembourg, Latvia, Italy, France, Malta, Slovenia and the Netherlands have reached the 80% penetration rate. Four countries, namely Portugal, Austria, UK and Ireland, are progressing with the roll-out, with three countries targeting 80% by 2024. However, six countries, namely Belgium, Croatia, Poland, Slovakia, Lithuania and Hungary, have barely started the roll-out of smart meters. While five countries, namely Bulgaria, Cyprus, Czechia, Germany and Greece, have very few or no smart meters. More information:

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Smart Metering deployment in the European Union | JRC SES (europa.eu)
Smart Metering Roll-Out in Europe: Where Do We Stand? Cost Benefit Analyses in the Clean Energy Package and Research Trends in the Green Deal | JRC SES (europa.eu)

4 Conclusions

Table 5: List of main conclusions

Nr.	Conclusions
1.	**Result-oriented strategy:** - Monitoring and reporting KPIs every two months is crucial for tracking the status and progress of all pilot projects. - A traffic light system is used to highlight the status of each project: Green: projects that are progressing well and do not need further discussion. Orange/Red: projects that require discussion and action to address issues or delays.
2.	**KPI tracking process:** - Each partner must update the "KPI & output" table every two months (status update) and every six months (status and progress report). - Key focus areas are the 11 project-level indicators, which partners need to update before each bi-monthly meeting.
3.	**KPI webtool and reports:** - Partners are required to use tools such as the KPI Webtool (Deliverable 1.3) to submit detailed KPI data, which will feed into larger reports for stakeholders, such as CINEA. - The meeting minutes, actions, and updates from these meetings are incorporated into Deliverable 2.3 every six months.

5 Actions

Table 6: List of actions

Nr.	Action	Responsible partner(s)	Linked action	Deadline	Follow-up
1.	**Update the KPI & Output Table:** • Ensure that the 230215_tandems_KPI.xlsx file is updated with the latest project status and progress data before each bi-monthly meeting. • Focus on the orange/red status projects and be prepared to discuss corrective actions during the meeting.	All partners	-	Before next KPI meeting	ongoing
2.	**Prepare for next deliverable submission:** ➢ Partners should ensure that all updates from this meeting feed into the 6-monthly update of Deliverable 2.3, including updated KPI progress, meeting minutes, and any identified actions. ➢ This includes documenting decisions made during the bi-monthly meetings in the project annex.	All partners	-	Next update of D2.3 in M24	ongoing
3.	**Clarify causality for KPIs 1-5:** ➢ Provide clear explanations for the causality between financial investments and the achieved outcomes, such as	All partners		Final KPI reporting in M36	ongoing

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	➢ energy savings and renewable energy generation. ➢ This includes explaining assumptions and the allocation of impacts across countries or sectors.				

These action points will help ensure that the TANDEMS project stays on track to meet its KPI targets and that all financial and reporting guidelines are followed correctly.

6 Annex: Presentation of KPI definitions for pilots (Maro Saridaki, Kamp C)

KPIs | Yearly & Cumulatively measured

Table 1: KPIs quantified on a yearly basis and KPIs cumulatively measured.

KPIs Quantified on a yearly basis	KPIs Cumulatively measured
1. Primary Energy Savings	5. Investments in Sustainable Energy
2. Final Energy Savings	6. Legislation and Policy
3. Renewable Energy Generation	7. Market Introduction
4. GHG Emissions	8. Implementation sites
	9. Skills
	10. Communication
	11. Employment

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LIFE-CET KPIs & causality

LIFE-CET KPIs 1 - 5

1. Primary Energy Savings (in GWh/year)
2. Final Energy Savings (in GWh/year)
3. Renewable Energy Generation (in GWh/year)
4. GHG emissions (in tCO2eq/year)
5. Investments in sustainable energy (in mEUR)

LIFE-CET KPIs 6 – 11

6. Legislation & policy (number of documents)
7. Market introduction (number of products / processes / methods)
8. Implementation sites (number of real-life sites
9. Skills (number of people trained)
10. Communication (number of people)
11. Employment (number of FTE)

KPI Webtool deliverable:

- 20240329_Deliverable 1.3 Tandems KPI webtool report_final.docx

Explaining the assumptions behind your impacts

"In a lot of cases, KPIs 1-5 will be correlated, at least partly. More than scientific assumptions (e.g. primary energy factor or GHG intensity of the saved energy), we expect you to explain the operational assumptions for each indicator, e.g. why an investment of 'x' million EUR leads to 'y' GWh of primary energy savings and 'z' GWh of renewable energy generation, as well as the reasoning behind the allocation between the different countries or sectors."

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Directly achieved/triggered | Indirectly triggered

Table 3: Schematic guidance for calculating impacts (source: CINEA)

	« End value » includes:	« Beyond 5 years » value includes:
Directly achieved impacts	➢ Impacts directly achieved by the project activity and within the project duration.	➢ Impacts achieved as a result of the project activity until 5 years after the project end.
Directly triggered impacts	➢ Impacts triggered within the project duration but accruing only after project end.	➢ Impacts triggered inside or outside the project duration and accruing until 5 years after the project end.
Indirect Impacts	➢ Impacts triggered, encouraged + replicated by the project outside the immediate scope and target area of the project due to activities within the project duration.	➢ Impacts triggered, encouraged + replicated by the project outside the immediate scope and target area of the project until 5 years after the project end.
How to calculate	➢ For indicators 1-4, annual savings/ generation. ➢ For KPIs 5-11 cumulative from beginning of project until project end.	➢ For indicators 1-4, annual savings/ generation. ➢ For KPIs 5-11 cumulative from beginning of project until 5 years after project end.

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Descriptors for LIFE-CET KPIs

Descriptors for LIFE-CET KPIs

The "descriptors" constitute the matrix inside which you encode your impact values but more importantly, for KPIs 1-5 they correspond to the economic sectors in which the impact of your project happens.

LIFE-CET KPIs 1 - 5

For KPIs 1-5, impacts can be broken down into the different sectors where they occur, across a set of pre-defined descriptors, namely under the categories and subcategories of:

- buildings (A 1-4)
- industry and services (B 1-4)
- transport (C 1-3) and
- further sectors (D 1-6)

LIFE-CET KPIs 6 – 11

KPIs 6 – 11 are not structured across economic sectors but summarised under one single descriptor (e.g. "Innovation Uptake Descriptor" or "Skills descriptor"). This means you only need to encode for each specific context one value for the project end and one value for the 5 years beyond.

Example: For a project refurbishing public buildings and street lighting facilities in Belgium, Estonia, and Malta and under the indicator primary energy savings you have to:

- ✓ provide a value for the specific context 'Belgium', split between the categories "public buildings" and "street lighting";
- ✓ provide the corresponding values for Estonia and Malta.
- ✓ After that, you move to the next KPI (in this example final energy savings) where you need to apply the same procedure.

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Categories & Sub-categories

KPI documents

LIFE CET KPI Guidance (definitions and examples):
➢ LIFE CET KPIs_Guidance for coordinators_final.pdf

Overall KPI excel:
➢ 240610_Tandems_KPI.xlsx

KPI Webtool deliverable:
➢ 20240329_Deliverable 1.3 Tandems KPI webtool report_final.docx

Table 2: LIFE Key Project Level Indicators (KPIs) – categories and subcategories

KPIs	Categories and subcategories
1. Primary Energy Savings (in GWh/year)	**A. Buildings** A.1 Residential buildings (private / public) A.2 Public non-residential buildings A.3 Private non-residential buildings A.4 Buildings - all types (to be used if breakdown is not feasible)
2. Final Energy Savings (in GWh/year)	
3. Renewable Energy Generation (in GWh/year)	**B. Industry and services** B.1 Industry – industrial processes (e.g. equipment) B.2 Industry – supporting processes (e.g. lighting, compressed air systems, EMS) B.3 Industry and services: Products and appliances B.3 Industry and services: Services B.4 Industry and services - all types (to be used if breakdown is not feasible)
4. GHG emissions (in tCO2eq/year)	
5. Investments in sustainable energy (in mEUR)	**C. Transport** C.1 Transport / mobility / e-mobility - public C.2 Transport / mobility / e-mobility – private C.3 Transport - all types (to be used if breakdown is not feasible)
	D. Further sectors D.1 Energy generation / transmission / distribution D.2 (District) heating and cooling D.3 Street lighting D.4 Other public assets / investments D.5 Other private assets / investments D.6 Other assets / investments - all types (to be used if breakdown is not feasible)

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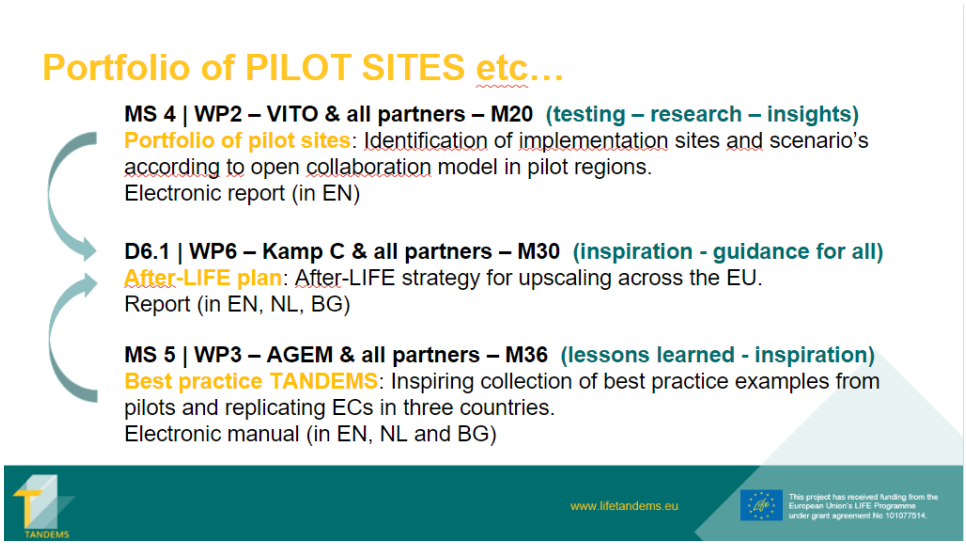

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Annex 3: KPI project meeting | KPIs for Pilots & Outputs (online, 22nd August 2024)

1 Participants

Table 7: List of participants

Organisation	Name	Organisation	Name
Kamp C	Maro Saridaki	**ZuidtrAnt**	Sophie Loots
VITO	Erik Laes	**ZuidtrAnt**	Liesbet Veulemans
VITO	Erika Meynaerts	**Klimaan**	Steven Laurijssen
AGEM	Justin Pagden	**Mechelen**	Bart De Bruyne
AGEM	Maroeska Boots	**Gabrovo**	Todor Popov
DuneWorks	Marten Boekelo	**Burgas**	Ivalyo Trendafilov
Oikoplus	Michael Anranter		

2 Aim

The objective of the KPI project meeting is to review the status of the 11 Key Project-level Indicators with all consortium partners. Prioritization is based on the KPI & Outputs Excel tool, where indicators marked in red require urgent action. Consortium partners agree on specific actions, responsibilities, and deadlines to achieve the targets. Additionally, actions from previous meetings are reviewed and, if necessary, reassigned or rescheduled.

Table 8: List of KPI's and outputs

KPI / Output	Responsible partner(s)	Status	Description of progress & corrective actions
All pilots	AGEM, Mechelen, ZuidtrAnt, Klimaan, Gabrovo, Burgas)	orange → green	All pilots are progressing well and should be indicated as either orange or green. 1-2-1 meetings are needed between Kamp C and the partners to ensure pilot-related KPIs are correctly measured. Wind, solar, heating pilots might have different approaches for KPIs.
ICT tool	Oikoplus	orange	Progress ongoing. ZuidtrAnt will test the tool by 22/08/2024
Blueprint design for training center	Kamp C & Duneworks	red → orange	Pilot REC Kamp C in progress. Citizen's engagement kicked off. Neighbourhood café scheduled on 16/08/2024. Next step: technical & participation tender.
Train-the-trainer	Duneworks	green not red	Duneworks to update status in KPI excel tool
Practical guide: Bulgarian energy community	Gabrovo	red	Gabrovo was unaware of this output. Documentation is available and status will be adapted accordingly.
Business models	AGEM	red → orange	Status should not be red. Agem had meeting with City of Mechelen about the Otterbeek business model. Agem wants to organize a meeting with Gabrovo about their business model prior/during the next consortium

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			meeting. D2.2 is extended from end September to end November 2024 to include Bulgarian exchange in Gabrovo.

3 Discussion

Pilot projects & KPI tracking

The key focus of the meeting was to ensure that all pilots are progressing according to plan and that Key Performance Indicators (KPIs) are being tracked accurately. The pilots span different regions and sectors. Monitoring the progress and ensuring accurate reporting is, therefore, essential for the success of these projects and for meeting the Grant Agreement requirements.

KPI status overview – Traffic light system

- Red: Indicates a serious issue with the pilot or its deliverables. Immediate action is required to resolve the problem, otherwise the project risks missing deadlines or not delivering on its objectives.
- Orange: Signals a concern that needs attention but is not yet critical. The project is on track but may need minor adjustments to avoid delays.
- Green: Everything is proceeding as planned. The project is progressing smoothly, and no further discussion is needed in meetings.

Kamp C and VITO emphasized that the traffic light system is designed to prioritize discussions around the most urgent issues (those flagged red or orange) so that meeting time can be spent resolving them. Green projects, being on track, require no immediate action. ZuidtrAnt emphasized the importance of documenting the progress of each pilot, not only in terms of physical implementation but also in terms of administration (e.g., technical reports, guidelines, and paperwork). The administration aspect is critical for complying with the reporting requirements of the Grant Agreement and ensuring future audits go smoothly.

Defining the status of KPIs or outputs

The discussion turned to what qualifies a KPI or output as “green” or completed. Kamp C stated that a deliverable (like a pilot project) has status “green” when all reporting, administration, and technical aspects have been completed. It is not enough for the project to be operational; the documentation and reporting (energy savings, CO_2-reductions, citizen participation) must also be finalized. The City of Mechelen raised the issue that while pilots may be running successfully, the administration could delay, marking a project as green. Kamp C agreed, highlighting the importance of making sure the administrative side keeps pace with the technical progress.

Some pilots are marked as “red”, and these require immediate focus. The City of Mechelen asked for clarity about what specifically needs to happen to change the status of a “red” pilot to “green”. Kamp C clarified that a pilot’s status remains “red” when the project is not on track or when deliverables are at risk. If the project is ongoing, with clear progress being made, it can be moved to “orange” or “green” depending on the certainty of meeting the end goal. Red status pilots need detailed reporting, and a clear action needs to be defined to move them forward. “Orange” projects are on track but might need additional resources or attention to stay on schedule. Kamp C encouraged task leads to focus on the pilots with status “orange” and

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"red" during the KPI meetings and ensure that they have a clear plan to progress towards "green" status.

Filling in missing data

It became apparent when going through the list of pilots in the KPI tool (excel) that up-to-date information was missing. Some pilots that were marked "red", were "green". Kamp C emphasized the importance of filling out all the relevant sections in the Excel, especially for the specific KPIs such as: energy production, CO_2-reductions, number of citizens engaged in energy communities, etc. These figures must be recorded accurately as they will directly feed into the final project report and be used to measure the overall impact of the initiatives. Kamp C promised to simplify the KPI tool and noted that while it was challenging, filling it in correctly was critical for ensuring that all pilots are being appropriately monitored.

4 Conclusions

Table 9: List of main conclusions

Nr.	Conclusions
1	**Challenges in tracking KPIs from pilots (WP3 Task Leaders to take initiative)** There were some challenges in gathering data and making sure all partners understood how to track progress consistently across pilots. For example: - Some pilots were struggling to report energy savings in a way that aligned with the LIFE KPI webtool. - Technical reports need to include not only numbers but also qualitative details about the progress and engagement achieved. - The partners were also tasked with reviewing their pilot documentation and ensuring all data is properly entered into the KPI tool (an internal tracking system for the project). This would ensure that the project remains transparent and that future reports can be compiled easily.
2	The **traffic light system** needed clarification.
3	Each partner should revisit the KPI tool and update the status of their pilot. Kamp C urged partners to continue working on gathering and verifying KPI data before the next consortium meeting in Gabrovo.
4	Pilots that had yet to include energy related KPIs or other key milestones are encouraged to catch up on their preliminary studies and ensure their community-building efforts were progressing.
5	Clear deadlines need to be set to ensure that all outputs with "red" status have actions in place before the next consortium meeting.
6	Administrative tasks, including the completion of technical reports and documentation, need to be finalized to support the overall project reporting.
7	Overall, TANDEMS seems to be on track with KPIs targets.

5 Actions

Table 10: List of actions

Nr.	Action	Responsible partner(s)	Linked action	Deadline	Follow-up
1.	Simplify KPI tool excel	Kamp C	Provide "granulation" to ensure ease in reporting in LIFE KPI webtool	30/09/2024	ongoing
2.	Include M18 (technical report) snapshot numbers in KPI tool excel	Kamp C	Provide clarity on numbers/targets to be reached to better assess status	30/09/2024	ongoing

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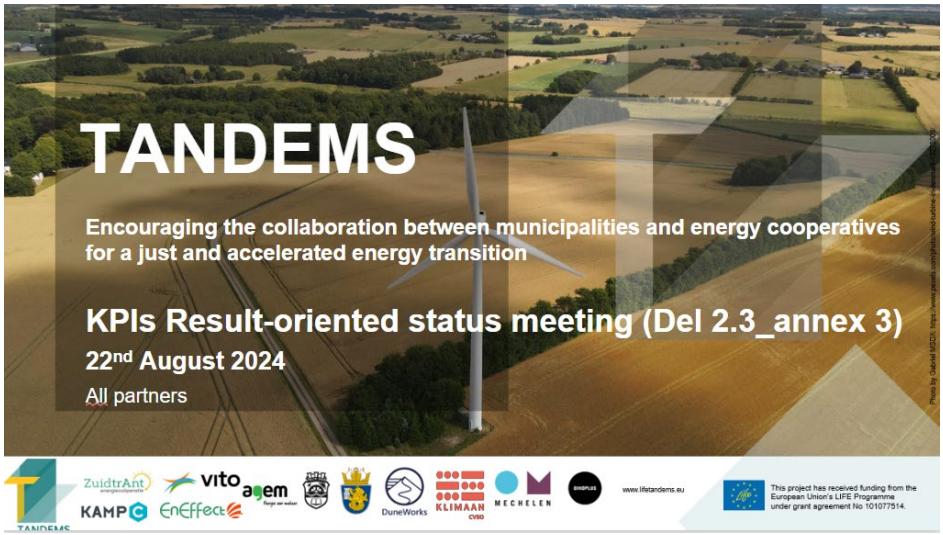
3.	Task leads take initiative for clarification and schedule meeting per WP3 tandem (wind, solar, heat networks/retrofit) and agree on process followed for pilots.	WP3 lead (AGEM) and WP3 task leaders (Klimaan & ZuidtrAnt)	Agem will take initiative to schedule meeting in early September for overall approach	11/09/2024	ongoing
4.	Review status of pilots: partners need to update the status and KPIs in the simplified KPI excel.	All partners Kamp C to follow-up on progress by organising 1-2-1 meetings with WP3 task leaders and then with all project partners	The status review includes adding current progress, and for those in "red" or "orange," explaining the specific issues delaying the project.	11/10/2024 (before next consortium meeting in Gabrovo)	ongoing
5.	Organisation of 1-2-1 meetings with task leaders and partners	Kamp C & all partners	Mentoring is needed to follow-up on progress.	11/10/2024 (before next consortium meeting in Gabrovo)	not started
6.	Submit updates version of D 2.3 (on time)	Kamp C & VITO	Action & result-oriented monitoring	30/09/2024	ongoing
7.	Organise next KPI meeting (bi-monthly)	Kamp C	Result-oriented monitoring	25/10/2024	not started

6 Annex: KPIs result-oriented status meeting (Maro Saridaki, Kamp C)



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Result- & Action-oriented strategy

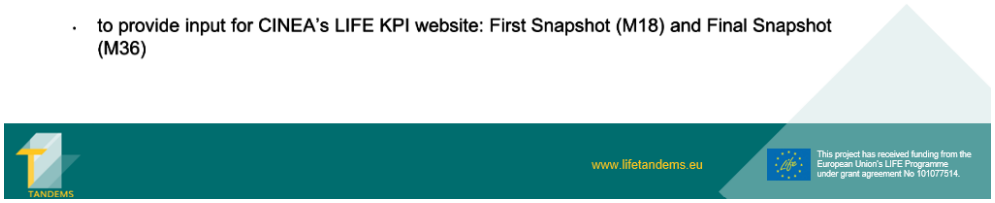
(from VITO presentation VIENNA: Tandems Presentation_consortium meeting_Vienna_17042024_statusT2.3.pptx)

Dual strategy for monitoring and evaluation

'Are we doing it right?', but also: 'Are we doing the right things?' and 'Is our vision still the right one?'

1. Result-oriented monitoring

- to follow up and evaluate the impact of the TANDEMS project and its pilots by means of estimated and achieved Key Project Level Indicators (KPIs).
- to provide input for CINEA's LIFE KPI website: First Snapshot (M18) and Final Snapshot (M36)

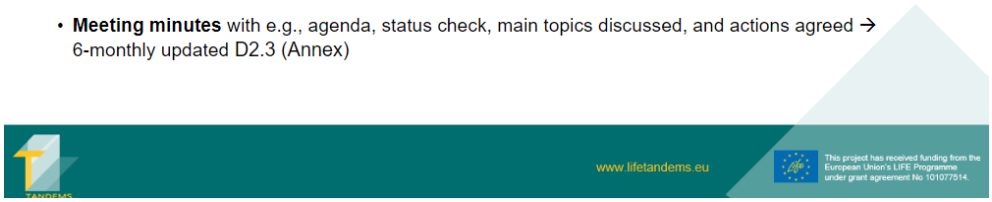


Result-oriented strategy

(from VITO presentation VIENNA: Tandems Presentation_consortium meeting_Vienna_17042024_statusT2.3.pptx)

How?

- **Excel tool "KPI & output":** 230215_tandems_KPI.xlsx
  - every 2 months: all partners update status
  - every 6 months: all partners update status **and** description of progress made against KPIs and expected outputs
  - ***!input for CINEA's LIFE KPI website: First Snapshot (M18) and Final Snapshot (M36)!***
- **Bi-monthly meetings** with project coordinator & all partners
  - focus on the key project level indicators (11)
  - all partners update the "KPI&output" table prior to the meeting!
  - status= traffic light → to discuss= orange and red; to celebrate= green
- **Meeting minutes** with e.g., agenda, status check, main topics discussed, and actions agreed → 6-monthly updated D2.3 (Annex)



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TIMELINE and Outputs

(from VITO presentation VIENNA: Tandems Presentation_consortium meeting_Vienna_17042024_statusT2.3.pptx)

- **Project meetings: every 2 months (WP1)**
  - project coordinator KAMP C responsible for organising and facilitating meetings
  - invitation to all TANDEMS partners
- **KPI & outputs table: every 2 months (status) and every 6 months (status, progress, outputs)**
  - update by all TANDEMS partners (230215_tandems_KPI.xlsx)
- **Reflexive learning sessions: every 6 months (WP2)**
  - VITO in charge of organizing and facilitating sessions
  - format and timing determined in collaboration with project coordinator and action managers
  - invitation to all TANDEMS partners
- **Updated version of D2.3: every 6 months**
  - meeting minutes of learning sessions and project meetings (annex – confidential)

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TIMELINE and Outputs

Outputs	Scope	Responsible	2024 18	19	20	21	22	23	24	25	26	27	28	29	30	2025 31	32	33	34	35	36
Action-oriented monitoring									6-monthly reporting D2.3						6-monthly reporting D2.3						6-monthly reporting D2.3
Meeting minutes	pilots	TANDEMS action managers						x	x					x				x			
Result-oriented monitoring																					
Excel KPI & output	project	all TANDEMS partners							x						x						x
Meeting minutes	project	all TANDEMS partners				x	x		x		x		x		x		x		x		x

- **KPI & outputs table: every 2 months (status) and every 6 months (status, progress, outputs)**
  - update by all TANDEMS partners (230215_tandems_KPI.xlsx)
  - filling in minutes / actions for annexes to Del. 2.3 (20240612_deliverable 2.3_annexes_update M20_M24)
  - For reference:

20240329_Deliverable 1.3 Tandems KPI webtool report_final.docx

Technical Report_Part B_M1 to M18_TANDEMS_101077514.pdf

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Annex 4: Reflexive learning session – Agem Organisation (online, 5 September 2024)

1 Participants

Table 11: List of participants

Organisation	Name
VITO	Joeri Naus
VITO	Erik Laes
VITO	Erika Meynaerts
ZuidtrAnt	Sophie Loots
ZuidtrAnt	Liesbet Veulemans
Duneworks	Marten Boekelo
Duneworks	Sylvia Breukers
Gabrovo	Todor Popov
Agem	Justin Pagden
Kamp C	Maro Saridaki
Mechelen	Bart De Bruyne
Klimaan	Steven Laurijssen
EnEffect	Stanislav Andreev

2 Aim

The aim of the reflexive learning session is to share lessons learnt from the TANDEMS' pilot projects with the consortium partners, deepen insights and define actions. During the learning session following steps are taken (using Miro):

1. The action manager introduces the pilot project and explains the project's context (local, regional, national) to the participants.
2. The action manager explicates 3 to 5 key moments (i.e., events that really changed the course or dynamics of the project in a positive and/or negative way). For each event the action manager explains what happened (event), what the outcomes were (after) and what conditions and factors were important for making this happen (before). The participants take notes while listening (e.g., ideas, questions, feelings, associations). (cf. Figure 1)

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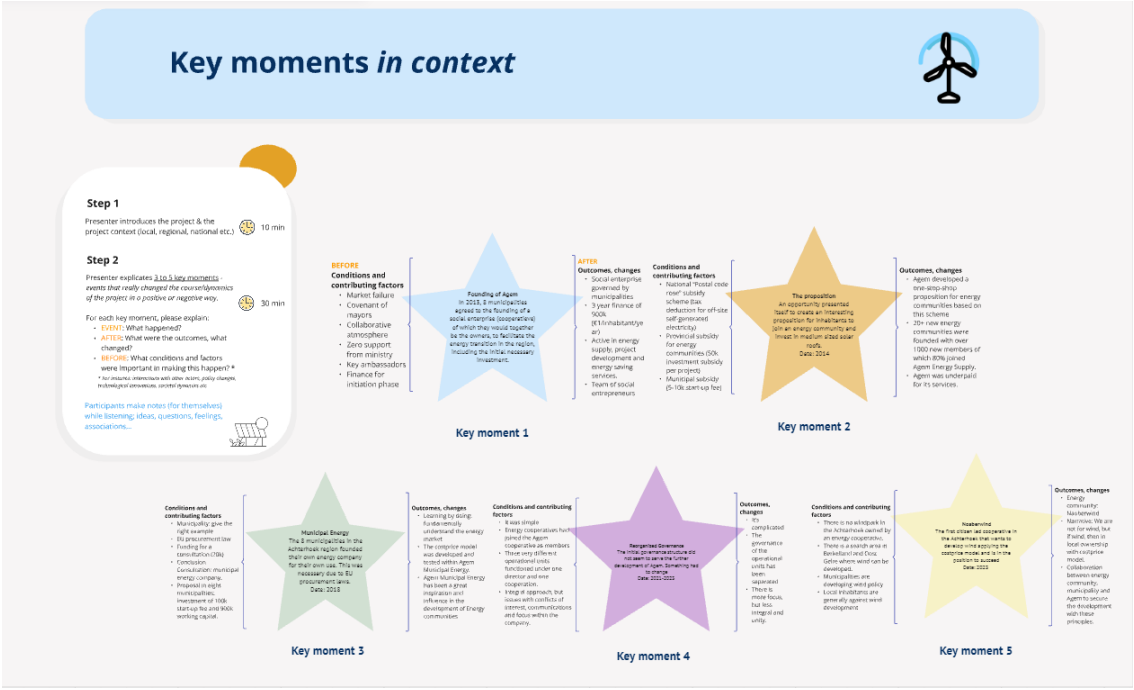

Figure 1: Example of Miro-board - key moments

3. The participants process their thoughts and write down their most important question(s) and their most important insight(s).
4. The participants share their questions with the action manager. The facilitator guides the discussion and uses the systemic iceberg to capture additional insights. (cf. Figure 2)

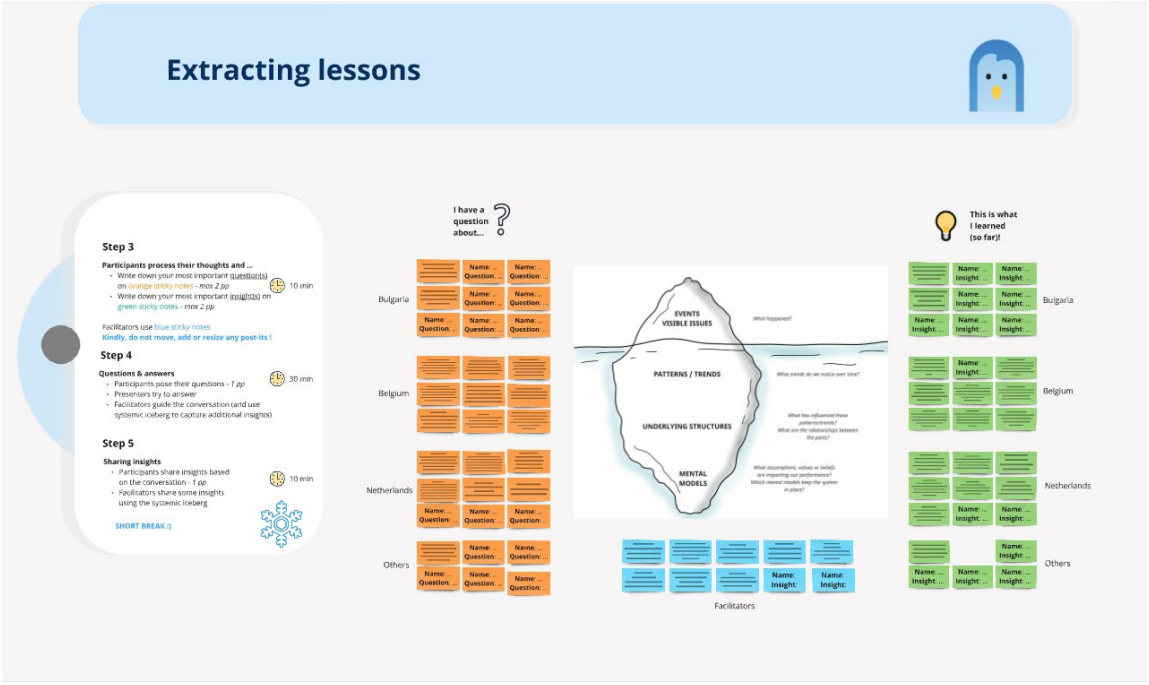

Figure 2: Example of Miro-board - questions and insights

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5. The participants share their insights. The facilitator guides the discussion and uses the systemic iceberg to capture additional insights. (cf. Figure 2)
6. The participants identify the most relevant “eye-openers” that they can benefit from in their own contexts. (cf. Figure 3)
7. The participants translate the learnings into actions (i.e., what changes or interventions are needed to strengthen the value network of the pilot project(s), to catalyse just energy projects at national or regional level, to facilitate wider systemic change at national or EU level?). (cf. Figure 3)
8. The action manager reflects on what he/she has learned for their pilot project (i.e., what are the key lessons, what could/should be changed as a result?). (cf. Figure 3)

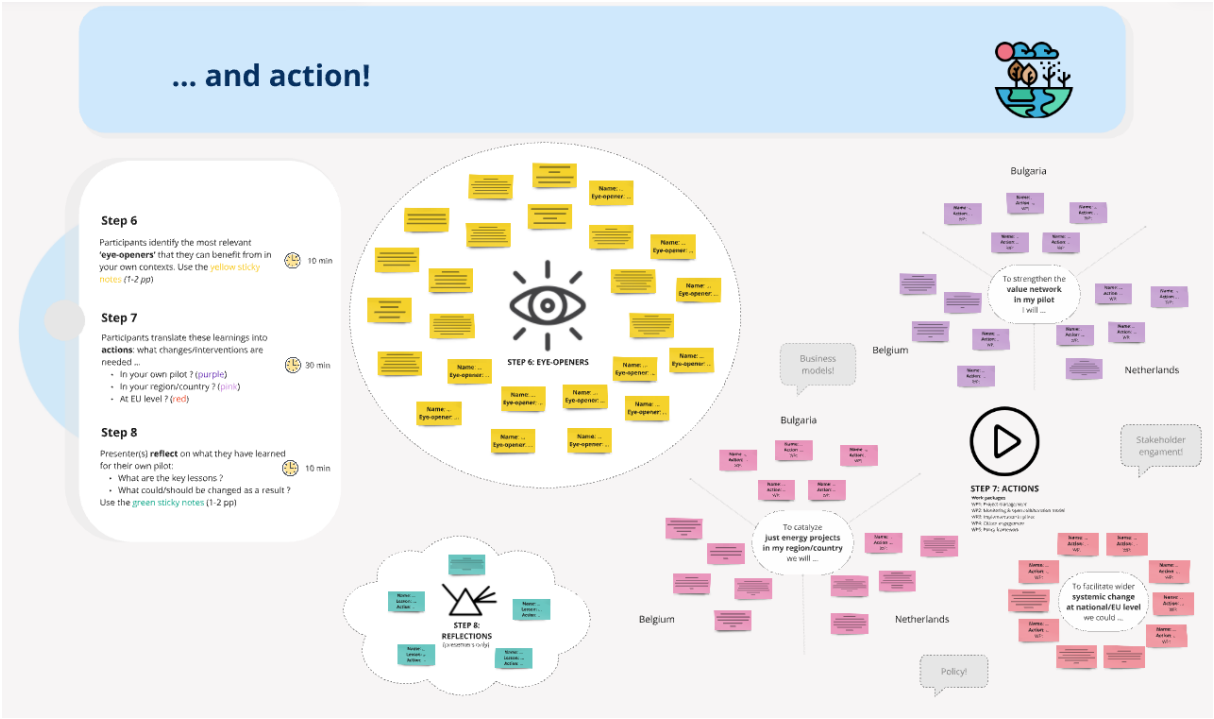

Figure 3: Example of Miro-board - eye-openers and actions

3 Learning objectives

Participants were asked to share their learning objectives with the presenter (i.e., action manager) ahead of the presentation, allowing the presenter to better tailor the content to focus on the context and key events. Also, both the learning objectives and any questions raised during the session (see section 4) can be utilized by the action manager to tailor and focus the guidance document for the pilots, as part of WP3.

- Understand the scope of action for local government within murky or seemingly constrictive national/EU regulation. What can you do for civil servants/policymakers to explore and claim that space?
- Learn which could be the necessary steps to be taken to develop an EC support organization.

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- How did you react on suspicious residents that dominate the conversation/meetings and tend to get hesitating residents on their side. How do you explain the "win" when there is no project decided yet?
- See if there are practical “to do's” that can be taken as quick wins in the relationship of Mechelen with RESCOOPS and in wind projects of the city of Mechelen.
- Effective municipal engagement. What is your role in the engagement of and between the various municipalities in your region? Is there a political “contract” set? How do you drive their motivation?
- What are pitfalls in the collaborations between energy communities and municipalities?
- To what aspects of energy justice have these developments contributed most?

The learning objectives serve as the basis for identifying lessons learned in Section 8. The learning objectives that were not addressed during the session are reformulated into actionable items in the action table presented in Section 7, if possible and relevant.

4 Introduction of pilot project: the story of Agem Organisation

The story begins in 2010, when eight municipalities in the Achterhoek region set ambitious goals for sustainable energy transition, laid down in the Groenlo agreement (similar to the Covenant of Mayors). During a visit to the Dutch Parliament in The Hague, they sought support from the Ministry of Economic Affairs, emphasizing the Achterhoek region's potential as an ideal testing ground for sustainable energy initiatives. Unfortunately, their proposal was rejected, and they returned disappointed. However, undeterred by the lack of initial support, they remained committed to their vision and moved from planning to action. ***[ambitious goals, political engagement, intrinsic motivation and resilience]***

In 2013, the organization was formally established as a social enterprise with the purpose of driving the energy transition. The organization recognized that pioneering such an effort required courage, resilience, and a willingness to learn from failures. Over time, they adapted their strategies based on practical experience, maintaining flexibility and a realistic approach to their goals. ***[pioneering, entrepreneurship, learning-by-doing]***

By 2024, the organization had transitioned from outlining future intentions to showcasing concrete achievements. Over ten years, they had become a recognized leader in the energy transition, not just locally but also internationally, thanks to their innovative “cost price model” and active involvement in various sectors of the energy industry. ***[diversification]***

Their mission is clear: to make the Achterhoek region energy neutral by 2050. They aim to achieve this through three primary actions—saving energy, producing sustainable energy, and supplying energy efficiently. They assist businesses and homeowners in reducing energy consumption, support local communities in developing renewable energy sources, and provide sustainable energy at a fair cost through a cooperative supplier. ***[clear mission and vision]***

5 Presentation of key events

Key event 1: Founding of Agem (2013)

Agem was founded in 2013 when eight municipalities in the region came together to create a social enterprise focused on achieving energy neutrality. The decision was driven by the recognition of a market failure: the private sector was not making the necessary strides toward

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the energy transition goals. With the market unable to address the region's needs, the local government decided to step in, forming Agem as a cooperative that could invest in and promote sustainable energy projects. The organization was initially funded with €900k for the first three years, with the support of all eight municipalities (i.e., 1 euro per inhabitant per year). The founding team was composed of social entrepreneurs dedicated to making a significant impact on the region's energy landscape. ***[risk capital, window of opportunity, opportunism, entrepreneurship]***

Key event 2: Launch of "Postcoderoos" (2014)

A significant opportunity emerged shortly after Agem's formation, allowing the creation of local energy communities. This initiative, which began around 2014, was driven by a combination of subsidies from national ("postcoderoos" - tax deduction scheme for off-site self-generated electricity), provincial (€50k investment subsidy per project), and municipal sources (€5 – 10k start-up fee), making it financially viable for residents to form their own energy cooperatives. Agem developed a "how-to" manual for setting up these energy communities, resulting in the establishment of over 20 new energy cooperatives and the recruitment of more than 1,000 members (80% joined Agem Energy Supply). However, despite the growth and engagement, Agem faced challenges, such as being underpaid for their services and not securing a stake in these new communities, which affected their ability to benefit from the subsequent energy market developments (energy crisis). ***[window of opportunity, opportunism, subsidies]***

Key event 3: Founding of the Municipal Energy Company (2018)

In 2018, the municipalities decided to establish their own energy company to manage their energy needs directly, a response to (complex) EU procurement laws and a desire to lead by example in the energy transition. They were promoting energy transition among citizens but realized they were not taking similar actions within their own organizations. The municipalities were purchasing energy from the market for public services like street lighting and buildings but had little control over it. To address this, a consultation was held (€20k funding for consultation), which led to the decision to establish a municipal energy company. This company was created solely for the municipalities' own use, not for selling energy to businesses or citizens. 7 out of 8 municipalities agreed to invest €100k to establish this company and ensure it had sufficient working capital (€900k). This initiative allowed the municipalities to better understand the energy market and manage their energy needs directly. It also led to the development of the cost-price model. This model, developed through their experience with the municipal energy company, has inspired other municipalities and energy communities to adopt similar approaches and has been crucial in developing new business models. ***[risk capital, lead by example; learning-by-doing]***

Key event 4: Reorganization of Agem (2021-2023)

In 2013, a cooperative was founded by eight municipalities, which established a holding company and three business units focused on energy savings, project development, and energy supply. Each unit operated in a distinct area of activity, creating a diverse organizational structure that remained unchanged for the first five years.

By 2018, it was clear that the initial plan was for the municipalities to kickstart the cooperative, but not necessarily to maintain ownership indefinitely. The goal was to eventually include the

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energy communities that had been founded or supported by the cooperative. This shift meant that the cooperative now included both municipalities and energy communities under its governance. However, due to procurement laws, the municipal energy company, had to be kept separate from the cooperative's main governance structure. ***[vision, strategy] [local government as initiator and facilitator; supporter and user vs member]***

This dual structure led to challenges as the cooperative grew. The municipalities and energy communities had different characteristics and priorities, which resulted in varied responses to the cooperative's initiatives and sometimes even conflicts of interest. The organizational setup, with a single director overseeing multiple units and a project-focused energy desk funded by the municipalities, also presented complications. The high-risk nature of project development and the commercial focus of the energy supply created additional tension within the organization, hindering its ability to evolve effectively. ***[conflict of interest]***

To address these challenges, a restructuring began in 2021 and was completed in 2023. The cooperative was reorganized to separate governance more clearly: the energy savings unit remained under the municipalities, while the energy supply unit was placed under the energy communities. The high-risk project development unit was eliminated, and the cooperative shifted to a consultancy role instead. This strategic change aimed to reduce risks and focus more on specialized roles.

Currently, all energy experts work under a foundation that serves the different entities, further complicating the governance structure. While this new arrangement allows for more focus within each unit, it also reduces the overall unity and integrated approach that previously existed.

Key event 5: Noaberwind (2024)

Noaberwind is a citizen-led cooperative in the Achterhoek region that aims to develop a wind project using the cost-price model. This initiative is the first of its kind in the area, offering a unique opportunity for local energy transition. Currently, there are no wind parks owned by energy cooperatives in the Achterhoek, which presents a challenge from a just energy transition standpoint. ***[window of opportunity]***

Unlike many traditional wind projects, Noaberwind does not explicitly advocate for wind energy. Instead, their narrative is pragmatic: "We are not necessarily for wind, but if wind development is inevitable in our region, we want it to be locally owned and to apply the cost-price model." This approach resonates with a broad base of local citizens, even those generally opposed to wind projects, as it emphasizes local control and benefits. ***[clear proposition – local ownership]***

Since its inception, Noaberwind has been working closely with the municipality and Agem to ensure that any wind development aligns with these principles of local ownership and cost price model.

6 Q&A

Question 1: What is exactly the difference between the energy community that we have seen and a typical commercial company? The price is the same, which makes me feel that not all the members may be involved in the decision-making process.

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The key difference is that an energy community is not necessarily a wholesaler like a typical commercial company. Traditional energy suppliers buy energy from the (international) marketplace and sell it at a profit. In contrast, an energy community facilitates the use of locally produced electricity, focusing more on enabling local energy use rather than profiting from reselling energy.

Question 2: Do energy communities supply energy only to their members, or can they also supply to external customers?

In general, energy communities can supply energy to anyone who requests it, based on Dutch law which states that energy companies cannot refuse potential customers. However, the model is hybrid: energy can be supplied to non-members and specifically to members, depending on the setup and assets involved.

Question 3: How are members involved in the decision-making process within an energy community? For example, do all members have a vote on decisions like installing new equipment?

Members of a citizen energy community typically have a direct say in decisions through a “one person, one vote” system in the General Assembly. For Agem, decision-making is more indirect, as influence is exerted through the energy community that is a member, rather than directly as a citizen.

Question 4: Does the decision-making structure of the organization comply with the idea of a just energy transition, given that there is only indirect voting for citizens?

The model aims to keep local energy communities in the driver's seat. Larger, centralized models, like Ecopower in Belgium, might limit local citizen influence. A balance needs to be maintained between facilitating and enabling local communities while ensuring they retain control over decisions affecting them***. [balance between facilitating and controlling]***

You could debate that Agem is an energy community as it is a social enterprise facilitating energy transition and energy communities. If you want a just energy transition it is important that citizens have a direct say through (small) local energy communities. Energy communities can function properly if they are facilitated properly. The facilitator should not have direct influence and keep local energy communities in the driver seat.

Question 5: How do you ensure that energy communities in your region choose you as the facilitating organization? Do they have options to choose from different organizations, or is it organized regionally where they can only work with specific organizations? How do you convince an energy community to work with you?

Energy communities in the region are not locked into working with a single organization. There is no monopolized situation; communities have the freedom to choose. Agem operates on a commercial market, so Agem must do a good job to attract and retain energy communities. They are free to choose other organizations if they offer better services or conditions. Agem must provide excellent service and value to remain competitive. Energy communities understand that working together in the region is very important to reduce costs, but they are the owners, they are in the drivers’ seat.

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Question: If Agem had been more self-interested in project development and extracted more value from these projects, how might the situation have been different?

Agem provided services to energy communities but was underpaid compared to their actual costs. Two potential solutions were considered: increasing payment rates, which was not feasible due to tight budgets, or accepting lower payment in exchange for a stake in the energy community's success. The latter model, used by some wind project developers such as Windunie, could have been beneficial, especially during the energy price crisis.

Agem initially took on the role of project developer due to local energy communities' difficulties with large projects. They faced high costs and risks, and their approach was to develop projects themselves, hoping to attract members or buyers later. However, this strategy led to significant financial risk, especially during tough times, which eventually led to the organization's governance structure being challenged and dismantled. If the projects had succeeded before the crisis, the outcome might have been different.

Question: Would the model of Agem, founded by 8 municipalities, work on a smaller scale, such as in a smaller town, such as Blankenberge (Flanders), which has just founded its own local energy cooperative?

The ideal scale for such a model is context dependent. While Agem involves 8 municipalities and 300.000 citizens, the key factors are the sense of collaboration, identity, and the local community's desire to work together. Smaller communities, such as Blankenberge, a coastal city in Flanders, with around 20.000 inhabitants, could certainly develop their own energy community, but they might face challenges related to services such as customer care and energy trading. Collaborating with neighbouring municipalities or even at a national level could help manage these complexities. Small communities can be effective but may need to work with others to handle more complex or specialized tasks. ***[collaborative mindset; local identity] [partnering]***

Question: Could a local ownership model where cities insist on having ownership of local wind projects, be organized in a similar way if a company like Ecopower has windmills that are not seen as locally owned? How can we ensure a more local approach if Ecopower seems distant?

The situation with Ecopower differs from local facilitation models. Ecopower develops projects for itself, whereas Agem primarily facilitates development. Agem found that working with commercial parties can lead to conflicts of interest, so they focus on 100% local ownership. However, defining what constitutes “local ownership” can be complex and often involves financial transactions rather than genuine local canv. E.g., 5 farmers have an energy cooperative with wind turbines on their land. 100% local ownership. But is not the model that Agem wants for just energy transition.

Agem is exploring stewardship models, where the goal is to provide affordable local energy without traditional ownership structures. In these models, there are no owners per se, but rather stewards who manage the project to meet specific goals like providing energy locally at cost price. This approach avoids the pitfalls of purely financial ownership and aligns with the broader mission of a just energy transition. ***[ownership vs stewardship]***

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This idea of a stewardship model is a theme within Agem organization and is being discussed on a national scale, though it hasn't been widely implemented yet. The challenge is ensuring that energy cooperatives truly serve the local community and not just a commercial interest.

Question: What should be done if intrinsic motivation from municipalities for energy initiatives is lacking?

The model where municipalities take the initiative, like the Agem model, is quite unique. Most energy communities are citizen-led rather than municipality-led. If municipalities lack motivation, citizens can also initiate these projects. However, a challenge is the "Death Valley of professionalization", where energy communities struggle to transition from volunteer-based to professionally managed as they grow. Many communities falter at this stage due to rising costs and insufficient revenues. ***[the Death Valley of professionalization]***

In Agem's case, municipalities played a crucial role by providing funding and long-term support, which helped to overcome this professionalization hurdle. This support was essential for gaining the expertise needed to advance the cooperative energy sector. Ultimately, if municipalities do not see the value, they may not participate. It is important to have visionary leaders. Without such support, achieving success can be very challenging. Agem's approach might serve as inspiration, but convincing reluctant municipalities remains difficult. ***[visioners, funding]***

Question: What exactly does Agem's facilitation consist of? How does Agem help these communities?

The facilitation primarily involves energy savings, project development and energy supply. For energy savings, a significant portion of our organization, about 70-80% of Agem's staff, is dedicated to running the energy desk, which is 100% financed by both local and national governments. The energy desk collaborates with energy communities to engage citizens and execute projects.

For project development and energy supply, Agem provides comprehensive support to local communities. For instance, in the "postcoderoos" project, Agem developed a detailed manual outlining the steps required to establish and manage an energy project, such as setting up the organization and understanding the regulations. Agem handles the technical aspects, like creating the business case and navigating rules and regulations, allowing local leaders to focus on engaging their communities. Agem also offers ongoing support and shares its expertise, such as promoting the cost price model for energy.

Agem is purely facilitative—they provide services and expertise without having a direct stake in the projects. This means Agem supports energy communities in developing their assets and maximizing their value for users, but Agem does not hold any ownership in these projects. Additionally, the lobbying efforts at the ministry level are also part of the services Agem provides to support energy communities. ***[facilitator]***

Question: Agem was underpaid at the beginning, and energy communities have constrained budgets. How does it work now? Can communities afford Agem's services, or do they still have to get funding elsewhere?

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Agem is still being underpaid for its services, and most of the funding comes from subsidies. For instance, Agem relies on subsidies like the LIFE program and local project grants. Agem is not well-positioned financially due to this reliance on external funding. However, it is important to note that some energy suppliers, like Energie Van Ons, have managed to generate substantial revenue during the energy price crisis, providing them with the capital to invest in development. In the case of Agem, municipalities play a crucial role by funding activities that are not covered by the market, particularly in the initial phases. Municipalities intervened during market failures and had the capacity to do so effectively. Agem could have had a share in the projects of the energy communities. But then they would have had an interest and would not solely be facilitating. ***[funding]***

As the market matures and energy communities gain more capital, it becomes possible for these communities to fund their development, reducing their reliance on subsidies. In the Netherlands, many energy communities and suppliers now have capital and scale, allowing them to include facilitation costs within their business models, similar to how companies fund research and development. ***[capital and scale]***

Question: Do you expect that institutional investors, like pension funds, can play a larger role in the future? Is there any movement in that direction, given that there is a lot of money available?

Institutional investors, like pension funds, could play a larger role in the future, especially if the scale of projects is big enough. Pension funds typically look for large-scale investments. One important opportunity in the Netherlands would be for energy communities to gain a stake in wind development at sea. For example, Belgium has legislation that facilitates this kind of involvement.

7 Eye openers and Actions

Steven Laurijssen **(Klimaan)** acknowledged that the perception of wind energy tends to be negative among the general public. Involving local citizens by putting windmills into their hands—essentially, allowing them to have ownership and control over local wind energy projects—can lead to a more positive community response. This aligns with the concept of stewardship, where the community feels a sense of responsibility and ownership over local resources, thereby **improving the acceptance and support of renewable energy initiatives**. To translate this insight into action, Steven Laurijssen suggested **identifying local energy communities in the region that could benefit from a similar approach as in the pilot of Noaberwind (Action - WP3)**. This means finding and supporting local groups that are interested in participating in or managing wind energy projects. By empowering these communities with ownership or control over wind energy assets, it is possible to foster a more positive perception of and greater community engagement for renewable energy. Additionally, Steven acknowledged that while local organization and replication of this model is feasible, there may also be a need to consider changes at other levels, such as policy or structural adjustments, to fully support and scale this approach.

Erika Meynaerts **(VITO)** acknowledged the importance of **stewardship in the context of local energy initiatives**. Specifically, she found the concept of 100% local ownership compelling, particularly when compared with a stewardship model. This insight emphasized the potential

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benefits of local ownership in creating more inclusive, citizen-led energy initiatives that engage communities more effectively. To act on this insight, Erika Meynaerts plans to investigate further the concept of local stewardship by **identifying successful examples of stewardship models in the energy domain.** She intends to **use these examples to inform a policy dialogue in Flanders**, focusing on how local authorities and energy communities can collaborate to make citizen-led energy initiatives more inclusive. **(Action – WP5)**

Maro Saridaki **(Kamp C)** realized the **importance of facilitation and involvement across different levels and types of organizations**, including citizen innovators, municipal entities, policymakers, and private organizations. She recognized that effective facilitation could help engage various stakeholders and ensure their active participation in energy projects. Based on this insight, Maro Saridaki proposes that **in the next value network mapping session for the energy community of Kamp C, the focus should be on involving JET pioneers from all these different organizations (Action - WP3).** The goal is to actively include them as facilitators to ensure their commitment and engagement in the process.

Marten Boekelo **(Duneworks)** realized the **significance of scale**, noting that impactful changes can occur even at a smaller, regional level. He observed that by coming together on a regional scale, it is possible to secure necessary financing and introduce innovative models that may not fit into existing market structures, thus allowing for professionalization and successful implementation. Marten Boekelo's related action involves **advocating for the establishment of societal R&D budgets at the municipal level (Action - WP5).** He suggested that these budgets, which would be allocated to support innovations in areas where the market fails, can help overcome financial barriers and promote new models. His goal is to **replicate this approach and encourage investment in regions where innovation is needed but not currently supported by market mechanisms (Action – WP5)**.

Sylvia Breukers **(Duneworks)** realized that **involving municipalities as integral part of the energy community** model—rather than just facilitators—can significantly ease the challenges that energy communities face. This involvement helps in institutionalizing relationships with municipalities and securing their commitment, thus reducing the complexities of collaboration and enhancing trust-building. Sylvia Breukers' action is to **use this insight as a guiding example for creating new collaborative spaces between energy communities and municipalities. This involves incorporating the model into ongoing policy dialogues and discussions (Action WP5 & 6).**

Liesbet Veulemans **(ZuidtrAnt)** realized that while the focus has been on starting up local energy communities, there is also a **critical need for ongoing facilitation** to support their development and progress. Even if the initial start-up phase is not within ZuidtrAnt's direct involvement, there is still a valuable role to be played in facilitating the continued growth and success of these energy communities. The action involves exploring the possibility of setting up a dialogue or reflection with the Energy Houses that are currently involved in supporting the start-up of energy communities. The dialogue will **explore ways to support the ongoing development and facilitation of energy communities, including the roles that Energy Houses and Energy Cooperatives can play (Action - WP5).**

Bart De Bruyne **(City of Mechelen)** was impressed by the **commitment of municipalities** in the Achterhoek to allocate substantial funds and develop expertise to facilitate the initial stages

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of projects. He found it noteworthy how municipalities are willing to invest in building the necessary support systems from the start. While Bart De Bruyne does not have a specific action at this moment, his insight emphasizes the **importance of recognizing and leveraging municipal support and expertise in the early stages of project development.**

Erik Laes **(VITO)** acknowledged how exceptional the Agem case in the Netherlands is, where **municipalities** have played a **leading role in driving the energy community movement**. He is curious about why this case is unique, especially considering the general reluctance of municipalities to invest in energy projects due to their focus on core policy areas and the inherent risks of early-stage funding. Erik Laes' action is to **further investigate and understand what makes the Agem case exceptional (Action - WP2).** This involves exploring why the municipalities in the Agem case were willing to invest significant resources and take risks, and whether there are similar examples in other regions.

Justin Pagden **(Agem)** realized that while the Agem case is unique and interesting, there is a challenge in identifying **which specific elements of this case are replicable and useful in different contexts**, such as in other regions in the Netherlands or Bulgaria. He recognized that while the story of Agem provides valuable insights, the key challenge is to discern which aspects can be applied effectively in other regions, facing different circumstances. Justin Pagden's related action involves **analyzing the Agem case to extract and identify the replicable elements that can be useful for other contexts (Action - WP2).**

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Table 12: List of actions

Action	Driver	Related Work Package
Identify local energy communities in the region of Mechelen that could benefit from a similar approach as in the pilot of Noaberwind	Steven Laurijssen (Klimaan)	WP3 – pilot projects
Identify successful examples of stewardship models and explore if these can be used for the policy dialogue in Flanders	Erika Meynaerts (VITO)	WP5 – policy dialogue
Secure commitment of JET pioneers in the next value network mapping session for the energy community of Kamp C	Maro Saridaki (Kamp C)	WP3 – pilot projects
Advocate for the establishment of societal R&D budgets at the municipal level	Marten Boekelo (Duneworks)	WP5 – policy recommendations
Use the example of Agem as guiding for creating new collaborative spaces between energy communities and municipalities	Sylvia Breukers (Duneworks)	WP5 – policy dialogues & WP6 - communication
Set up a dialogue with the Energy Houses to explore ways to support the ongoing development and facilitation of energy communities	Liesbet Veulemans (ZuidtrAnt)	WP5 – policy dialogue
Advocate the importance of recognizing and leveraging municipal support and expertise in the early stages of project development	Bart De Bruyne (City of Mechelen)	WP5 – policy dialogue & policy recommendations
Further investigate and understand what makes the Agem case exceptional	Erik Laes (VITO)	WP2 – business models
Extract and identify the replicable elements that can be useful for other contexts	Justin Pagden (Agem)	WP2 – business models
Learning objective not targeted during session → Discuss with Maroeska experience of Noaberwind	*Liesbet Veulemans (ZuidtrAnt)*	*WP3 – pilot projects*

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with suspicious residents that dominate the conversation/meetings and explaining the "win" when there is no project decided and share lessons learned with partners in the beginning of a learning session		

8 Lessons learned for TANDEMS

Based on the insights and key eye-openers gathered during the learning session, the following lessons can be drawn, aligning with the learning objectives set by the participants in the beginning of the learning session.

Scope of action for local governments within murky or seemingly constrictive national regulation.

The story of Agem demonstrates that even when initial national support is lacking, local governments can explore and claim regulatory space by adopting a proactive, innovative, and resilient approach. Here are some actionable steps based on the Achterhoek region's experience:

Identify and leverage local strengths and opportunities: local governments should start by identifying their unique strengths and the opportunities present in their region. *(relevant 'tools' could be system analysis, envisioning, exploring pathways)*

Build strategic partnerships: by pooling resources and working together, municipalities can take on initiatives that may have been too large for a single municipality to handle alone.

Adapt and innovate in response to challenges: willingness to innovate and learn from both successes and failures (learning-by-doing) is crucial for navigating unclear regulatory environments.

Steps to develop an energy community support organization.

Establish a clear vision and mission ("visionary leaders"): start with a clear and ambitious goal for the organization. A long-term goal provides direction and motivates stakeholders, including municipalities, local communities, and businesses.

Create a supportive legal and organizational structure: formally establish the organization as a legal entity, such as a social enterprise. This structure allows the organization to function with a clear purpose and framework, aligning stakeholders and facilitating the pooling of resources.

Secure initial funding and risk capital ("seed funding"): obtaining initial funding is crucial to cover early operational costs and investments. This "seed funding" can come from local governments, private donors, or community contributions.

Develop a strong governance model: establish a governance model that balances the interests of different stakeholders.

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Engage stakeholders and build partnerships: actively involve local communities, municipalities, and other stakeholders from the start. This involvement can take the form of workshops, consultations, and collaborative projects. Building strong relationships with (local) governments, businesses, and community groups is essential for garnering support and ensuring long-term success.

Develop a flexible and adaptable strategy: the organization should remain open to learning and adapting its strategies based on experiences and changing circumstances. This adaptive approach helps in responding to market changes, regulatory shifts, and evolving community needs.

Provide (a diverse portfolio of) facilitation and support services: offer facilitation services to help local energy communities navigate technical, regulatory, and financial challenges. Such services enable communities to focus on local engagement and project execution. Moreover, diversifying the portfolio of services helps mitigate risk by avoiding dependence on a single revenue stream and enhances the organization's flexibility and resilience in an evolving energy landscape.

Leverage policy and financial opportunities (at different governmental levels): seizing opportunities can significantly boost community engagement and organizational growth. Successfully leveraging windows of opportunity not only helps to achieve objectives but also to build a track record of success that enhances credibility. This credibility is crucial when seeking further support from stakeholders or when advocating for new initiatives and policies. By recognizing the potential of the policy and quickly mobilizing resources to capitalize on it, an organization demonstrates a capacity for opportunism that is beneficial in dynamic and evolving sectors.

Promote local ownership and just energy transition: emphasize local ownership and control over energy projects to ensure a just energy transition. This approach aligns with community values and ensures that the benefits of energy projects are distributed equitably among local stakeholders.

***Invest in professionalization and capacity building (watch out for the "death valley of professionalization")*:** as the organization grows, investing in professional staff and capacity building is essential to manage increasing complexities and scale. This includes hiring skilled professionals, providing training, and developing robust administrative and operational systems.

Evaluate and adapt business models: regularly assess the financial sustainability of the organization's business model. This may involve exploring different revenue streams, such as consulting services, cost-price energy supply models, or taking stakes in projects.

Encourage innovation and entrepreneurship: foster a culture of innovation and entrepreneurship to explore new opportunities and adapt to changing circumstances.

Quick wins to enhance the relationship between municipalities and energy communities.

Based on Agem's experiences in the Achterhoek region, several practical steps can be taken as quick wins to enhance the relationship between municipalities and energy communities.

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To foster a strong collaborative relationship, municipalities and energy communities should work together to **establish common objectives and detailed action plans** (with dedicated budgets). This involves holding workshops and meetings to align on mutual goals and create a roadmap for achieving them. → Quick win: create a shared vision document that outlines mutual goals for the energy transition, along with specific actions (e.g., in frame of Covenant of Mayors or Local Energy and Climate Pact (Flanders)). This document should be updated regularly to reflect progress and evolving priorities.

Securing financial support is essential for the successful execution of citizen-led energy projects. Municipalities and energy communities should collaborate to identify and apply for relevant funding and subsidies. → Quick win: form a joint funding application team that combines expertise from both municipalities and energy communities. This team can pursue grants and subsidies more effectively, increasing the likelihood of securing necessary financial resources.

Sharing resources and expertise can greatly benefit both municipalities and energy communities. By collaborating on e.g., training programs, both parties can enhance their capabilities and project outcomes. → Quick win: organize a series of workshops or training sessions on topics such as project management, technical skills, and regulatory compliance. These sessions should be accessible to both municipal staff and energy community members.

Starting with small-scale pilot projects can provide valuable insights and build confidence in collaborative approaches. These projects serve as testing grounds for new models and strategies. → Quick win: initiate a pilot community solar project or an energy-saving initiative that involves resources and participation from both municipalities and energy communities. Use these pilots to refine approaches and demonstrate the benefits of collaboration. Establish societal R&D budgets at the municipal level to finance these demonstrators.

Support structures are essential for helping energy communities overcome challenges, especially in their early stages of development. Establishing dedicated support mechanisms can enhance the effectiveness of community energy projects. → Quick win: create a support fund or advisory service (one-stop-shop) to assist energy communities with project development, legal issues, and financial planning.

Engaging local residents is crucial for gaining support and ensuring the success of community energy initiatives. Municipalities and energy communities should work together to involve citizens in the decision-making process. → Quick win: host public information sessions or town hall meetings to gather community input and build support for energy projects. These events will help align projects with local needs and preferences.

Regular reflection on progress made in joint projects helps identify successes and areas for improvement. Learning from past experiences can inform future initiatives and strengthen the partnership. → Quick win: establish a feedback mechanism (e.g., learning history workshop, reflexive learning session) to reflect on projects and gather insights. Use this information to refine strategies and improve collaboration in future projects.

Fostering collaboration and engagement among municipalities.

The experience of municipalities working together with Agem provides valuable lessons on how collaboration and engagement among municipalities can be built and sustained over time.

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One of the most important factors in fostering collaboration is **resilience and adaptability**. Municipalities must be prepared to face setbacks and adjust their approach when challenges arise.

A **clear mission and vision** are also vital for successful collaboration. a shared vision ensures that all actors involved are working toward the same objective, which helps them stay focused, even when confronted with challenges or differences in approach.

Municipal leadership plays a crucial role in fostering collaboration. Municipalities can take the lead in ensuring that public interests are prioritized, while also driving collaboration among various stakeholders.

Financial support is another key factor in fostering collaboration. The **initial seed funding and ongoing financial backing** are instrumental in establishing the organization and supporting its operations. Municipalities must be willing to commit to long-term financial support, as this ensures the sustainability of collaborative efforts and demonstrates their dedication to the project.

Effective governance is crucial for managing collaboration among diverse stakeholders. Collaborative governance requires continuous evaluation and adaptation to ensure that it remains effective and aligned with the goals of the initiative.

In fostering collaboration, it is also important for municipalities to define their **role as facilitators rather than owners of projects**. By empowering local energy communities and maintaining a facilitating role, municipalities can create an environment where collaboration thrives, as local stakeholders feel a sense of control and responsibility over the projects.

Finally, **prioritizing local ownership** is critical for fostering engagement and long-term collaboration. When communities feel that they directly benefit from collaborative efforts, they are more likely to stay engaged and contribute to the success of the initiative.

Possible pitfalls in the collaborations between energy communities and municipalities.

Municipalities and energy communities may have **different priorities and goals**, leading to conflicts of interest. A dual governance structure, where municipalities and energy communities operate under different frameworks, can lead to confusion and conflicts. The separation of responsibilities, especially when private capital is involved, complicates decision-making and can result in misaligned objectives.

The adoption of the cost-price model and focus on local ownership demonstrates Agem's commitment to keeping the benefits of energy projects within the community. However, since Agem did not obtain a stake in the energy communities they facilitated, their ability to gain from market developments was limited, leaving them **exposed to external economic factors**, such as the energy crisis.

Agem’s contribution to energy justice.

Agem has been a strong **advocate of local ownership** in energy projects. Their approach to facilitate energy communities reflects a commitment to ensure that local residents have a stake in and benefit from energy initiatives. By promoting local energy cooperatives and engaging residents in energy decision-making, Agem supports a more equitable distribution of energy benefits within the community.

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Through the implementation of the cost-price model, Agem **provides energy at a fair cost**. This model ensures that energy projects are financially accessible to local communities, aiming to keep energy prices fair and transparent. The commitment to a cost-price model directly addresses the issue of affordability in the energy transition.

Agem has provided substantial **support to local communities** in developing their own renewable energy projects. Their role as a facilitator, despite financial challenges, underscores their dedication to empowering communities to achieve energy independence and sustainability.

Agem's willingness to adapt their strategies based on practical experience and evolving needs demonstrates a **commitment to continuous improvement and responsiveness**. Their reorganization and strategic shifts, such as the establishment of the Municipal Energy Company and the restructuring of the business units, reflect a focus on refining their approach to better serve the community and address emerging challenges in the energy sector.

Valuable lessons from the Noaberwind project.

The Noaberwind wind project emphasizes that if wind development is inevitable, it should include local ownership and benefit the local community. This model aims to align with principles of a just energy transition by involving local citizens in decision-making and ensuring that they benefit directly from energy projects. By ensuring that wind development is locally owned and operated, the project addresses community concerns and increases local buy-in. This model can be particularly useful in other regions where local populations are sceptical about wind projects.

The cost-price model used by Noaberwind offers a **fair pricing structure** for **energy that aligns with the principles of a just energy transition**. This model can be adapted by other wind projects to ensure that energy remains affordable and that the benefits are equitably distributed among local stakeholders.

Noaberwind's focus on involving local citizens in the decision-making process underscores the importance of **democratic engagement** in energy projects. Projects that incorporate mechanisms for citizen participation are likely **to foster greater community support and legitimacy**.

The project's collaboration with Agem and the municipality illustrates the value of **partnering with established organizations to leverage expertise and resources**. Other regions can benefit from forming similar partnerships to support project development, share knowledge, and navigate regulatory challenges.

Each region has its own unique context, and the Noaberwind project's success underscores the importance of **tailoring approaches to fit local conditions**. For example, in the Achterhoek region there are currently no wind parks owned by energy cooperatives, which presents a challenge from a just energy transition standpoint, but also offering a unique opportunity for the local energy transition.

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Annex 5: Reflexive learning session – Otterbeek (online, 5 September 2024)

1 Participants

Table 13: List of participants

Organisation	Name
VITO	Joeri Naus
VITO	Erik Laes
VITO	Maria Caballero Pons
VITO	Katharina Biely
ZuidtrAnt	Sophie Loots
ZuidtrAnt	Liesbet Veulemans
Duneworks	Marten Boekelo
Duneworks	Sylvia Breukers
Gabrovo	Todor Popov
Agem	Justin Pagden
Kamp C	Jet Groen
Kamp C	Maro Saridaki
Mechelen	Bart De Bruyne
Klimaan	Steven Laurijssen

2 Aim

The aim of the reflexive learning session is to share lessons learnt from the TANDEMS' pilot projects with the consortium partners, deepen insights and define actions. During the learning session following steps are taken:

1. The action manager introduces the pilot project and explains the project's context (local, regional, national) to the participants.
2. The action manager explicates 3 to 5 key moments, i.e., events that really changed the course or dynamics of the project in a positive and/or negative way. For each event the action manager explains what happened (event), what the outcomes were (after) and what conditions and factors were important for making this happen (before). The participants take notes while listening (e.g., ideas, questions, feelings, associations).
3. The participants process their thoughts and write down their most important question(s) and their most important insight(s).
4. The participants share their questions with the action manager. The facilitator guides the discussion and uses the systemic iceberg to capture additional insights.
5. The participants share their insights. The facilitator guides the discussion and uses the systemic iceberg to capture additional insights.

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6. The participants identify the most relevant “eye-openers” that they can benefit from in their own contexts.
7. The participants translate the learnings into actions (i.e., what changes or interventions are needed to strengthen the value network of the pilot project(s), to catalyse just energy projects at national or regional level, to facilitate wider systemic change ate national or EU level?)
8. The action manager reflects on what he/she has learned for their pilot project (i.e., what are the key lessons, what could/should be changed as a result?)

3 Looking back to previous session: stewardship versus ownership

VITO highlighted their key eyeopener from the previous learning session: **a shift from an ownership-based model to a stewardship model** (cf. Section 10 for slides). Specifically, the Agem organization in the Netherlands is exploring stewardship models that aim to provide affordable local energy without traditional ownership structures. Instead of owners, these models rely on stewards to manage projects and meet goals, such as providing energy locally at cost price. This approach avoids the pitfalls of purely financial ownership and aligns with the broader mission of a just energy transition, which includes overarching societal goals. This discussion is not limited to the energy domain but can also apply to other fields.

VITO presented insights from healthcare to inspire TANDEMS’ partners about how local authorities and energy communities could collaborate using a stewardship approach. The stewardship model ensures that the management of health data is guided by broader societal missions rather than financial interests. The stewardship model focuses on governance that supports the long-term mission and vision of an organization, instead of prioritizing shareholder profit. Stewards are responsible for ensuring this alignment. The stewardship model offers a valuable perspective for addressing challenges in traditional ownership structures, making it relevant to ongoing discussions in various fields.

Examples of companies using stewardship models include Ecosia, which reinvests its profits into planting trees, and Patagonia, known for its environmental focus. Even Carlsberg follows a stewardship model, with profits funding scientific research.

In a stewardship model, stewards are often organized into a foundation or trust, whose main aim is to protect the company’s values and mission. This model allows companies to undertake profit-driven activities but always within the framework of their long-term goals. In the context of the energy transition, this model could also be adopted by a local coalition. Such a coalition might include local authorities, energy communities, and companies working together with shared resources like rooftops or land for renewable energy projects. They would develop a charter outlining their core values, such as citizen participation or a commitment to renewable energy, and stewards would oversee the use of resources to ensure alignment with these values. Activities, such as building a solar plant, could be profitable for partners, but part of the profits would always be reinvested into the coalition's long-term objectives. However, one challenge in this model is that each partner in the coalition would lose some degree of autonomy, as decisions would be made collectively according to the charter. This potential barrier might make it difficult for some organizations to fully embrace the model.

4 Learning objectives

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Participants were asked to share their learning objectives with the presenter (i.e., action manager) ahead of the presentation, allowing the presenter to better tailor the content to focus on the context and key events. Also, both the learning objectives and any questions raised during the session (see section 4) can be utilized by the action manager to tailor and focus the guidance document for the pilots, as part of WP3.

- Business case Otterbeek: pros & cons?
- To what extend is there a financial benefit for the vulnerable inhabitants of Otterbeek?
- What are the lessons to be learned w.r.t. "the broadening of the social concept"? (Is it related to what was found in the 3 workshops, namely that inhabitants are interested in more social cohesion and a meeting place (and not yet so much interested in energy)?
- Is the Otterbeek (business) model applicable in the Netherlands as a model for social tenants after the netting legislation has been abolished?
- What is your advice when including both the directors of the social housing company and the vulnerable inhabitants?
- How do you involve citizens, is only the financial benefit an argument to get involved?
- Is it possible to write a roadmap (tool) for this case, to apply (copy-paste) in other social housing estates? → *cf. also D2.3 for the Learning history workshop of Otterbeek*

The learning objectives serve as the basis for identifying lessons learned in Section 8. The learning objectives that were not addressed during the session are reformulated into actionable items in the action table presented in Section 7, if possible and relevant.

5 Introduction of pilot project: the story of Otterbeek

The Otterbeek case is a social energy transition project involving social renters in Mechelen. The project's context was marked by the presence of **motivated key players**, including a social housing company (Woonland), renewable energy cooperative (Klimaan CVSO) and volunteers (Klimaan vzw), the local Distribution System Operator (DSO) (Fluvius), and the City of Mechelen. The project tackled the challenge of increasing renewable energy production while reducing the need for large solar parks by utilizing rooftop spaces. By utilizing available rooftops, the project tackled the challenge of increasing renewable energy production while reducing the need for large solar parks. The approach involved installing solar panels on social housing rooftops, with plans to extend the installation to approximately 200 houses. The financing was achieved through **citizen investment** campaigns, which offered a 4% return on dividends in the previous year. This allowed both local and distant investors to contribute. For the social renters, the project would provide affordable and stable energy prices over 20 years. An additional goal was to build an energy community to share the surplus energy among the social renters, fostering a sense of community. Convincing social renters of the project's benefits required **extensive information campaigns and community engagement to build trust** (e.g., information sessions in collaboration with SAAMO, party to celebrate the installation of the solar panels). The installation ultimately included 1,800 solar panels, resulting in an annual reduction of 130 tons of CO_2 emissions. Citizen investments totalled €700,000 in two phases, in 2022 and 2024. The project took place in a context where energy sharing was a novel concept, with considerable attention from politicians, the press, and the sector. As one of the first social energy communities in social housing in Europe, it represented

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a significant **innovation**. The project also influenced national legislation in Flanders, reflecting its impact on a broader European level.

6 Presentation of key events

Key event 1: Klimaan, City of Mechelen and Woonland join forces (June 2022)

The energy cooperative Klimaan was initially a citizen-led renewable energy initiative, keen on fulfilling its role not only as a renewable energy provider but also as a social enterprise. During the first three years, they mostly followed standard industry practices by installing solar panels on public buildings, but their true ambition was to engage in projects that have a broader societal impact. ***[clear vision/goals]***

A significant turning point occurred when they partnered with the TANDEMS project during a time of rising energy prices, which highlighted the urgency of reducing dependence on volatile energy markets. This context opened opportunities for early adopters in energy sharing, with policymakers and the DSO beginning to pilot these concepts under new EU directives. The energy cooperative applied to participate in these pilots, and after several months of discussions, they partnered with the City of Mechelen and Woonland to launch the Otterbeek PV project in October 2022. ***[experimenting, window of opportunity]***

The Otterbeek project was a significant step for the energy cooperative, involving the installation of 70 solar PV systems on social housing units. It represented the cooperative's first major experiment with energy sharing. However, the project faced several challenges, such as gaining access to homes for installation, supply shortages of inverters, and overvoltage problems on the grid. These issues revealed gaps in communication with the DSO, who had not anticipated the grid impact of a cluster of small-scale PV installations.

Additionally, legal uncertainties around the cost structure of energy sharing arose, particularly the question of whether energy sharing should be completely free of charge. The energy cooperative took the position of operating at cost price, but the broader legal question remained unresolved. This moment was a learning experience for the energy cooperative, emphasizing the importance of technical coordination, legal clarity, and community engagement in achieving their social energy goals. ***[learning-by-doing]***

Key event 2: expansion with 127 additional social houses (June 2024)

The pilot project, which involved 70 houses initially, faced significant challenges, including doubts about whether the model could be replicated due to high costs, technical difficulties, and the considerable effort required to solve these barriers. Despite these obstacles, the project was seen as groundbreaking, with a strong sense that history was being made. The large commitment from various actors and organizations involved in the project played a crucial role in overcoming these difficulties. Problems like inverter stock shortages and overvoltage issues, which could have delayed or derailed the project, were resolved with unexpected efficiency due to the high level of involvement of local grid operators and installers. ***[flexibility and resilience]***

Volunteers went door-to-door, organizing information sessions to convince social renters to participate and provide access to data. This mobilization, along with the support of organizations such as SAAMO (i.e., a Flemish organization that focuses on community

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development and social inclusion), helped build a positive dynamic, increasing the confidence of the project's partners. As a result, the social housing company, and the City of Mechelen decided to extend the project to cover an entire neighbourhood with solar panels. This led to further negotiations and the involvement of another consortium, Aster, for the expansion of the PV panels to a second neighbourhood. The expansion phase marked a turning point, with 127 additional social units receiving solar panels, and the formation of an energy community, signifying the project's growth and its positive reception among social renters. ***[importance of volunteers and/or "social" organisations such as SAAMO]***

Key event 3: decision of energy supplier to impose administrative fee on energy sharing (November 2023)

In November 2023, the energy supplier announced that it would begin charging €100 per year for energy sharing, which includes both energy injection and off-take points. The reasoning behind this fee was the inefficiency of the data exchange system for energy sharing, which relied on outdated methods like Excel sheets and manual corrections. This created a large administrative burden for the energy supplier, especially in maintaining energy balancing.

As a result of this new fee structure, the energy community that was involved in the sharing scheme had to put the project on hold. The complexity and cost implications led to the gradual phase-out of the energy-sharing model. The community is now exploring alternatives, such as virtual power purchase agreements (PPAs) and local flexibility solutions, to find more sustainable and economically viable options. This event represents a major setback in the efforts to implement energy sharing, requiring a re-evaluation of future strategies.

Key event 4: back to the drawing board (June 2024)

Initially, the project successfully installed solar panels on the rooftops of 200 social renters, and there was strong enthusiasm to grow this effort. However, the expansion to 800 social houses was hindered by a series of financial, legal, and administrative complications, which eventually slowed down the progress of the project.

One of the primary issues was the inability to raise the full amount of capital from citizens, as originally planned. This shortfall in funding would mean that the project had to take out a bank loan, which complicated the financial structure and added additional burdens. Furthermore, the project's legal framework, particularly the contracts regarding the use of rooftops on social housing for solar panels, was not fully formalized. Despite initially having rights to use the rooftops, the social housing company's ongoing revisions of what was feasible forced a renegotiation of these rights. The new requirements meant that the project had to construct an entirely new framework to allow the use of rooftops for solar energy, leading to delays and difficulties with guarantees and the use of energy produced by the panels.

Also, the lawyers that were involved in the project were divided in their approaches—some were innovative and forward-thinking, seeking new legal pathways to support the project's goals, while others adhered strictly to legal precedents. ***[innovative mindset]***

Another critical issue was taxation, specifically the value-added tax (VAT) applied to energy. The project needed to ensure that social renters did not face a higher tax burden than those purchasing energy from traditional energy suppliers. To solve this, the project devised a complex legal framework in which the social housing company, rather than the project itself, would provide the energy generated from the solar panels to the renters. This arrangement

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helped reduce the VAT for the social renters, but the process of finding and implementing this solution added further complexity to the project.

These ongoing financial, legal, and administrative challenges caused significant delays in the expansion of the project. The process of revising contracts and ensuring compliance with legal requirements became laborious, making the entire effort feel sluggish. The project team recognized that they were now at a pivotal moment where progress was slowing down due to the necessity of addressing these numerous hurdles. As a result, the project's expansion was put on hold, with the team acknowledging that the complexity of the legal and administrative frameworks made it difficult to replicate or extend the model easily.

Key event 5: broadening of social concepts and applications (now)
The revised Electricity Market Directive mandates governments to prioritize social inclusion in their energy strategies, especially for vulnerable groups. This marks a significant change in how energy sharing projects are approached. Historically, energy projects focused primarily on citizen involvement and environmental goals, such as reducing carbon emissions and addressing climate change. However, the revised Electricity Market Directive now emphasizes the need for social equity, ensuring that vulnerable populations, such as low-income or marginalized groups, also benefit from energy-sharing initiatives. Governments are now obligated to incorporate social aspects into energy projects, and there is a strong push to guarantee that these groups have access to affordable and sustainable energy. ***[window of opportunity]***

In response to this, the project team is working on expanding the energy concepts. One example mentioned is a district heating project near Mechelen, which focuses on addressing energy poverty and improving social mobility. Additionally, there is ongoing research into innovative local energy flexibility solutions to better utilize excess energy in certain areas, such as in Otterbeek. The overarching theme here is that the energy transition is evolving from a purely environmental focus to one that includes social justice. This shift is being reflected in new policies, such as the European Covenant of Mayors and the directives coming from local governments in Flanders. These policies now require a layer of social reporting to assess the impact of energy projects on vulnerable citizens. ***[innovative mindset, window of opportunity]***

7 Q&A

Question: what will be the new story to engage or to keep engaged social tenants in Otterbeek, and can you build on the previous story? What is the new value proposition?

The project team does not have a completely new proposition yet, but they are not going to say they failed, and they do not have energy sharing anymore. They are looking for a new offer that is socially adapted to get social tenants in this energy transition. However, it will not be energy sharing from solar panels for social tenants because there is no business case for that anymore.

Social tenants benefit from having solar panels installed on the roofs of their homes. This provides them with a stable and affordable energy price, which is a simple and effective solution that does not require significant involvement from the tenants. This solution is well-

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adapted to the needs of social tenants as it provides direct financial benefit with minimal effort or technical knowledge required from the tenants.

They have reached a point where energy-sharing is not feasible for small-scale social tenants because they lack infrastructure like batteries or electric vehicles (EVs) to store or use the energy effectively. As a result, energy sharing is only profitable if significant volumes of energy are shared, which works better for larger energy consumers, such as public buildings in the city of Mechelen.

The ongoing debate focuses on finding solutions that are both feasible and impactful for the social tenants, especially in areas where traditional energy-sharing is no longer viable. One idea is to use energy surpluses to support shared mobility services, such as charging electric vehicles or bicycles that can be used collectively by the neighbourhood. This would not only utilize excess energy but also provide a transportation benefit to the community. The challenge here is creating affordable and inclusive models for social tenants to participate in shared mobility without high upfront costs. They are working on new contracting models to make these solutions accessible without burdening tenants with high costs.

Another potential solution is offering energy-efficient household appliances (e.g., efficient refrigerators, washing machines) that social tenants can lease. This would reduce their energy consumption and make energy-efficient appliances more accessible to low-income households. This concept is similar to what Papillon is introducing into the market.

The project team is exploring collective heat networks. Instead of focusing on electricity, they are looking at creating collective heat networks in social housing areas. This would allow residents to benefit from collective heating systems, which can be more energy-efficient and affordable than individual systems.

They are waiting for government actions and higher-level solutions, especially regarding how energy suppliers are impacting the ability to scale local energy-sharing initiatives. Until these larger regulatory and market issues are resolved, they are focused on developing new innovative offers that can help engage social tenants in the energy transition in a way that is both practical and affordable.

[“new” model as a financial construct and basis that allows add-ons to make it more socially inclusive.]

Question: is a solution being developed to address this administrative fee issue?

The issue of the administrative fee for energy sharing is a problem that all energy-sharing initiatives, social or non-social, have in Belgium. The high tariff makes energy sharing not viable for small citizens, especially the social target group. Energy sharing has become only feasible for large production and consumption units, such as industrial sites. However, the hope lies in future government intervention to adjust this situation, as the revised Electricity Market Directive mandates a percentage of energy sharing for vulnerable households.

Question: how do you try to understand what solutions that make sense for more vulnerable citizens?

They conducted co-creation sessions with the vulnerable target group, which were challenging but yielded valuable results. One example was a collaboration with SAAMO, where they

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gathered feedback from social tenants after the PV panels were installed, asking about potential future solutions. They also used interactive tools like the “social energy Jenga game” to collect insights in a playful manner. Additionally, they organized informal dialogue sessions in Otterbeek, where they hosted open question moments. These events were held over three afternoons, featuring children's games, cake, and drinks to encourage residents that passed by to engage in a one-on-one conversation. During these events, they asked residents for their opinions on solar panels and what other improvements could be made in the area. They also tested ideas with the community, such as a proposal from SAAMO Papillon to lease energy-efficient household appliances. The feedback was overwhelmingly positive, indicating that this was something useful and meaningful to the neighbourhood. Finally, they are part of a social working group under the umbrella of REScoop Flanders (i.e., Federation of renewable energy cooperatives), where new ideas and projects are frequently presented. This allows them to assess whether new ideas are mature enough and reflect on their applicability to vulnerable citizens. Through these ongoing dialogues and collaborations, solutions can start to grow and take shape. ***[co-creation, open dialogue]***

Question: is the administrative fee that energy suppliers charge for energy sharing due to a straightforward technical issue, or is it a legal or policy issue? Is there anything being developed to simplify the administrative aspects of the process?

While there are efforts being made to address the administrative challenges associated with energy sharing, resolving these issues is a lengthy process. Energy suppliers justify their high fees for energy sharing by citing significant administrative burdens. Some of the arguments presented by the energy suppliers are valid, but energy suppliers also use certain arguments in an opportunistic manner to strengthen their case.

In Belgium, all energy data from digital meters, which are mandatory for users of PV panels and members of energy communities, is fed into a centralized system. This system tracks the amount of energy consumed and produced, and Belgium's complex tax system, with 27 different taxes, calculates the appropriate tax for each energy transaction. This process is handled by a company called ATRIAS, which provides the processed information to energy suppliers.

However, the energy sharing systems are not yet integrated into this central system. As a result, energy suppliers must manually correct the data related to energy sharing customers. This correction process involves using an Excel sheet provided by the DSO to adjust their automated invoicing systems. This manual correction is a time-consuming and costly task, contributing to the higher fees charged by suppliers.

To address this issue, a work group has been formed with energy suppliers, DSOs, and other stakeholders to integrate energy sharing into the central system. This integration was mandated by the government, but the timeline for completing this process is still uncertain. Until the system is fully integrated, energy suppliers are required to continue with their manual invoicing processes, which they argue justifies the high administrative fees they impose.

Another argument made by energy suppliers for charging a fee is regarding forecasting. They claim that energy sharing disrupts their forecasting models, but any innovation in the energy market, such as the installation of solar panels or the implementation of flexibility services, requires adjustments in forecasting. Changes in forecasting should not be used as a

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justification for imposing high tariffs on energy sharing customers. ***[existing energy market not fit for new concepts like energy sharing]***

Question: what are the political dynamics surrounding energy sharing? who is advocating for energy sharing and working to resolve related issues, especially considering that energy suppliers seem to be against it? Are organizations like REScoop (federation of renewable energy cooperatives) involved and what the broader political landscape looks like in terms of support for energy sharing?

Politicians generally recognize the benefits of energy sharing. There are various stakeholders involved in this discussion, with REScoop playing a role as a mediator between energy suppliers and energy communities that support the concept. The push for energy sharing initially came from politicians who promoted the idea and included it in policy frameworks. Renewable energy cooperatives were also involved in advocating for energy sharing, but also certain companies, particularly those organized around the Flex 50 group, have promoted energy sharing models. Furthermore, local authorities have also shown interest, particularly in exploring how energy sharing could benefit social projects and their own assets.

Question: would it be better to simplify the Otterbeek model or add more components to make it replicable in other locations, such as the Netherlands?

True replication implies that something should be copied exactly, but in practice, what often happens is that others are inspired by the original model and adapt it to their own context. While the initial Otterbeek model was not entirely successful, it did inspire other actors to create new models for delivering energy to vulnerable groups. For a model to be replicable, it needs to be simple. A complex, organically developed model with many components and intricacies is not suited for replication. Instead, a basic, straightforward model is more likely to be effectively replicated. Each component or service should be treated as a distinct, replicable model rather than attempting to replicate a complex, combined model. This approach helps avoid the pitfalls of overly complicated systems and ensures that each part can be adapted or implemented in different contexts.

Question: Should other organizations focus on developing and replicating a simple, effective model for energy sharing or should the current organization take on the role of driving the replication of a successful model? Should the focus be on creating a universally replicable model or should the organization continue exploring and solving different problems in the energy transition space?

Given the current situation in Otterbeek, it may not be advisable for other organizations to replicate the model just yet. While there are valuable lessons to be learned, the recent complications have made it clear that the current solutions might not be the most effective or ready for replication. The Otterbeek pilot can still contribute by sharing lessons learned rather than pushing for a direct replication of the complex model. While they are exploring new solutions, they can offer practical advice and insights based on their experiences. They are focusing on providing guidance on how to set up and manage energy sharing communities effectively, such as starting with a small group to ensure smooth operation before scaling up. ***[replication by design, or focus on transferring lessons to deal with local specificities]***

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Question: how would they address the challenge of replicating their model for energy sharing in the face of competition from projects like Aster, which seem to have simpler administrative processes for using the roofs of social housing companies? What are possible strategies for countering this competitive advantage and convincing social housing companies to engage in their project?

Aster has a well-prepared model due to European project funding. They spent considerable time—two to three years—developing theoretical reports, contracts, and other documentation before starting with the installation of PV on social houses. This upfront work allowed Aster to have a polished and balanced model by the time they began operations.

In contrast, the Otterbeek pilot adopted a more iterative approach. They started by installing solar panels and tackled administrative and legal issues as they arose during the project's implementation. This learning-by-doing approach meant that they encountered and addressed challenges dynamically, leading to a longer development period, but with a model built through practical experience rather than theoretical planning.

Regarding the administrative challenges, the Aster model includes provisions that allows social housing companies to receive shares, which enhances the equity of Aster. This method of creating fictive equity through rooftop rights helps Aster meet financing requirements and is appealing to legal advisors and financial institutions.

In case of the Otterbeek pilot, they did not need such fictive equity creation. Instead, they focused on negotiating similar rights to use the rooftops but on a more symbolic basis, such as €1, to comply with legal restrictions. They strived to align their contracts and legal frameworks as closely as possible with the Aster model to maintain consistency and credibility.

There were initial differences between the Otterbeek model and Aster model, particularly regarding the pricing and the benefits offered to the social tenants. Initially, the Otterbeek model might have seemed less competitive compared to Aster, which was perceived as providing a more attractive deal for social tenants. However, the price differences between the Otterbeek model and Aster model have since become less pronounced, and now the models are more comparable.

One of the major differences between the Otterbeek approach and Aster model was in the financing structure. Aster encountered challenges with their financial setup, which impacted their ability to effectively implement their model. In contrast, in Otterbeek they took a different approach by focusing on reducing the workload and risks for social housing companies. This meant that the Otterbeek model was designed to be less burdensome for social housing companies compared to the Aster model, which imposed more responsibilities on the social housing companies.

Social housing companies have the flexibility to choose different partners and models based on their needs. For instance, the social housing company in the city of Mechelen chose to work with multiple actors, including both Aster and Klimaan, to accelerate the installation of solar panels on their properties. The benefits for social renters and the positive impact on climate change can persuade social housing companies to adopt a model, In the case of Otterbeek, the project team encouraged a proactive approach, suggesting that social housing companies should not be deterred by administrative or competitive concerns. Instead, they should focus

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on the advantages of implementing energy solutions which offer tangible benefits for social tenants and contribute to broader environmental goals.

Question: is the paradigm shift in energy, moving from getting citizens on board with solar power to making these initiatives more social, important? Does the underlying motivation behind the initiative matters or is the shift relevant in making the project more feasible and logical?

The paradigm shift is indeed significant, especially in the current energy market and political landscape. There is a strong push from European directives and local municipalities towards energy transition and climate action. This shift is very present and influential at higher levels of policymaking and among local governments. However, social housing companies, by their nature, are already considered to be socially oriented. They do not face a stringent obligation to engage in the energy transition beyond their existing social responsibilities. The decision for these companies to participate in climate initiatives is more about their willingness and the leadership's vision rather than a regulatory requirement.

At present, there is no hard obligation for social housing companies to engage in energy transition projects. It is more about their voluntary commitment and the opportunity to align with broader societal goals related to climate change. The involvement of these companies in such initiatives is driven by a desire to contribute to climate action and societal improvement rather than by strict mandates. ***[system thinking] [paradigm shift from "get citizens engaged in solar" to "how to make it social"]***

Question: when/how to include the municipality and what is the role they should/could play?

Based on the example of Otterbeek, municipalities should be engaged early in the planning stages. A local authority's early involvement is essential for shaping the project and ensuring its alignment with broader community and policy goals. The municipality can facilitate the formation of key partnerships, bringing together e.g., social housing companies, renewable energy cooperatives, and other stakeholders. Their support can help secure necessary resources, such as financing and technical expertise, and provide a platform for stakeholder collaboration. Community engagement is another critical area where local authorities can contribute by e.g., facilitating the organization of information sessions. Furthermore, the municipality can play a strategic role in responding to unforeseen challenges, such as changes in policy or regulation. Their involvement can help in exploring alternative solutions and adapting the project to new circumstances, ensuring its resilience and long-term success. Finally, local authorities have a unique position to bridge the gap between local initiatives and higher governmental levels. By sharing lessons learned from pilot projects, municipalities can influence policies and regulations at regional and national levels. Their experiences can provide valuable insights into the practical challenges and successes of energy community projects, helping to shape more effective and supportive policy frameworks. This feedback loop can drive the development of regulations that better accommodate and promote local energy initiatives.

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8 Eye openers and Actions

Erik Laes **(VITO)** pointed out that replication, in a strict sense, might involve copying a model exactly as it was originally implemented. However, if replication is viewed narrowly—focusing only on the exact model and its administrative complexities—it may be deemed a failure if those complexities cannot be easily replicated. Instead of focusing solely on duplicating the exact model, you can also consider replication as the act of spreading the core idea or concept. For instance, the model might inspire other projects to incorporate similar principles, such as including marginalized groups or addressing community needs. This inspirational effect is a form of replication, even if the exact administrative or operational model is not duplicated. While it is challenging for scientists to quantify these impacts, recognizing them is important. The essence of replication could involve looking at how well the underlying principles of a project are adopted and adapted in different settings. Rather than focusing solely on the exact duplication of a model, it is valuable to consider how the core ideas can be transferred and adapted to new settings. This might involve overcoming systemic problems and changing elements within the existing framework to facilitate the replication of ideas. Changing systemic elements, such as administrative processes or financial systems, might help other projects. By addressing and modifying these elements, pioneering projects can pave the way for smoother replication of their principles in different contexts. ***[replication by design, or focus on transferring lessons to deal with local specificities] [Indirect effects (putting inclusion on the energy transition agenda) might be equally important as the direct effects (impact on energy bill of social renters)]***

In a workshop with Mechelen Justin Pagden **(Agem)** explored how energy sharing and feed-in mechanisms can be organized differently. He learned that energy contracts can be split into two distinct components: one for energy use and another for energy feed-in. This separation allows for different contractual arrangements for each component. It opens possibilities for creating a virtual power plant or virtual solar plant. This concept involves aggregating multiple small installations and managing them as a single entity. By leveraging the flexibility of separate contracts for energy use and feed-in, such a virtual plant could effectively engage in power purchase agreements (PPAs) with larger entities like municipalities. This approach is relatively new and not widely utilized yet, especially in the Netherlands. **(Action: share the Otterbeek insights with LochemEnergie - WP2 & 6)**

Justen Pagden's **(Agem)** second eye opener came from a discussion with the neighbouring municipality, Lochem that faced a problem due to upcoming changes in net metering laws in the Netherlands (by 2027), which would render their current business model for investing in solar panels on social housing obsolete. The changing regulations threatened to derail their collaboration with a housing company. Agem introduced the Otterbeek business model as a potential solution. This model involves separating the solar energy produced into two parts: one for direct use by tenants and the other for feed-in. By finding a customer, such as a municipality, for the feed-in energy, Lochem could adapt to the new regulatory environment. This approach provided a practical solution to their problem and was seen as an effective way to navigate the changes in legislation. The success of the Otterbeek pilot inspired Agem to consider how these insights could be applied more broadly and use the underlying concepts to develop new business models that could withstand regulatory changes and keep solar panel projects viable in the face of evolving laws. **(Action: link the Lochem pilot to the L4L**

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initiative and see if maybe there can be formulated some recommendations for a supporting framework - WP5)

Initially, Maro Saridaki **(Kamp C)** was focused on energy sharing as a core solution for engaging neighbourhoods in the energy transition. The original plan for the Kamp C pilot focused on using energy sharing mechanisms to directly involve the community and more specifically vulnerable groups in addressing climate change. However, energy sharing is not the ultimate goal but one of many methods to involve citizens in climate action. Instead of starting with a technical solution like energy sharing, the approach should begin with simple community engagement by creating spaces for connection, such as a neighbourhood café **(Action: Use the neighbourhood café (16/9/24) as a first step to inclusion - WP3)**, building relationships and understanding what is happening within the community. By fostering these connections, the project can naturally evolve, allowing solutions like energy sharing to emerge organically as the community becomes more involved in the energy transition. This new approach emphasizes the importance of understanding the community's needs and motivations before jumping into specific solutions. ***[energy sharing is not the goal, but one of the ways]***

Liesbet Veulemans' **(ZuidtrAnt)** eye opener revolves around the realization that the project's success should not be solely judged by whether energy sharing has been implemented. At first glance, it might seem that the project had failed because energy sharing, the initial objective, was not achieved. The key takeaway was the understanding that progress was still being made in the Otterbeek project by actively engaging with the vulnerable target group to explore other feasible options. This ongoing connection creates opportunities to work within existing limitations and explore other avenues of participation and engagement. Even if energy sharing is not immediately achievable, there are still ways to involve the community in meaningful ways. By doing so, when policy or technical solutions eventually allow for energy sharing or similar initiatives, the groundwork will already be laid with an engaged and motivated community. In the case of ZuidtrAnt, a subsidized project targeting vulnerable groups is under consideration. It became clear that the engagement with these groups needs to be prioritized, even if they might not directly benefit from energy sharing in the short term. The focus should be on maintaining involvement and participation around different topics, ensuring that when technical or policy conditions do change, the community is ready and willing to participate in those benefits. **(Action: continue engagement vulnerable group on "other" solutions if the energy sharing does not seem possible – WP3)**

The eye-opener for Marten Boekelo **(Duneworks)** relates to how policymakers and politicians in Belgium are leading the push for socially inclusive energy policies, including energy sharing. This approach contrasts with the situation in the Netherlands, where such initiatives appear less driven by the governments. A more specific revelation came from observing the role of social housing companies. Social housing companies are generally not at the forefront of developing innovative ways to integrate energy initiatives with social policies or create tangible benefits for their residents. This reluctance to take bold steps in the energy sector is something Marten also recognized from his experience in the Netherlands, where social housing companies tend to be conservative and hesitant to explore new ventures. However, what stood out to Marten was that despite this hesitancy, social housing companies are more likely to engage with energy-related projects when a municipality or trusted partner takes the lead.

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(Action: translating learnings from Otterbeek's obstacles to EU-Belgium (transposition) interface seems crucial, since it appears as the driving force behind energy sharing are BE policymakers – WP5)

Sylvia Breukers **(Duneworks)** pointed out that intrinsic motivation, flexibility and resilience of the organisations, and more importantly even, the persons working on socially innovative solutions in the energy transition are crucial to achieve a good outcome. Also, the "new" Otterbeek model can be considered as a financial construct and basis that allows add-ons to make it more socially inclusive.

Joeri Naus **(VITO)** reflected on how to handle projects that face barriers or do not take off as expected. Joeri found this particularly relevant when managing expectations at the project level. He highlighted the importance of balancing the high energy and optimism, that projects like in Otterbeek generate, with the realities of potential challenges or setbacks. Joeri wondered how to manage expectations effectively, especially when there is a lot of enthusiasm surrounding a project. He asked how to frame success in a way that goes beyond simply installing PV panels and instead focuses on the broader lessons learned. He emphasized the importance of openness to learning from both successes and setbacks, encouraging the idea that projects should be seen as opportunities for growth and adaptation, even if the initial expectations are not fully met.

Bart De Bruyne's **(City of Mechelen)** first reflection focused on the balance between setting ambitious goals and managing realistic outcomes in project management. Having an ambitious idea is a positive force, especially when many people share the same dream. This collective ambition can generate energy and enthusiasm, driving progress. However, this raises the question: should you set your ambitions very high, risking an outcome where some targets are unmet, or should you take a more conservative approach, ensuring that your goals are achievable and possibly over-delivering? Both approaches can lead to similar results but with different perspectives in the final evaluation. In one case, you might meet only two-thirds of an ambitious target, while in the other, you may exceed more modest goals. Having a shared dream often unites people and creates momentum. He observed this dynamic in the Otterbeek project, where the dream of social inclusion and innovative energy solutions inspired various stakeholders to contribute. The power of a shared vision not only pushes people to achieve more but also fosters a sense of collective effort and enthusiasm. The dream unites and drives real progress, even if not every technical aspect of a project is fully realized. The creation of networks, positive energy, and broad support around the project can be as valuable as meeting specific KPIs. ***[reflexive monitoring]***

Bart De Bruyne's **(City of Mechelen)** second eye opener focused on the value of experimentation and adaptive learning in the context of transition projects. Unlike a fully planned approach, real-world transitions benefit from experimentation and pilot testing. You cannot entirely design and predict outcomes from a theoretical standpoint before moving to implementation. The dynamic and unpredictable nature of real-world contexts requires flexibility and learning-by-doing. Projects operate in ever-changing environments where success depends on adapting to ongoing developments. The process should allow for organic growth, meaning that projects should evolve through trial-and-error, adapting to new information and conditions as they arise. In projects like Otterbeek, the key experience was the ability to rapidly test and adapt solutions. This approach involves starting with a pilot phase

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where teams build and adjust as they learn, rather than relying on a complete and rigid plan from the start. It is important to have safeguards and some level of security to manage risks associated with experimental approaches. This means having mechanisms in place to control and mitigate potential negative outcomes, ensuring that failures are manageable and do not derail the project. ***[learning-by-doing as a transferable skill - build capacity to deal with situational requirements or events]***

Steven Laurijssen **(Klimaan)** emphasized the necessity of having all records and agreements well-organized when dealing with financing. Ensuring that these documents are readily available and properly arranged is crucial for smooth project management and demonstrates a higher level of professionalism. Steven noted that the Otterbeek project faced a larger-than-expected administrative overhead due to complications that arose. This unexpected burden highlighted the need for improved administrative processes. To address the administrative challenges, Steven suggested investing in process automation. Implementing automated systems would help reduce the manual workload and improve efficiency in handling project-related tasks. Reflecting on the Otterbeek project, Steven acknowledged that while having everything planned from the start would have been beneficial, such thorough preparation was not always feasible. He recognized that pioneering often involves dealing with unforeseen issues and adapting to new challenges as they arise. Steven concluded that the experience urged the team to reflect on and improve their internal processes. By learning from the Otterbeek project's challenges and continuously refining their practices, they aim to avoid similar problems in the future and enhance their overall professional approach. This ongoing process of learning and adapting is integral to their development. ***[learning-by-doing]*** **(Action: getting agreements in order first & work on more automation to reduce administrative overhead – WP3)**

Katharina Biely **(VITO)** highlighted that the Otterbeek pilot is challenging the prevailing energy regime and the mental model behind it. Traditionally, individual energy consumers focus on reducing their costs by becoming prosumers or by seeking the most favorable energy contracts on the market. However, this model is being disrupted by the Otterbeek approach, which emphasizes local energy production and sharing to meet the needs of the community, with the market playing a supplementary role. This clash between mental models is evident in several areas of friction.

Table 14: List of actions

Action	Driver	Related Work Package
Share the Otterbeek insights with LochemEnergie.	Justin Pagden (Agem)	WP 2/6
Link the Lochem pilot to the L4L initiative and see if maybe there can be formulated some recommendations for a supporting framework. ***→ inform Duneworks in frame of WP5***	Justin Pagden (Agem)	WP 5

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Use the neighbourhood café (16/9/24) as a first step to inclusion.	Maro Saridaki (Kamp C)	WP 3
Ask help on formulating the "charter" for the REC Kamp C to include just and democratic values. → ***example of charter that can be shared by the partners?***	Maro Saridaki (Kamp C)	WP 3
Interested in hearing how the "Otterbeek model" can be of relevance in NL as well → ***cf. action Justin on LochemEnergie & L4L***	Sylvia Breukers (Duneworks)	WP 5
Continue engagement vulnerable group on "other" solutions if the energy sharing does not seem possible.	Liesbet Veulemans (ZuidtrAnt)	WP 3
Include communication on what we are doing and why earlier than was foreseen?	Maro Saridaki (Kamp C)	WP 6
Draw attention to the need of models that work in such a manner that it facilitates (rather than inhibits) a more equitable distribution of the benefits.	Sylvia Breukers (Duneworks)	WP 5
Translating learnings from Otterbeek's obstacles to EU-Belgium (transposition) interface seems crucial, since it appears as the driving force behind energy sharing are BE policymakers.	Marten Boekelo (Duneworks)	WP 5
Compare the lessons learned around energy sharing in NL and BE as well as the conclusions (with partners, as part of the policy dialogue outcomes).	Sylvia Breukers (Duneworks)	WP 5
Getting agreements in order first	Steven Laurijssen (Duneworks)	WP 3
Work on automation to reduce administrative overhead.	Steven Laurijssen (Duneworks)	WP 3

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Organise screw-up sessions.	Steven Laurijssen (Klimaan)	WP3

9 Lessons learned for TANDEMS

Pros and cons of the Otterbeek pilot project.

The Otterbeek pilot project aims at integrating renewable energy into social housing, with a focus on sustainability, social equity, and community engagement. Below are some key pros and cons of the project.

Community empowerment and social equity: by installing solar panels on social housing rooftops, the project provides social tenants with affordable and stable energy prices over 20 years. The initiative promotes the concept of energy sharing, which helps build a sense of community among social tenants and ensures that they benefit from the renewable energy produced. The project addresses energy poverty and aims to make renewable energy accessible to vulnerable groups, aligning with new policies that emphasize social inclusion.

Environmental impact: the installation of 1,800 solar panels led to a reduction in CO_2 emissions, with an annual decrease of 130 tons. This contributes positively to the fight against climate change.

Citizen engagement and investment: the project successfully raised €700,000 through citizen investment campaigns, demonstrating strong community support and involvement in the transition to renewable energy.

Legislative and policy impact: the project has influenced national legislation in Flanders on energy sharing.

Innovation: as one of the first social energy communities in social housing in Europe, the Otterbeek project serves as a pioneering example of integrating social housing with renewable energy and energy sharing concepts.

Technical and administrative challenges: the project faced significant technical challenges, including difficulties accessing homes for installation, supply shortages of inverters, and overvoltage problems on the grid. The administrative burden related to energy sharing, including outdated data exchange methods, led to inefficiencies and additional costs.

Legal uncertainties and complications: the project encountered legal uncertainties regarding the cost structure of energy sharing and the use of rooftops, which complicated the project's implementation and required extensive legal adjustments. VAT complications required complex legal arrangements to ensure social tenants did not face a higher tax burden, adding further complexity to the project. By having the social housing company provide the energy, it reduces the VAT impact on the social renters.

Financial strains: the imposition of a €100 annual fee by the energy supplier for energy-sharing posed a significant challenge, leading to a halt in the project and necessitating a search for more viable solutions.

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Community dynamics: extensive efforts were required to convince social tenants to participate and engage with the project, which involved significant community outreach and trust-building activities.

Replicability of the Otterbeek pilot project in the Netherlands (and other countries).

The Otterbeek business model offers valuable lessons for the Netherlands as it prepares for the abolition of net metering laws, but a direct replication might not be the most effective approach. The Otterbeek project faced significant challenges, including technical issues, legal uncertainties, and administrative hurdles. Replicating this complex, organically developed model might be inefficient, particularly given the differences in national legislation, energy markets, and social housing structures between Belgium and the Netherlands. A simplified, modular approach should be pursued, where each component—such as the separation of energy use and feed-in—can be adapted to local contexts. Replicating only core aspects that address the specific needs of Dutch social housing and legal frameworks would be more efficient than trying to copy the entire Otterbeek model.

The Otterbeek model separates the energy generated by PV panels into two components: energy used by tenants and energy fed back into the grid. This distinction allows for different contractual arrangements and enables flexible solutions like virtual power plants. This concept can be particularly useful in the Netherlands, where changes in net metering laws by 2027 will require new models for PV projects on social housing. The Dutch municipalities can explore this model to overcome the loss of financial benefits from net metering. By selling the excess energy (feed-in) to municipalities or larger entities through Power Purchase Agreements (PPAs), they can maintain the viability of PV projects despite the regulatory shift.

Otterbeek's virtual power plant concept, where multiple small PV installations are managed as a single entity, provides a scalable and efficient way to manage energy production and distribution. Housing companies and energy cooperatives in the Netherlands can pool together smaller PV installations into virtual plants. This not only increases bargaining power in the energy market but also helps in creating long-term sustainability for social housing PV projects.

Otterbeek’s focus on involving vulnerable social renters in energy projects ensures that they benefit from affordable and stable energy prices while participating in the energy transition. By ensuring that new business models include affordable energy solutions for social tenants, Dutch social housing companies can make PV projects more attractive and equitable, especially as they navigate regulatory changes.

The Otterbeek model struggled with administrative fees and financial challenges related to balancing energy production and sharing. The complexity of managing energy-sharing agreements and balancing portfolios was a significant setback. Streamlined administrative structures with clear financial models, such as PPAs or community-owned PV plants, could minimize overhead and simplify management. Exploring partnerships with municipalities for feed-in energy contracts could also mitigate financial risks.

As the Otterbeek experience shows, starting with small groups of social tenants ensures smoother operation before scaling up. This approach allows for testing and refining the model in a controlled environment. Dutch initiatives should start with pilot projects in small

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communities, with a clear focus on legal, technical, and financial feasibility before expanding to larger social housing estates.

The Otterbeek project highlighted the importance of strong collaboration between local governments, DSOs, social housing companies, and energy cooperatives. These partnerships were key to overcoming challenges. Collaboration as well as advocacy for supportive legislation, will be important in developing sustainable energy models for social tenants under the new net metering laws.

Engaging vulnerable groups in energy (sharing) projects.

Involving citizens, especially vulnerable groups such as social tenants, in energy-sharing projects requires more than just highlighting financial benefits. Although energy savings and stable prices are appealing, social renters may not be motivated purely by financial returns. While cost savings are important, social engagement strategies need to address broader motivations, needs, and trust-building efforts. While financial benefits are essential, citizen involvement, particularly for vulnerable social renters, relies on trust, practical engagement, and solutions that resonate with their everyday needs.

Engaging vulnerable groups requires establishing trust, especially when introducing novel concepts like energy sharing. This can be achieved by information campaigns and co-creation. Organizing co-creation sessions with social tenants to understand their concerns and preferences helps to tailor solutions to their needs. Hosting informal gatherings with food and children's activities can make these interactions more accessible and comfortable for participants. These events encourage spontaneous engagement, where residents can ask questions and provide feedback.

Citizen engagement is an ongoing process, not a one-time engagement. Co-creation sessions with vulnerable groups, interactive events, and collaboration with social organizations can provide insights into what solutions are both needed and accepted by the community.

Collaborating with social housing companies in energy (sharing) projects.

Social housing companies often lag in developing innovative approaches to merge energy initiatives with social policies or in delivering substantial benefits to their residents. This tendency towards conservatism and reluctance to venture into new areas is a common theme experienced in Belgium and the Netherlands. Nonetheless, social housing companies are more inclined to participate in energy projects when a respected entity, such as a municipality or a credible partner, takes the lead.

Collaborating with municipalities in energy(-sharing) projects.

Municipalities should be involved early in the planning stages of community energy projects, ensuring alignment with broader community goals and policy frameworks. Municipalities can play a role in forming partnerships by connecting key stakeholders. The involvement of municipalities can help secure essential resources, like funding and technical expertise, while fostering collaboration among stakeholders. Municipalities are also instrumental in driving community engagement. Additionally, municipalities play a strategic role in addressing unforeseen challenges, such as shifts in policy or regulation, by helping to find alternative solutions and ensuring that the project adapts and remains resilient over time. Furthermore,

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municipalities act as a link between local initiatives and higher levels of government. By sharing experiences and lessons from pilot projects, municipalities can influence more effective policies and regulations that support and promote community energy initiatives.

Intrinsic motivation, flexibility, and resilience are pivotal to the success of socially innovative solutions in the energy transition.

The Otterbeek project's history reveals how qualities such as Intrinsic motivation, flexibility, and resilience are crucial for overcoming challenges and achieving positive outcomes.

The journey began with Klimaan, a renewable energy cooperative that, driven by a clear vision of integrating renewable energy with social impact, aimed to move beyond conventional practices. Their motivation to address social and economic vulnerabilities through renewable energy was evident in their ambitious goals. This intrinsic motivation was crucial as they faced rising energy prices, which highlighted the urgency of reducing dependence on volatile energy markets. Klimaan's flexibility enabled them to seize this moment, experimenting with energy sharing despite the complexities involved.

The project encountered significant obstacles, including technical, administrative and legal issues. Despite these challenges, the project partners' resilience played a key role. Their determination to address these issues, even amidst legal uncertainties and technical difficulties, allowed them to proceed with the Otterbeek project.

As the project expanded to include additional social housing units, the commitment from various stakeholders was driven by intrinsic motivation. This collective effort helped overcome challenges such as inverter shortages and technical problems. The flexibility of the team in adapting their approach, including leveraging community support and volunteer efforts, was crucial. Their resilience in managing these difficulties facilitated the project's growth and led to its expansion into a broader neighbourhood initiative.

The introduction of an administrative fee by the energy supplier presented a significant setback and required the project team to reevaluate their strategy. Their intrinsic motivation to find viable alternatives, such as virtual power purchase agreements and local flexibility solutions, demonstrated their commitment to navigating these new challenges. Their flexibility in adapting financial structures and legal arrangements, combined with their resilience in managing delays and complications, highlighted the importance of these qualities in sustaining the project.

Inspirational replication.

Replication should not be viewed as simply duplicating a model exactly as it was implemented. Focusing narrowly on replicating a model with all its administrative details can lead to failure if those complexities cannot be easily transferred. Instead, replication should be seen as spreading the core idea or concept, where the model can inspire other projects to adopt similar principles, such as including marginalized groups or addressing community needs. This “inspirational replication” is just as valuable, even if the exact operational model is not copied. While it is difficult to quantify these indirect impacts, they are essential. The focus should be on how well the core ideas or underlying principles are adapted to new contexts rather than on exact duplication. Replication might involve overcoming systemic issues, like administrative or financial hurdles, and changing key elements within the framework to make the transfer of ideas smoother. In this sense, indirect effects, such as raising awareness about inclusion in

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the energy transition, can be just as important as the direct impact on energy savings for social tenants.

Balancing high aspirations with achievable outcomes.

The success of a pilot project should be framed in terms of both achievements and the broader learning experience gained during the project. Balancing ambition with realistic goals and leveraging collective enthusiasm can lead to meaningful progress and impactful results. The importance of a shared vision and collective effort cannot be overstated. Ambitious goals can inspire and unite stakeholders, generating momentum and enthusiasm that drive the project forward. However, it is essential to manage expectations effectively, especially in projects characterized by high energy and enthusiasm. While optimism can drive progress, it is also important to prepare for potential challenges and setbacks. Success should not be measured solely by whether initial goals, such as installing PV panels, are met, but should also encompass the broader impact and insights gained throughout the project. Viewing both successes and setbacks as opportunities for learning and growth can provide valuable lessons and contribute to long-term progress.

Embracing experimentation and adaptive learning, along with maintaining robust administrative practices.

In the context of transition projects, a rigid, predetermined plan often falls short due to the dynamic and unpredictable nature of real-world environments. Successful projects benefit from an approach that values experimentation and iterative learning. This means starting with pilot projects in which solutions are tested and refined based on actual performance and emerging conditions, rather than relying solely on theoretical designs. Flexibility to adapt and adjust as new information arises is essential. Projects should be structured to allow for organic growth, where learning-by-doing is integrated into the process, enabling project teams to respond effectively to unforeseen challenges and evolving circumstances. Additionally, well-organized administrative practices are crucial for managing projects effectively. Investing in process automation can streamline tasks and reduce manual workload, enhancing overall efficiency. While comprehensive planning from the outset is beneficial, the ability to adapt and refine internal processes in response to challenges is equally important. Continuous improvement and learning from past experiences contribute to better handling of future projects, ensuring smoother management and increased professionalism.

Energy sharing is challenging the traditional energy system.

Energy sharing models are challenging the traditional energy system and the mindset that supports it. Traditionally, individual energy consumers have focused on lowering their energy costs by either becoming prosumers, generating their own energy where possible, or finding the best available contracts from energy suppliers. However, the energy sharing model introduces a different approach, emphasizing local energy production and sharing to meet the community's needs, with the broader market playing a supplementary role. This clash of models led to several tangible frictions. One issue arises from the current electricity grid infrastructure, which was built to accommodate centralized electricity generation. Integrating local energy communities into this system can cause technical challenges. To address this, DSOs must consider the specific demands of local energy communities when planning long-term grid upgrades. At the same time, traditional energy suppliers may see local energy

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communities as a threat. To protect their position, they may impose fees for energy sharing, which could limit the further development of community-based energy systems. Creating commercial incentives for energy suppliers to adapt their business models to support local energy communities could also encourage more cooperation and help accelerate the energy transition.

Paradigm shift from "engaging citizens in solar" to "how to make it socially inclusive".

The Otterbeek project highlights a paradigm shift from the traditional focus on simply engaging citizens in PV projects to a broader, more nuanced approach that emphasizes social inclusion. This shift reflects a deeper understanding of how energy projects intersect with social issues and the need to integrate both environmental and social goals effectively. The new Electricity Market Directive reflects a broader policy shift towards social inclusion in energy projects.

Traditionally, renewable energy projects have focused on technical implementation and broad participation. This approach assumes that increasing access to renewable energy and promoting participation will inherently lead to positive environmental outcomes and community benefits. The paradigm shift involves moving beyond this narrow focus on technical engagement to consider how to make energy projects socially inclusive. This shift reflects a broader recognition of the complex interplay between energy initiatives and social equity.

In the Otterbeek case, it became apparent that simply installing PV panels and sharing energy was insufficient. The project had to address the specific needs of social tenants, who face different challenges compared to other citizens. This included understanding the socio-economic context of the residents and ensuring that the benefits of the energy project were equitably distributed.

The shift to making energy projects socially inclusive involves integrating social equity into the core of the project design. For the Otterbeek project, this meant addressing barriers faced by marginalized groups, ensuring that the benefits reached those most in need, and adapting the project to better serve the social tenants. It required a rethinking of how energy solutions could be designed to enhance social inclusion and support vulnerable populations.

The paradigm shift also underscores the importance of building trust and engaging with the community in a meaningful way. In the Otterbeek project, mobilizing volunteers and engaging with local, social organizations were crucial for building a positive dynamic and gaining the trust of social renters. This community-focused approach highlighted the need for energy projects to be not just technically sound but also socially responsive.

The stewardship model for advancing a just energy transition.

The stewardship model offers a framework for advancing a just transition in various sectors by emphasizing long-term societal goals over short-term financial gains. This model shifts away from traditional ownership structures, which often prioritize financial benefits rather than sustainable development, and instead entrusts stewards with the responsibility of ensuring that projects and resources align with broader community values and objectives. By focusing on reinvesting profits and aligning activities with long-term societal goals, the stewardship model supports both sustainability and equity.

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In practice, the stewardship model involves organizing stewards into a foundation or trust whose primary role is to oversee governance and decision-making. This governance structure ensures that all partners—such as local authorities, energy communities, and businesses—collaborate effectively toward shared values and goals. For example, in the context of local energy projects, a coalition might use shared resources like rooftops or land for renewable energy initiatives. The coalition would develop a charter outlining core values, such as commitment to renewable energy and citizen participation. Stewards would then ensure that all activities and investments, such as the construction of a solar plant, are conducted in a way that aligns with these values. Profits generated from these projects could be reinvested into further initiatives that support the coalition's long-term objectives, rather than being distributed solely as financial returns.

While the stewardship model promotes collective decision-making and shared governance, it also requires partners to cede some degree of autonomy. This challenge can be mitigated by ensuring that all parties have a clear, shared vision and are committed to the coalition's values.

10 Annex: Presentation on stewardship (Erik Laes, VITO)

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Stewardship-ownership model

Mission & purpose

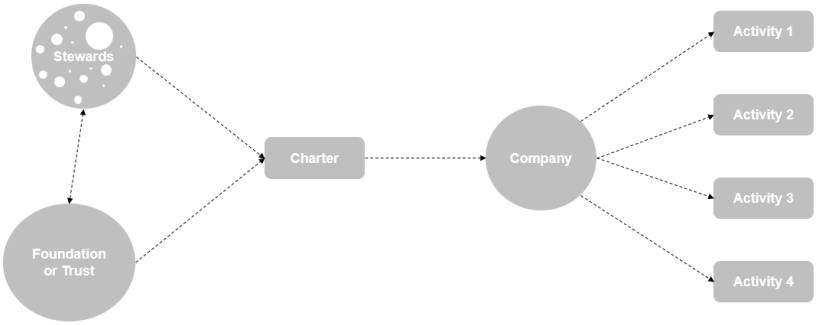
- a business structure where a company's ownership and governance are designed to **align with its mission rather than maximizing shareholder profit**.
- the control of the company is held by **"stewards"**—usually founders, employees, or aligned investors—who are committed to the company's purpose.
- profits are typically **reinvested into the company, shared with employees,** or **used for social or environmental impact**, rather than distributed to shareholders.
- main purpose it that the company remains **mission-driven** and resistant to **profit-driven takeovers**.
- famous examples: Ecosia, Patagonia, Carlsberg

vito

vito.be

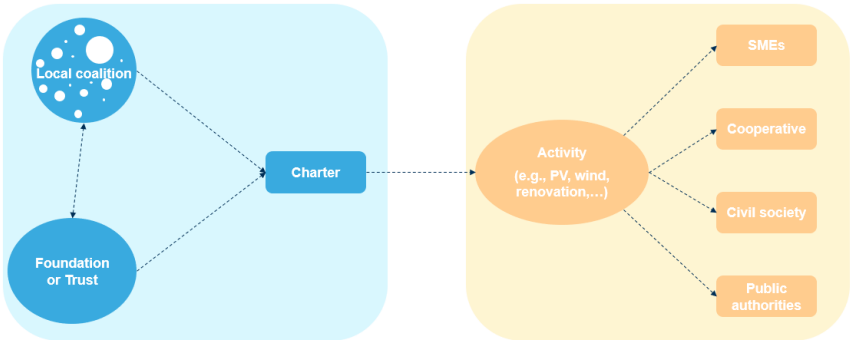
Stewardship-ownership model

Governance structure



Stewardship-ownership model

Application to local energy transition?



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Annex 6: Reflexive learning session – Burenwerf (online, 12 September 2024)

1 Participants

Table 15: List of participants

Organisation	Name
VITO	Joeri Naus
VITO	Erik Laes
ZuidtrAnt	Sophie Loots
ZuidtrAnt	Liesbet Veulemans
Duneworks	Marten Boekelo
Duneworks	Sylvia Breukers
Agem	Justin Pagden
Kamp C	Jet Groen
Kamp C	Maro Saridaki
Mechelen	Bart De Bruyne
Mechelen	Maud De Lauw
Klimaan	Steven Laurijssen

2 Aim

The aim of the reflexive learning session is to share lessons learnt from the TANDEMS' pilot projects with the consortium partners, deepen insights and define actions. During the learning session following steps are taken:

1. The action manager introduces the pilot project and explains the project's context (local, regional, national) to the participants.
2. The action manager explicates 3 to 5 key moments, i.e., events that really changed the course or dynamics of the project in a positive and/or negative way. For each event the action manager explains what happened (event), what the outcomes were (after) and what conditions and factors were important for making this happen (before). The participants take notes while listening (e.g., ideas, questions, feelings, associations).
3. The participants process their thoughts and write down their most important question(s) and their most important insight(s).
4. The participants share their questions with the action manager. The facilitator guides the discussion and uses the systemic iceberg to capture additional insights.
5. The participants share their insights. The facilitator guides the discussion and uses the systemic iceberg to capture additional insights.
6. The participants identify the most relevant "eye-openers" that they can benefit from in their own contexts.
7. The participants translate the learnings into actions (i.e., what changes or interventions are needed to strengthen the value network of the pilot project(s), to catalyse just energy

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projects at national or regional level, to facilitate wider systemic change ate national or EU level?)

8. The action manager reflects on what he/she has learned for their pilot project (i.e., what are the key lessons, what could/should be changed as a result?)

3 Looking back to previous session: 5 mechanisms for accelerating local transition initiatives

Joeri Naus revisited the discussion from the previous learning session, highlighting replication as a tool to extend the impact of pilots like those in the TANDEMS project. Replication is not merely about copying or duplicating a project but about adapting its core elements—such as business models, practices, or organizational structures—to fit different local contexts. The aim is to inspire and support other initiatives while accounting for the unique circumstances that may influence their success.

One challenge highlighted is that each transition initiative is rooted in specific local contexts and driven by unique actors, making it difficult to directly replicate them. For instance, an energy transition project in one region may face completely different social, economic, or environmental conditions in another region, requiring a flexible approach to transferring knowledge. This is where “inspirational replication” comes into play, a term that emerged during the previous learning session. It suggests that the lessons learned from one initiative can inspire and inform others, but with a focus on understanding the key factors that need to be adapted for success in a different setting. This process helps other projects avoid common pitfalls while focusing on critical aspects like including marginalized groups or addressing specific community needs.

Erika Meynaerts expanded on the idea of “inspirational reflection” referring to the FP7 project ARTS, which aimed to explore different mechanisms for accelerating the impact of local transition initiatives (cf. Section 10 for slides). These mechanisms were intended to assess how local transition initiatives scale their influence and make a broader contribution to sustainability goals. Local transition initiatives are typically networks of actors working to introduce new practices, technologies, or experiments aimed at systemic change. These networks are often local and driven by responses to global or national challenges, which adds complexity when trying to replicate or scale them. To address this complexity, **five key acceleration mechanisms** were identified in the ARTS project:

Replication: this involves transferring the ways of thinking, organizing, or doing from one initiative to another. Replication can take several forms, including direct "copy-pasting" of specific elements like a business model or organizational structure. However, as noted in the discussion, pure replication is often impossible due to varying local conditions. More frequently, replication requires tailoring the ideas and approaches to the new context, an approach referred to as “emulating”. In this case, the essence of the initiative is transferred, but it is customized to better align with the characteristics of the new setting.

Coupling: involves setting up partnerships to create synergies. By connecting different projects, actors, or resources, initiatives can leverage each other’s strengths and accelerate their collective impact.

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Upscaling: focuses on expanding the size or scope of an initiative to have a broader impact. Upscaling may involve increasing the number of participants, expanding geographically, or applying successful practices on a larger scale.

Instrumentalizing: entails using existing systems, frameworks, or tools to support the spread of initiatives. It might involve aligning a local initiative with national policies or leveraging public-private partnerships to ensure long-term sustainability. Instrumentalizing allows local initiatives to fit into broader societal structures, helping them gain support and recognition.

Embedding: aims to integrate the practices, values, or principles of a local initiative into mainstream societal norms and systems. For example, an initiative focusing on renewable energy could influence local or national policy, making sustainability a standard approach rather than an exception. By embedding the initiative's values into the larger system, the impact becomes lasting and more widespread.

These mechanisms also illustrate that replication is just one pathway to accelerate local transition initiatives.

4 Learning objectives

Participants were asked to share their learning objectives with the presenter (i.e., action manager) ahead of the presentation, allowing the presenter to better tailor the content to focus on the context and key events. Also, both the learning objectives and any questions raised during the session (see section 4) can be utilized by the action manager to tailor and focus the guidance document for the pilots, as part of WP3.

- Maro Saridaki (Kamp C): How do you engage the architects and energy controllers?
- Justin Pagden (Agem): To understand better what Burenwerf is and how we can learn from their insights in the Dutch context.
- Steven Laurijssen (Klimaan): To get an idea on what it takes to start with / work on energetic home renovations.
- Steven Laurijssen (Klimaan): To get an idea on the future feasibility (ZR perspective).
- Bart De Bruyne (City of Mechelen): How to get everybody at the same moment on board?
- Jet Groen (Kamp C): Who controls the construction site? How about liability / insurance?
- Jet Groen (Kamp C): Who is responsible for the delineation of time/fee - business model?
- Maro Saridaki (Kamp C): Is economy of scale possible?
- Maro Saridaki (Kamp C): Does reporting on impact play a role in the collaboration with the municipality?
- Maro Saridaki (Kamp C): What could the role of Kamp C (and the REC Kamp C) be in Westerlo / Olen's Burenwerf?
- Sylvia Breukers (Duneworks): how can Burenwerf be a replicable model?

The learning objectives serve as the basis for identifying lessons learned in Section 8. The learning objectives that were not addressed during the session are reformulated into actionable items in the action table presented in Section 7, if possible and relevant.

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5 Introduction of pilot project: the story of Burenwerf

Burenwerf started around five years ago, when the Flemish Government made a strong commitment to addressing the challenge of energetic renovation for homes. Recognizing the importance of improving the energy efficiency of buildings, they initiated a project with funding specifically designated for this purpose. The project initially focused on providing hands-on support to residents who wanted to renovate their homes but lacked the knowledge or resources to get started. ***[window of opportunity; political commitment; policy goals]***

A small amount of funding was made available, and the first step involved the introduction of a BENOvatiecoach. This coach was pivotal to the success of the program, providing direct assistance to people by guiding them through the renovation process. One of the initial key contributors was a volunteer engineer who took on the role of helping others through freelance operations. His work marked the very beginning of what would become a much larger neighbourhood-focused initiative. ***[funding; volunteering]***

At the time, the legislation on renovation was rapidly changing in Flanders, which posed challenges for the organization. They had to remain flexible, adapting their business model to keep pace with evolving policies. Initially, the funding was only available if at least ten people from the same street applied for the renovation initiative. However, after some time, the legislation was adjusted, allowing participants from across the same municipality to qualify, easing the process considerably**.** ***[unstable regulatory framework; resilience]***

Burenwerf's renovation approach is structured in two distinct ways: individual approach and neighbourhood-based approach. For individual renovations, people take charge of their own projects without much involvement from the municipality. They follow a guided process in which the renovation coach assists them in a step-by-step manner, helping them address their renovation needs at their own pace. However, the neighbourhood renovation approach is a much more comprehensive and long-term process. It typically takes between one to two years, sometimes even up to two and a half years, for a neighbourhood renovation project to fully unfold. The key difference here is the essential role played by the municipality. For a neighbourhood renovation to succeed, the municipality needs to be actively engaged. This includes having a solid communication channel between Burenwerf and the municipal administration, allowing the organization to ask questions and coordinate efficiently. The municipality is also responsible for spreading the word in the neighbourhood, which is crucial because when the municipality communicates the initiative, residents perceive it as a trustworthy and non-commercial project. Without municipal involvement, residents might become suspicious, fearing that the project is profit-driven, which could lower participation. ***[citizen engagement; trust; individual vs collective; trust-building is key in collaborations with citizens, municipalities and others]***

Once a neighbourhood renovation project is underway, it goes beyond just addressing individual houses. The first step typically involves inviting residents to a brainstorming session, facilitated by a letter sent to each household. In this initial gathering, the discussion focuses not only on the energy efficiency of individual homes but also on broader community aspirations. Participants are encouraged to envision the future of their neighbourhood, considering elements like green spaces, mobility solutions, and energy sharing systems. This participatory approach ensures that the renovation project aligns with the community's long-

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term vision for their environment, looking ahead to how their neighbourhood should look in the next 10 to 20 years. ***[alignment with citizens' needs]***

Burenwerf organizes several such participation sessions in each neighbourhood, fostering continuous engagement. During these meetings, they also explain the support available for individual home renovations, offering tailored advice through renovation coaches. These coaches visit each interested household to assess the current energy consumption and condition of the property. A key part of this process is creating an EPC (Energy Performance Certificate). Based on the EPC results, Burenwerf provides a detailed, phased plan that outlines the steps the homeowner can take to improve their home's energy efficiency. This step-by-step guidance allows residents to decide how far they want to go with renovations, while ensuring they follow the correct sequence to avoid unnecessary costs or complications. For instance, they are advised on how to prioritize insulation before installing solar panels to optimize the overall energy efficiency. ***[citizen engagement]***

In addition to individual advice, Burenwerf also facilitates group purchases for energy-saving measures, such as insulation, and solar panels. By organizing group purchases for photovoltaic (PV) systems and insulation materials, they help homeowners get better deals, making the renovation process more affordable. This group purchase approach is part of the broader effort to encourage community-wide participation and ensure that entire neighbourhoods can benefit from energy efficiency improvements. ***[community engagement]***

The first neighbourhood renovation project (in Zoersel) revealed several challenges. The municipality had chosen the neighbourhood because the houses were built between the 1980s and 1990s and were due for renovation. However, the project quickly encountered difficulties. The homes were large, standalone buildings, and many of the residents were elderly. These older residents expressed reluctance to renovate, preferring to sell their homes and move to smaller apartments. Moreover, the size and isolated nature of the homes made it hard to create a sense of neighbourhood identity and cohesiveness. As a result, the renovation struggled to gain traction in this community. From this experience, Burenwerf learned a critical lesson: the choice of the neighbourhood plays a pivotal role in the success of renovation projects. Neighbourhoods with homes that are more interconnected, both physically and socially, create a better environment for collective renovation efforts. ***[choice of neighbourhood; community identity and cohesiveness]***

In contrast, another renovation project in a different neighbourhood (in Schoten) proved to be much more successful. This neighbourhood had homes that were closely connected, both in terms of their physical proximity and the social cohesion among residents. However, this project presented its own challenges. Some of the houses had facades with protected architectural elements that could not be altered. This meant that the team could not simply insulate the houses in the usual way, as doing so would compromise the protected facades. To address this, the team worked closely with contractors to find a solution. They sought insulation techniques that would allow the protected architectural elements to be restored while also improving energy efficiency. The goal was to ensure that the neighbourhood's aesthetic remained the same after the renovation as it was before, preserving its visual appeal while upgrading its energy performance. The contractors also participated in neighbourhood meetings to demonstrate how the insulation would be done, answering residents' specific questions and providing tailored solutions to their concerns. ***[citizen engagement; resilience]***

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In the third major neighbourhood renovation project (in Edegem), Burenwerf worked in partnership with the Energy House (as part of the intermunicipal organization IGEAN). However, this case highlighted the complexity of coordinating multiple organizations. The residents of Edegem became confused about who was responsible for what part of the renovation process, what services were free, what they had to pay for, and who would be entering their homes. The involvement of different organizations created chaos, making it difficult for residents to understand the process. This confusion hindered the project's progress and emphasized the importance of clear, unified communication and collaboration between all parties involved in the renovation process. ***[clear communication; partnering]***

Within the framework of the LEKP (Local Energy and Climate Plan), it became much easier to approach local governments. Since these municipalities were already obligated to act under the LEKP, reaching out to them with offers of collaboration or support was straightforward. The obligation on the part of the local governments to act on energy and climate issues made them more receptive to such proposals. ***[window of opportunity; policy goals]***

[Working at the individual and collective level (in parallel) is an important condition for success]

6 Presentation of key events

Key moment 1: obligation within the LEKP and its adaptation to Fit for 55

One of the most significant moments for Burenwerf was the introduction of the LEKP (Local Energy and Climate Plan), which created an obligation for municipalities to act on energy and climate issues. This made it easier for Burenwerf to approach local governments with renovation offers, as municipalities were required to engage in these initiatives. Furthermore, the adaptation of the LEKP to align with the "Fit for 55" package (i.e., to reduce EU net greenhouse gas emissions by at least 55% by 2030) strengthened this obligation. The result was increased interest from municipalities to collaborate on neighbourhood renovation projects**.** ***[instrumentalising]***

Key moment 2: collaboration with inter-municipal companies

Another key development for Burenwerf was the opportunity to collaborate with inter-municipal companies. These companies, which operate across multiple municipalities, sometimes made it easier for Burenwerf to gain access to local governments and initiate renovation projects. However, working with these entities could also add complexity to the process, given the need to balance interests across various municipalities within a region. ***[partnering]***

Key moment 3: working group on collective renovation

The third critical moment came when multiple inter-municipal companies began starting up renovation projects. In response, a working group of renewable energy cooperatives was organized, allowing for shared learning and collaboration between different projects. This working group provided valuable lessons and insights, helping Burenwerf to better understand the landscape and gain more input to start lobbying efforts. ***[partnering]***

Key moment 4: changes to the subsidizing scheme

The final key moment is happening in real-time. There are plans to change the subsidizing scheme for renovations, which will have a significant impact on Burenwerf's business model.

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The changes could alter how they approach neighbourhood and individual renovation projects, making it a crucial moment in their ongoing work. ***[instrumentalising]***

7 Q&A

Question: how does the finance model of the contracts look like? In the renovation, is it individual? Do they have spillover positive effects of economies of scale, and how are the margins set?

They establish a collaboration or partnership agreement with the municipality. For instance, providing individual renovation advice, such as for PV installations, costs the municipality €2,500 per year. Currently, they have around 15 partnerships with different municipalities. This funding helps cover the salary of the Klimaatwerf coordinator, the non-profit organization managing the projects and offering support to both individuals and municipalities. ***[partnering]***

For neighbourhood renovation projects, they create a customized offer for each municipality, as needs vary. The cost depends on the level of time and effort invested in the specific project. Another significant source of funding comes from the Distribution System Operator (DSO), which finances both individual renovation advice and the implementation of actual renovations. This funding is used to pay freelancers (BENOvatiecoaches) involved in the projects. The DSO, in turn, receives its funds from the Flemish Government.

Since the organization operates as a non-profit, there is no need to generate profit. Unlike energy cooperatives that aim to make a profit, the non-profit focuses solely on covering employee wages.

Klimaan operates a similar partnership model for house renovations, where they charge a fee for both the renovation work and project management. However, these fees are only covered once the contract is signed, meaning they cannot recoup the costs of initial meetings and communication prior to that. To address this, they plan to request a subsidy from municipalities. ***[funding]***

Question: what does Burenwerf have to prove for the contract with the community, particularly in relation to the LEKP (Local Energy and Climate Pact – Flanders)?

The contract with the municipalities is not based on specific results. Instead, under the LEKP agreement with the Flemish Government, municipalities are required to offer renovation guidance and promote individual renovations. Since most municipalities lack the personnel and do not want to collaborate with commercial organizations, they partner with non-profits like Klimaatwerf. ***[policy goals]***

Every year, Klimaatwerf reports on the number of people they helped, the renovations completed, and the impact of those efforts. However, there is no obligation to meet a specific target. The success of the collaboration often depends on the municipality's communication efforts. When municipalities actively promote the partnership, more residents seek advice. Conversely, if the communication is weak, fewer residents participate. Additionally, Fluvius (the DSO) provides separate reporting on the LEKP portal, but certain details like participation in information sessions are not captured, so these must be manually reported. As part of their offer, Klimaatwerf also provides a free information session on topics such as energy, renewable energy, or fossil-free heating, chosen by the municipality. Publicizing these

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sessions is the municipality's responsibility. The €2,500 per year covers this service, along with renovation guidance and PV advice. ***[instrumentalizing]***

Question: are there municipalities in the Igean region with a more autonomous or elaborate renovation approach, and how could one collaborate with such municipalities?

As far as they know, there aren't any municipalities that have developed a more autonomous or elaborate renovation approach on their own. Most municipalities recognize the complexity and expertise required for renovation projects and thus prefer to collaborate with organizations that can provide this support. Some municipalities might seek help from entities like Transition Heroes, which is a commercial company providing similar services but at a higher cost compared to Burenwerf. For instance, in the city of Lier, their guidance services were significantly cheaper than those offered by other experts, which might suggest that their pricing is more competitive.

Municipalities often choose to work with non-commercial organizations like Burenwerf rather than commercial entities because they aim to avoid the additional costs associated with for-profit companies. They appreciate the value provided by non-profit organisations, which do not seek to make a profit and focus solely on providing the necessary services. This preference for non-profit over commercial organizations can be influenced by financial considerations and a desire for more straightforward collaboration. The political situation and the history of collaboration between non-profit organisations and municipalities also play a role in these decisions. Municipalities may find it easier to work with non-profit organisations due to their alignment with public service goals and lack of profit motives, which aligns with their operational and budgetary priorities. ***[shared (non-profit / public services) goals; (re)establish trust relation -be reliable partner, compared to distrust in commercial companies]***

Question: how does Burenwerf justify the low cost of its services, and is there potential for integrating growth and additional staffing into future collaborations?

Although the pricing might seem exceptionally low given the value they provide to municipalities, their approach is driven by a mission to create impact rather than profit. They aim to offer affordable renovation guidance to encourage widespread participation. If the cost were higher, it could deter potential participants, especially in fluctuating circumstances such as an energy crisis or when there is low interest in renovations. Although they do not currently have a built-in perspective for scaling up or adding employees, they recognize the importance of balancing cost with impact. They are cautious not to work for free but focus on maintaining a positive reputation and effectiveness. If they charge too much without creating tangible results, it could harm their reputation. ***[impact-driven]***

Question: what is ZuidtrAnt's role as a citizen energy community in the field of renovation, and why would ZuidtrAnt do this? What is the motivation for ZuidtrAnt to become active in the field of renovation, and what is the natural position of an energy community within this field?

Their role as a citizen energy community is driven by a dual purpose. Firstly, they aim to build strong, trustworthy relationships with municipalities. They want to demonstrate that

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municipalities can rely on them for effective support and guidance. By starting this project, they sought to establish a partnership with local governments and give them confidence in their commitment and capability.

Secondly, their motivation is rooted in addressing climate concerns through a bottom-up approach. They began with a high level of idealism, intending to support citizens directly in their energy and renovation challenges. Their goal is to offer reliable, unbiased advice that helps individuals navigate the often confusing and contradictory information they receive from various contractors. They want to empower citizens by providing trustworthy guidance and fostering a collaborative environment with municipalities. ***[empower citizens]***

In terms of our natural position within this field, they see themselves as a bridge between citizens and the broader renovation and energy sectors. They focus on building trust and offering clear, supportive advice to those who might feel lost or overwhelmed by the complexities of renovation and energy solutions. By maintaining a citizen-focused approach and working closely with municipalities, they aim to effectively address community needs and promote sustainable practices. ***[citizen-focused approach; addressing community needs]***

Question: the description of Burenwerf suggests that this might be a citizen-led initiative, possibly with a volunteer element where individuals help each other with knowledge about solar panels or renovation. Is this the core of its model, or does Burenwerf envision it as a more commercial venture involving professional service providers?

Burenwerf works with professionals, not volunteers. The individuals providing advice on renovations are qualified architects or EPC (Energy Performance Certificate) experts who have the necessary certifications and training. They ensure that advisors are professionals with the proper background and qualifications. However, it is crucial that their services remain affordable for everyone. They do not want to be perceived as a service only accessible to the wealthy. Their goal is to make their services available to a broad audience, ensuring that the energy transition is accessible to everyone. ***[affordable and accessible for all]***

Question: how does Burenwerf positions itself in relation to municipalities and other commercial entities? Burenwerf works with professionals but is not a commercial entity, so how does Burenwerf cover costs and position itself?

They position themselves as a reliable partner driven by a mission rather than profit. Although they work with professionals and need to cover costs, their primary focus is on being a trustworthy and supportive entity. The lack of a profit-driven approach helps build confidence among clients, who appreciate that they are not seeking quick financial gains but are genuinely committed to helping them. This approach often leads to clients returning for additional services because they value their mission and support. ***[reliable partner; impact-drive]***

Question: has Burenwerf encountered issues with liability or the quality of work during renovations, particularly regarding the responsibility of contractors and architects? How does Burenwerf handle these situations, and does Burenwerf have any experience managing such problems?

Burenwerf provides advice on renovations and can suggest contractors, but they are not involved in the contractual agreements between the participants and the contractors. The

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choice of contractor and the contract itself are handled directly between the participant and the contractor. Burenwerf does not have control over these agreements. If there are problems with the execution of the work, participants can contact Burenwerf for advice. Their approach involves an intermediary role where they can help identify and address issues, but they do not intervene directly in the contractual matters. They strive to assist in resolving issues by offering support through their advisors, but they do not have direct control or involvement in the contracts, or the quality of the work performed by the contractors. To date, they have not had significant problems or extensive experience with managing such issues, but they aim to facilitate resolution through their support channels.

Question: how does Burenwerf approach the selection of neighbourhoods for renovation projects, and does Burenwerf provide guidance to municipalities on which neighbourhoods might be more suitable?

They ask municipalities to carefully consider neighbourhood selection, providing them with suggestions based on their experiences from previous projects like in Zoersel and Schooten. They advise them on what factors to consider for a successful renovation. For example, in Schooten, having an existing neighbourhood committee with a strong community vibe made it much easier for the municipality to communicate with residents and engage them in the project. They emphasize that a well-established community can significantly enhance the effectiveness of renovation and future projects. They are drafting a formal script that will outline all the “do's’ and ‘don'ts” for neighbourhood innovation. This script is one of the TANDEMS deliverables and will provide structured guidance rather than relying on an implicit understanding. A successful aspect of the project in Schooten was that the municipality created posters for residents to display in their windows. These posters allowed the neighbourhood to see who was attending meetings and participating in the renovation project. ***[community feeling]***

Question: does the selection of a neighbourhood matter to Burenwerf, considering factors like the physical layout, social relations, and the potential impact of funding changes? Do you also influence this selection based on Burenwerf's identity or motivations?

The selection of a neighbourhood matters to Burenwerf. They try to influence the choice by providing suggestions based on their experience and observations, such as recommending neighbourhoods with existing community vibes for easier engagement. However, they do not have in-depth knowledge of every neighbourhood and sometimes rely on municipalities to make the final decision. For instance, in Wuustwezel, no one from the team lives there, so they lack familiarity with the neighbourhood and rely on the municipality to make those decisions.

The demographic situation of a neighbourhood is also crucial. For instance, if a neighbourhood's population is predominantly elderly, it may not be ideal for initiating renovation projects due to potential reluctance to invest in house renovations. Regarding funding changes, especially with upcoming budget adjustments that may favour low-income households and exclude middle-class ones, they are considering how to adapt. Currently, the funding for renovation from Flanders is directed towards Energy Houses. They might have to request more money directly from citizens for their services if they do not receive the expected funding. Their approach will depend on how these funding decisions impact their operations and strategy. The benefit for Burenwerf is that advice and guidance are provided by

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freelancers. Since these freelancers are not on the organization's payroll and have other freelance jobs, the organization does not bear the burden of full-time employee management. This reduces the overall impact and concerns regarding staffing. ***[funding; locally anchored]***

Question: how does Burenwerf position itself in relation to Energy Houses, and how do Energy Houses perceive Burenwerf as a collaboration partner? Also, what could help break the stalemate in this relationship?

The Energy Houses often see Burenwerf as competition, primarily because Burenwerf offers similar services but at a lower cost. While the Energy Houses tend to have high overhead costs and receive significant funding from the government, Burenwerf is more hands-on and provides more affordable services. This makes collaboration difficult as some Energy Houses prefer to retain the funds for their own operations. The political nature of inter-municipal organizations creates a challenge, as politicians often do not see the lack of service delivery that municipal workers experience. ZuidtrAnt even created a non-profit organisation to make collaboration possible, but despite this, there are always obstacles preventing collaboration.

The key problem is that Flanders directs renovation and related funding to the Energy Houses, leading some of them to guard their resources to cover their internal costs rather than partner with others. However, there are successful cases of collaboration between Energy Houses and energy cooperatives, showing that the possibility exists but depends heavily on the openness of individual inter-municipal organizations. ***[hands-on]***

Question: How is the exchange of information and lessons learned structured within the working group on renovation? Is it a free exchange, or is there a more structured approach with specific questions?

The exchange of information between energy cooperatives within the working group on renovation started organically, without a formal structure. The group began by wanting to learn from each other, and now includes five energy cooperatives. The sharing of experiences and knowledge happens naturally, without strict guidelines or structured questions. Although they receive some support from the federation for renewable energy cooperatives, i.e., Rescoop Flanders, the group is committed to continuing independently, even without external backing. The process remains flexible and driven by the participants' needs.

One key challenge is the need for a better CRM system for renovation guidance. Some energy cooperatives, like Energent in Ghent, have developed their own CRM systems and are selling that system, but this leads to inconsistencies. Ideally, they want a unified CRM system across all energy cooperatives in Flanders, which would allow for more structured and standardized guidance. However, this could lead to a loss of individuality, which is a concern for some energy cooperatives. ***[individuality; sharing lessons learned]***

Question: is there a possibility to collaborate with the Energy Houses that have more resources to pool together, and what are the challenges with investing in systems like CRM in this context? Could this help avoid potential clashes with Energy Houses that might have their own systems?

There are challenges in collaborating with Energy Houses due to a CRM system promised by Flanders, which is still under development (delayed till beginning of 2025). The Energy Houses are waiting for this system, making them hesitant to invest in their own solutions.

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For energy cooperatives, it is difficult to invest in systems like CRM because there is uncertainty about whether the system they invest in, will become standard or obsolete soon. As a result, they are using a temporary Teams environment, which works but is not user-friendly. Investing in a better CRM system would make things easier, but with the potential for rapid change, it is risky to make a significant investment now when the landscape could shift within a year.

8 Eye openers and Actions

Marten Boekelo's **(Duneworks)** insight highlights a key issue with how services are financed, particularly the tendency for organizations to under-promise on deliverables. This puts service providers in a difficult position, as they must ensure everything functions smoothly, given the way support is structured at both municipal and regional levels. His observation points to the need for a reevaluation of how responsibilities and expectations are shared to avoid overburdening service providers. In simpler terms, lump-sum financing for renovation services, while efficient due to its low administrative cost, poses risks for ZuidrAnt. They must avoid overpromising to protect their reputation, yet they cannot predict the demand for their services in advance. This creates an incentive to underpromise and overdeliver, making their services appear "cheap" to municipalities relative to the actual value they provide.

Erika Meynaerts **(VITO)** realized that energy communities have a unique value proposition in the field of energy renovation, especially in neighbourhoods where they are deeply rooted. Unlike larger entities like the Energy Houses which tend to apply generic solutions, energy communities offer tailor-made approaches, engaging with local residents through co-creation sessions and building solutions based on neighbourhood-specific needs. This insight can contribute to **Work package 5**, particularly in the policy dialogues, where this positioning of energy communities in relation to the Energy Houses will be discussed. ***[unique value proposition; tailor-made approaches; citizen engagement]***

Sophie Loots **(ZuidtrAnt)** added that Burenwerf involves volunteers from the neighbourhood as spokespersons. These volunteers receive training, somewhat like energy experts, so that they can assist neighbours with specific questions, such as those related to electricity usage. This approach helps engage local residents who are interested in learning more about energy-related topics and allows them to support their own community. ***[train-the-trainer model]***

Erik Laes' (VITO) eye opener was about the structure and logic behind the Energy Houses in Flanders. These Energy Houses provide a service across all municipalities, but this approach may not fully recognize the unique value that energy communities offer at a more local level. Specifically, the quality and value created by energy communities are not necessarily acknowledged by the official Key Performance Indicators (KPIs) or criteria used by the local authorities. The related action suggested was to **investigate in frame of the policy dialogues**, in **Work package 5, the criteria used for evaluating energy services** and explore whether those criteria can be changed to better account for the added value that energy communities bring to their collaborations with municipalities.

Sylvia Breukers' (Duneworks) eye opener was the realization of the importance of building trust and creating a compelling narrative about what you have to offer. There is value in actively developing and presenting a strong, honest story that resonates with stakeholders. This approach involves leveraging trust and transparency, even though it can make an organization

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vulnerable in a changing policy and political environment. Sylvia recommended **discussing two strategies** in frame of **Work package 5 to reinforce the impact** of the energy communities **and ensure alignment with evolving policies**: ***[trust, compelling narrative; "make them an offer they cannot refuse"]***

- Develop and communicate your **unique story**: rather than waiting for policy criteria to evolve, focus on crafting and presenting your own narrative that highlights how you meet existing criteria and showcases your unique value.
- Engage and collect **endorsements**: strengthen your position by involving municipalities and residents who have positive experiences with your services. Collect their referrals or success stories to bolster your case and feed this information into policy discussions.

Joeri Naus **(VITO)** emphasized the importance of not only executing projects but also actively reflecting on and anticipating changes in the field. Staying attuned to broader societal, policy, and funding trends enables organizations to navigate and adapt more effectively. This proactive approach facilitates better manoeuvring and positioning within a constantly evolving environment. Joeri advised **dedicating time to regularly assess external trends and shifts rather than focusing solely on immediate project tasks (WP 3)**. By monitoring societal and policy developments, organizations can anticipate their potential impacts and use these insights to continuously refine and adapt their strategies, ensuring they remain relevant and agile amid changing conditions. ***[active positioning in the field (ongoing reflection)]***

Steven Laurijssen's **(Klimaan)** eye opener was the recognition of the challenge posed by fluctuating funding mechanisms in the energy sector. While offering municipalities a non-commercial, tailor-made solution is valuable, the instability in funding mechanisms increases uncertainty and complicates the ability to provide consistent, reliable solutions. Steven suggested **advocating for more stable funding to reduce uncertainty and support long-term planning and execution (WP 5)**. Steven considered the possibility of teaming up with other energy cooperatives to address the issue collectively. This involves sharing concerns and working together to influence policy changes and improve the stability of funding mechanisms. He acknowledged the need to adapt to the changing landscape and suggested that adapting strategies to new funding realities is also crucial. This means staying flexible and responsive to the evolving conditions in the energy sector. ***[unstable regulatory framework → uncertainty funding; adaptative strategies]***

Justin Pagden's **(Agem)** eye opener was the realization that competing with established Energy Houses is impractical because they have a strong foothold. Instead, he emphasized that it is crucial to focus on unique strengths and areas where the Energy Houses are lacking. He suggested leveraging these unique aspects to build valuable partnerships and become indispensable assets in the energy sector. Justin recommended **identifying and emphasizing** the **unique strength**s of your organization that the Energy Houses cannot offer. This involves understanding and showcasing what sets you apart and capitalizing on these aspects to provide additional value. Justin stressed the importance of becoming a recognizable and trusted figure within the communities you serve, particularly in engaging with vulnerable households. Building strong, trusted relationships can make your organization a valuable partner that Energy Houses cannot ignore. Instead of competing with the Energy Houses, Justin suggested finding ways to collaborate. By combining strengths and working together, you can enhance your impact and become a more integral part of the energy landscape. Justin

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acknowledged the **value of volunteers and grassroots efforts in energy coaching**, suggesting that this model of engagement can be beneficial and worth **exploring in other contexts (WP3)**. ***[trusted relationship]***

Jet Groen's **(Kamp C)** eye opener was the realization of the complex position of Kamp C, being between different stakeholders like Flanders, Energy Houses, and local communities. This positioning presents both opportunities and challenges in integrating and applying insights from various projects and discussions to their ongoing neighbourhood renovation projects. Jet plans to **incorporate the insights gained from the learning session into their neighbourhood renovation projects (WP3).** Jet highlighted the importance of connecting with various stakeholders, including the municipality and the energy cooperative Campina, to ensure that all insights and experiences are shared and utilized effectively. This also involves communicating experiences and lessons learned to influence policy and practice. Jet expressed a need to **reflect on and define the position of Kamp C in the broader discussion involving Flanders, Energy Houses, and other entities (WP5)**. Understanding and clarifying their role can help in navigating the complexities of the energy landscape and in contributing effectively to discussions and decisions. Jet mentioned the need to work on policy-related aspects and integrate those into their strategy. This involves addressing policy challenges and aligning their approach with existing regulations and frameworks.

Maro Saridaki's (Kamp C) eye opener was the realization that there is not always a clear "win-win" scenario for everyone involved in energy transition projects. This insight exposed a broader issue where some actors might not fully recognize or might actively obstruct the potential benefits of these projects. Maro noted the challenge of effectively communicating the impacts of energy transitions and addressing the polarization of social inclusion, which remains a complex issue. In response to this, Maro plans to **integrate the insights gained into the current Foster-project**, aiming to apply a deeper understanding of social inclusion and communication strategies into its implementation. This approach is intended to better address and leverage these dynamics to benefit the project. Maro also intends to **engage in ongoing policy dialogues (WP5)**, including those related to the Foster-project, to incorporate these new insights and influence broader policy discussions. By doing so, Maro hopes to advocate for greater recognition and support for social inclusion within energy transition efforts. Maro plans to **reconnect with the Province of Antwerp**, revisiting the ideas and inspirations shared by them two years ago. This involves considering inviting them back for further discussions to ensure that their insights are integrated into current energy landscape projects, thereby maintaining alignment and continuity in the approach.

Sophie Loots **(ZuidtrAnt)** realized that the services offered by Burenwerf might be undervalued, indicating that their pricing could be too low. This led her to consider **developing a strategy to better position themselves in the market while maintaining their core intentions (WP3)**. She emphasized the importance of remaining open to collaborations with others to leverage their unique value and strengthen their market position. Additionally, Sophie noted that their smaller size allows them to be more flexible and adapt quickly to changes in legislation, a strength they should leverage. This agility sets them apart from larger, more bureaucratic organizations. ***[agility]***

Liesbet Veulemans **(ZuidtrAnt)** added that they need to better communicate their **unique selling points**. She stressed the importance of highlighting their tailored approach and the full

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extent of their services, beyond just renovation guidance. This will help differentiate them from competitors and attract more interest from potential partners and clients. ***[unique selling proposition]***

Table 16: List of actions

Action	Driver	Related Work Package
Investigate the criteria used for evaluating energy services.	Kamp C (Jet Groen, Maro Saridaki), in collaboration with ZuidtrAnt and Klimaan, supported by Duneworks	WP 5, policy dialogue
Discuss two strategies for energy communities to increase impact and ensure alignment with evolving policies: develop and communicate your unique story (value proposition); engage and collect endorsements.	Kamp C, (Jet Groen, Maro Saridaki) in collaboration with ZuidtrAnt and Klimaan, supported by Duneworks.	WP 5, policy dialogue
Dedicate time to regularly assess external trends and shifts rather than focusing solely on immediate project tasks.	action managers	WP 3
Advocate for more stable funding to reduce uncertainty and support long-term planning and execution.	Steven Laurijssen (Klimaan)	WP 5, policy recommendations
Reflect on and define position of Kamp C in the broader discussion involving Flanders, Energy Houses, and other entities.	Jet Groen (Kamp C)	WP 5, policy dialogue
Incorporate the insights gained from the learning session into neighbourhood renovation projects → e.g., assess which neighbourhoods in Oosterwijk are interesting for renovation.	Jet Groen (Kamp C)	WP 3
Share insights of learning session with Foster-project	Maro Saridaki (Kamp C)	WP 5
Integrate lessons learned from learning session in REC Kamp C.	Maro Saridaki (Kamp C)	WP 3

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Communicate lessons learned with the Energy Landscapes project of the Province of Antwerp (Urban Planning department) & Kempen 2030.	Maro Saridaki (Kamp C)	WP 5
Develop a strategy to better position Burenwerf in the market, while maintaining core intentions.	ZuidtrAnt (Sophie Loots & Liesbet Veulemans)	WP 3
Attend to the importance (and challenges involved) of pooling efforts and resources with trusted partners in the face of volatile policies and politics.	Sylvia Breukers (Duneworks)	WP 5

9 Lessons learned for TANDEMS

Business model of Burenwerf.

Burenwerf operates as a non-profit organization focused on providing affordable renovation guidance, primarily partnering with municipalities. Their services aim to be accessible, ensuring that individuals, regardless of income, can participate in renovation projects.

Burenwerf's financial model in renovation projects reflects its non-profit structure, collaborative approach with municipalities, and impact-driven mission. The financial relationship is largely built on partnerships with municipalities and funding from the Flemish Government via the Distribution System Operator (DSO). Under the Local Energy and Climate Pact (LEKP), municipalities must provide renovation guidance and promote renovations, but their capacity is often limited. Burenwerf fills this gap by offering affordable and expert advice, making them a natural partner for municipalities. Although the contracts with municipalities do not stipulate specific results, Burenwerf reports annually on the number of people helped and the renovations completed, providing transparency and accountability.

Burenwerf partners with municipalities, offering individual renovation services for a fixed annual fee (€2,500 per municipality). The fee helps cover operational costs without the need to generate profit. This fee model ensures municipalities can access expert renovation guidance without taking on a commercial burden. These contracts allow municipalities to meet obligations under the Local Energy and Climate Pact (LEKP). In neighbourhood renovation projects, Burenwerf creates customized offers for each municipality, depending on the scope and effort required. Burenwerf offers flexibility, adjusting pricing based on time and resources. The collaboration with municipalities involves both financial contributions from the municipality and non-financial support, such as promoting renovation initiatives to residents and facilitating community engagement.

The model benefits from economies of scale by focusing on neighbourhood-level renovations. By engaging entire communities rather than individual homes, Burenwerf can pool resources, share information efficiently, and reduce costs. This generates a positive spillover effect where

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multiple residents benefit from a single intervention, like an energy advice session or community-led renovation project. The overall cost per renovation advice or project decreases as more households are involved, allowing municipalities to maximize their budget.

As a non-profit organization, Burenwerf does not focus on generating profits but on covering operational costs. Margins are thus minimal, with the goal of maintaining affordability for municipalities and residents. This is a core part of Burenwerf's identity—it aims to offer renovation services at low cost to ensure broad participation. However, they are mindful of ensuring that fees are sufficient to cover costs without compromising service quality or their mission-driven focus.

Burenwerf faces competition from the Energy Houses, which tend to have higher overhead costs. This competitive dynamic complicates potential collaborations, although successful partnerships do exist when individual organizations are open to working together.

While Burenwerf provides advice on renovations and suggests contractors, they do not engage directly in contracts, allowing them to maintain a supportive role without taking on liability for contractors' performance.

Despite the current business model, Burenwerf is cautious about scaling up operations or adding more staff due to the need to balance affordability with the quality of services. They are wary of overcharging municipalities or individuals, as this could damage their reputation, particularly if the results do not meet expectations. Instead, Burenwerf has positioned itself as a reliable, cost-effective, and mission-driven organization. Any potential for growth is likely to be driven by future funding opportunities and changes in renovation demand.

Replication of Burenwerf's model.

The following elements of Burenwerf's approach could be adapted and implemented by other energy communities in their own context.

Leverage political commitment and funding opportunities: energy communities can capitalize on moments when political commitment to energy renovation is high. Government programs can provide initial funding and support. Communities can stay informed about policy shifts and align their projects with local or national energy and climate goals. Energy communities should also be flexible, adjusting their approach to fit the specific criteria or shifting priorities of local or national funding schemes.

Train the trainer: engaging local volunteers as spokespersons or energy experts creates grassroots support, increasing participation and fostering local ownership of the renovation process.

Use a two-track approach of individual and collective renovations: energy communities can offer step-by-step assistance for individual home renovation, allowing residents to improve their homes at their own pace. At the neighbourhood level, focus is on long-term, comprehensive renovations. This involves close collaboration with local authorities to build trust and ensure that the project is seen as non-commercial and community focused. Active municipal involvement is essential for credibility.

Engage the community: organise participatory sessions where residents discuss broader community aspirations beyond renovation. Energy communities should encourage discussions

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about green spaces, mobility, and energy-sharing solutions, aligning the renovation project with the neighbourhood's long-term vision. Multiple engagement sessions, not just one-off meetings, ensure continuous involvement and build momentum. Energy communities should host frequent sessions to keep citizens engaged and informed. Target neighbourhoods with existing community engagement, as strong social ties can enhance participation and project success.

Organize group purchases to make renovations affordable: by organizing group purchases of insulation or solar panels, energy communities can negotiate lower prices, making renovations more affordable. This approach can motivate more residents to participate by offering tangible financial benefits.

Collaboration with local authorities: building partnerships with local authorities help scale efforts and ensure that local governments remain supportive partners. Ensure clear and consistent communication among all parties, delineating roles and responsibilities. Municipalities often seek to meet local climate and energy goals. However, they may lack the personnel or expertise to implement these initiatives effectively. Collaborating with an energy community allows municipalities to fulfill their responsibilities while outsourcing specialized tasks to professionals. By partnering with a non-commercial entity, municipalities can benefit from cost-effective services that align with their public service goals.

Develop a unique value proposition and storytelling: smaller energy communities offer more customized solutions compared to larger entities. Emphasizing this unique approach can help energy communities differentiate themselves and attract local support. Trust is a key factor in citizen engagement. Energy communities should develop and communicate their unique story, emphasizing transparency and long-term community benefits. Positive experiences from previous projects, endorsements, and success stories can bolster credibility in future initiatives.

Stay adaptive and resilient amidst policy and funding changes: remain vigilant and flexible, ready to shift strategies as new regulations or funding mechanisms emerge. Teaming up with other energy communities to e.g., advocate for stable funding mechanisms could strengthen the collective voice of energy communities.

Monitor impact: regularly report on the number of residents engaged and renovations completed, providing transparency and demonstrating impact to stakeholders.

Information sharing and learning: create a forum or working group for energy communities to share lessons learned, best practices, and challenges faced in renovation projects. Establishing a semi-structured approach could enhance collaboration without losing individual energy community identities.

Addressing challenges in renovation: maintain an intermediary role in guiding participants in contractor selection without taking on liability, ensuring quality while promoting community engagement. Provide municipalities with guidelines on selecting suitable neighbourhoods based on social and demographic factors, enhancing the likelihood of project success. Energy communities may encounter challenges with e.g., protected facades or buildings. Collaborating with specialized contractors to find innovative solutions, can overcome such obstacles.

Role of energy communities in (neighbourhood) renovation activities.

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Energy communities can offer localized, non-commercial solutions that larger entities often overlook. They can play a role in both facilitating individual decision-making and driving collective action, ensuring that energy transitions are both effective and aligned with community needs.

Energy communities can provide customized advice and support for individual homeowners, helping them navigate complex renovation processes. Energy communities can facilitate group purchases of e.g., solar panels and insulation, at reduced costs, making renovations more affordable for individuals.

For neighbourhood-scale renovations, energy communities play a key role in fostering collective action by building trust with residents. They engage with municipalities and residents through participatory workshops to align renovation projects with broader community goals (e.g., green spaces, mobility solutions, energy sharing systems). Energy communities can help residents envision their neighbourhood's future, facilitating projects that not only improve energy efficiency but also address shared aspirations like social cohesion, aesthetic preservation, and mobility solutions. Successful neighbourhood renovations often require close collaboration with municipal governments. Energy communities, through their local presence, can act as intermediaries, ensuring clear communication and mitigating concerns about commercial interests.

Unique selling proposition of Burenwerf (and other energy communities that take up activities in the field of (collective) renovation?).

The renovation activities of the non-profit organization Burenwerf hold significant value compared to commercial companies in the renovation sector (and the Energy Houses). Burenwerf provides community-focused renovation services. Their value lies in their grassroots engagement, flexibility, social inclusiveness, and cost-effectiveness, which positions them as a vital player in the energy renovation landscape, especially for municipalities and regions seeking tailored, inclusive solutions that go beyond the purely transactional nature of commercial services.

Tailor-made approaches and local engagement: Burenwerf offers community-driven renovation solutions tailored to the specific needs of the neighbourhoods they serve. In contrast, commercial companies often provide standardized, one-size-fits-all solutions. This localized approach, combined with citizen engagement (e.g., co-creation sessions and local volunteers acting as trained energy experts), builds stronger ties and trust within the community. This unique proposition gives Burenwerf an edge over commercial entities by addressing local concerns more directly and meaningfully, which is often missed by larger, more generalized service providers.

Citizen empowerment: Burenwerf's reliance on volunteers from the community to act as spokespersons and energy coaches creates a cost-effective, community-centric approach. Commercial entities, driven by profit, lack such grassroots engagement, which limits their ability to create sustained, trust-based relationships in local communities. Burenwerf's "train-the-trainer" model empowers residents to support each other, deepening local involvement in energy renovation projects.

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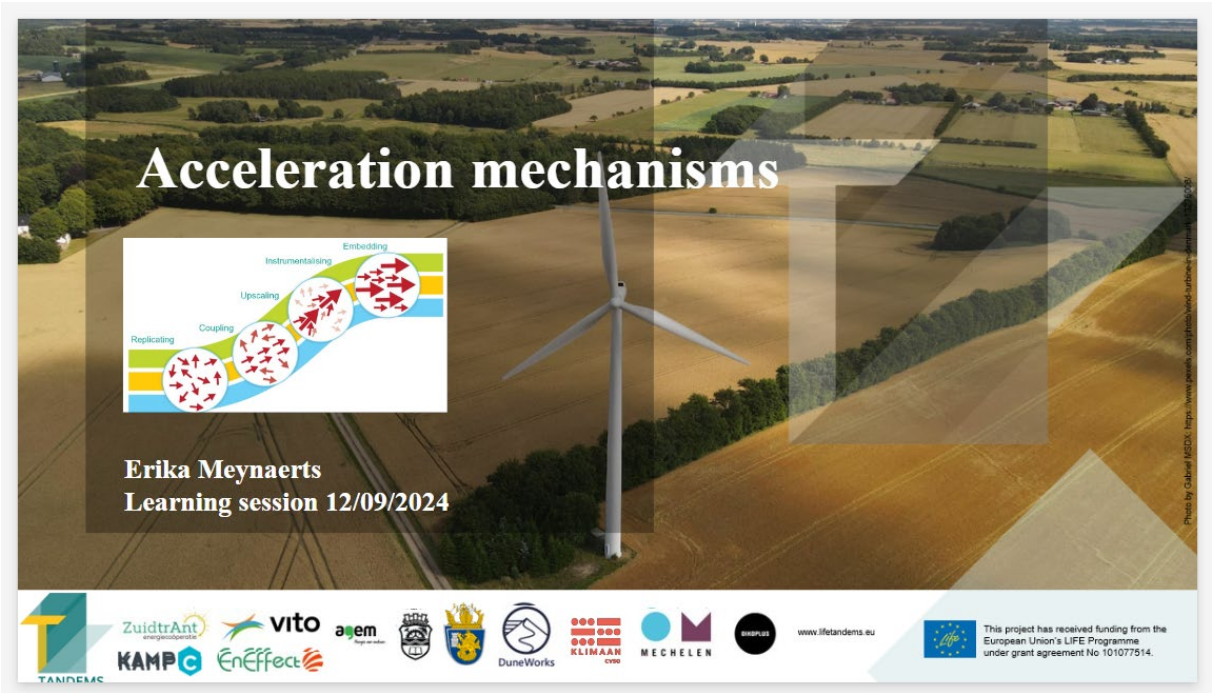
Flexibility and agility: Burenwerf's smaller organizational structure allows for greater flexibility in responding to changes in legislation and market demands. This agility contrasts with the slower, more bureaucratic nature of commercial companies. Commercial entities tend to have more rigid structures due to their larger scale, limiting their ability to adapt quickly to shifting regulatory frameworks or localized needs. Burenwerf, by staying responsive and adaptable, can swiftly adjust their strategies, making them more agile in navigating the evolving renovation landscape.

Social impact and inclusion: Burenwerf's non-profit model enables them to prioritize social impact. Commercial companies, driven by profit, typically prioritize higher-margin projects, potentially overlooking low-income or marginalized groups. Burenwerf's focus on social inclusion, allows them to fill gaps that commercial providers may ignore, particularly in communities where social inclusion is essential for project success.

Sustainability in uncertain funding: despite challenges posed by fluctuating funding mechanisms, Burenwerf's non-profit nature enables them to focus on long-term community benefits rather than short-term financial gains. In contrast, commercial companies may struggle with uncertainty in funding, especially when government subsidies or policies shift.

Holistic approach: Burenwerf does not only offer renovation guidance but also facilitate the implementation of renovation projects, acting as intermediaries between residents and contractors.

10 Annex: presentation on acceleration mechanisms (Erika Meynaerts, VITO)



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FP7 project ARTS

- What?
  - exploring how local transition initiatives contribute to accelerating sustainability transitions
    - transition initiative are actor-networks that start-up, adopt and/or engage with new practices, technologies and experiments that seek to profoundly change established unsustainable routines and perceptions towards more sustainable ones
    - **transition initiatives are by definition contextual:** they respond to the impacts of global sustainability problems in local contexts and they are driven by local actors and networks
- How?
  - conceptualizing five mechanisms representing acceleration dynamics of sustainability transitions

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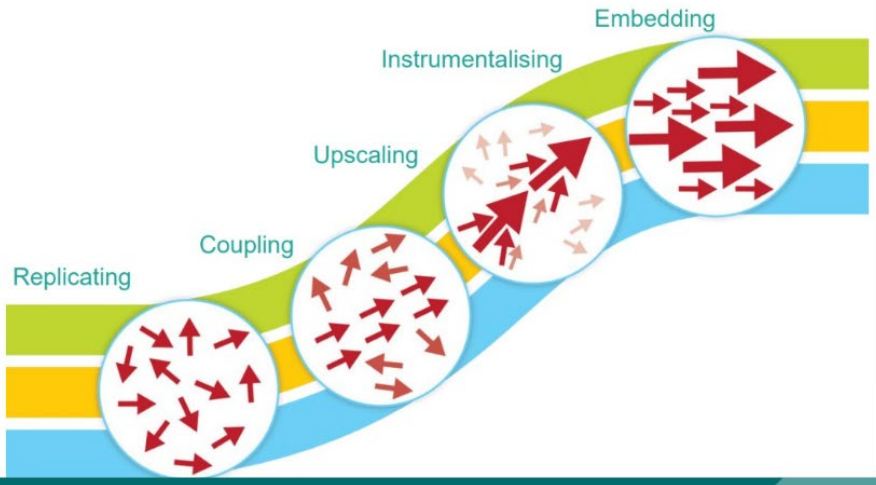
5 MECHANISMS OF ACCELERATION



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Replicating

- Take-up of new ways of thinking, doing and/or organizing of one initiative by another or different actors in order to spread these alternative ways
- Initiatives draw inspiration and transfer concepts and ideas on sustainable alternatives from initiatives outside their location
- Formats can be copy-pasted from one place to another (**'repeating'** and **'imitating'**)
- **Generally, though** they are tailored to local context to be more aligned with place-specific characteristics or conditions (**'emulating'**)
- Also, **'branching'**, when local people committed to a sustainability cause establish a local branch of a national organisation to fuel local action
- Allows for quicker uptake and spread of more sustainable products, practices, services because it can reduce the learning curves when experience is shared

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Coupling or partnering

- Through partnering initiatives can create interrelations with important key partners and thereby open up new opportunities for establishing synergies (e.g., resource sharing) or new channels for diffusion (into organizations without sustainability ambition) of alternative ways of thinking, doing and organizing
- Short or long-term, informal or formal, ad hoc or strategic
- Mostly between initiatives that work in the same domain

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Upscaling

- Growth in number of people involved in the initiative (supporters, members, users)
- Advances exposure and the uptake of alternative ways of doing, thinking and organizing because it adds to increased credibility and legitimacy
- More members allow the initiatives to increase their activities
- Growing beyond a certain threshold helps to become more influential to impact the political agenda but also 'limits to growth'
- Can prompt positive spillover effects, transforming the wider system when sustainability aspects spread to other areas of the value chain
- By implementing well-considered strategies but also organically enfolding growth

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Instrumentalising

- Increase the pace of positive change by seizing relevant windows of opportunity at local, regional, national or international governance levels
- Tap into and capitalize on external trends and (funding) opportunities to support new ways of thinking, doing and organizing locally
- "Navigate a landscape of opportunities and sail the waves of change"
- Encompasses financial resources but also access to knowledge, skills and networks
- Vital role of community builders/district managers in building partnerships: engaged citizens → community builders/district managers → city → Province/Flanders → EU
  - give guidance, advice and support
  - promote proximity between governance levels
  - connect actors to each other
  - promote Public-Civic collaborations

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Embedding

- New ways of thinking, doing and organizing get integrated in city-regional governance patterns
- More sustainable alternatives get ingrained in routines, habits and customs of citizens and political and institutional structures (incl. rules, legislation, policy and processes)


Intentieverklaring
2012
VELT afdeling GENK EN OMSTREKEN
is trots om heden de samenwerking met
Volkstuinen Zwartberg
te kunnen officialiseren voor wat betreft het terugdringen en zelfs het totale verbod op het gebruik van
pesti-, herbi-, fungi- en insecticiden
—ZONDER IS GEZONDER—
Opgesteld te Genk op 1 oktober 2012

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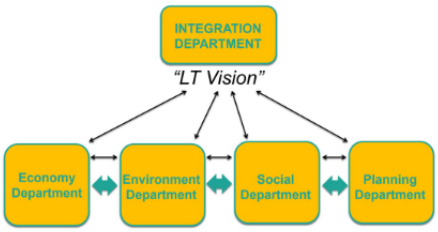
How can governments fuel acceleration dynamics?

- Set up public- civic partnerships to bring together different skills
  - government: coordinating & organising skills
  - volunteers: teaching & doing competences
- Provide space and take away barriers: e.g. 'rule free zones' for experimentation
- Invest in institutional innovation and start with internal learning environment e.g. 'systems thinking', 'transition thinking', 'social innovation', …
- Invest in integration <> silos



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Annex 7: Result-oriented KPIs meetings spanning from Q4|2024 through to Q1|2025

1 Participants

Table 17: List of participants

Organisation	Name	Organisation	Name
Kamp C	Maro Saridaki	**ZuidtrAnt**	Sophie Loots
Kamp C	Jet Groen	**ZuidtrAnt**	Liesbet Veulemans
AGEM	Justin Pagden	**Klimaan**	Steven Laurijssen
AGEM	Maroeska Boots	**Mechelen**	Bart De Bruyne
Eneffect	Stanislav Andreev	**Gabrovo**	Todor Popov
Eneffect	Teodora Stanisheva	**Burgas**	Ivalyo Trendafilov
VITO	Erik Laes	**Oikoplus**	Michael Anranter
VITO	Erika Meynaerts	**Oikoplus**	Thomas Stollenwerk

2 Aim

During Q4 of 2024 and Q1 of 2025, a series of meetings were organised by Kamp C, combining consortium-wide KPIs status meetings (physical or online), as well as 1-on-1 meetings between Kamp C and individual partners aimed at fine-tuning the process of collecting KPI results in a clear and workable manner for all partners. Kamp C has simplified the KPI tool and provided clarity on numbers/targets to be achieved to better assess and track the progress. It is now clear how partners can assess the status of the pilots and update the KPIs in the simplified KPI excel. In addition, during the 5th Tandems consortium meeting, we had the opportunity to pose questions to our CINEA project officer Stamatis Sivitos (see separate presentation print-screens below). Minutes from this Q&A session are included in the general discussion points. The various sessions took place during Q4|2024 and Q1|2025:

Q4 | 2024

- Series of targeted 1-on-1 meetings between Kamp C and individual partners (online between 8th-10th October 2024)
- Pre-consortium KPIs status meeting, Kamp C (online 10th October 2024)
- KPIs status meeting with CINEA project officer Stamatis Sivitos (5th Consortium meeting in Gabrovo, 17th October 2024)

Q1 | 2025

- Series of targeted 1-on-1 meetings between Kamp C and individual partners (online 14th, 15th and 21st January 2025)
- Consortium-wide KPIs status meeting (online 31st January 2025)
- Series of targeted 1-on-1 calls between Kamp C and individual partners (online 24th - 28th March 2025)

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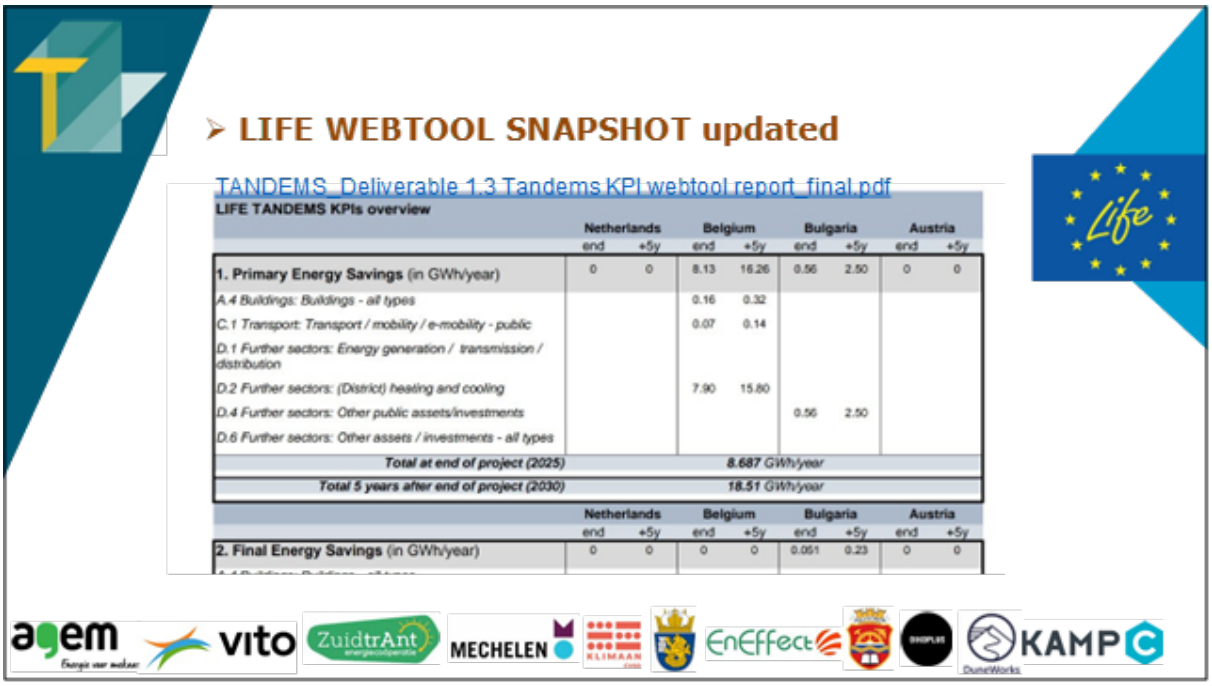
3 Annex: KPIs Status and Q&A Session Presentation, 5th consortium meeting in Gabrovo (Jet Groen, Kamp C) Session held with CINEA project officer Stamatis Sivitos



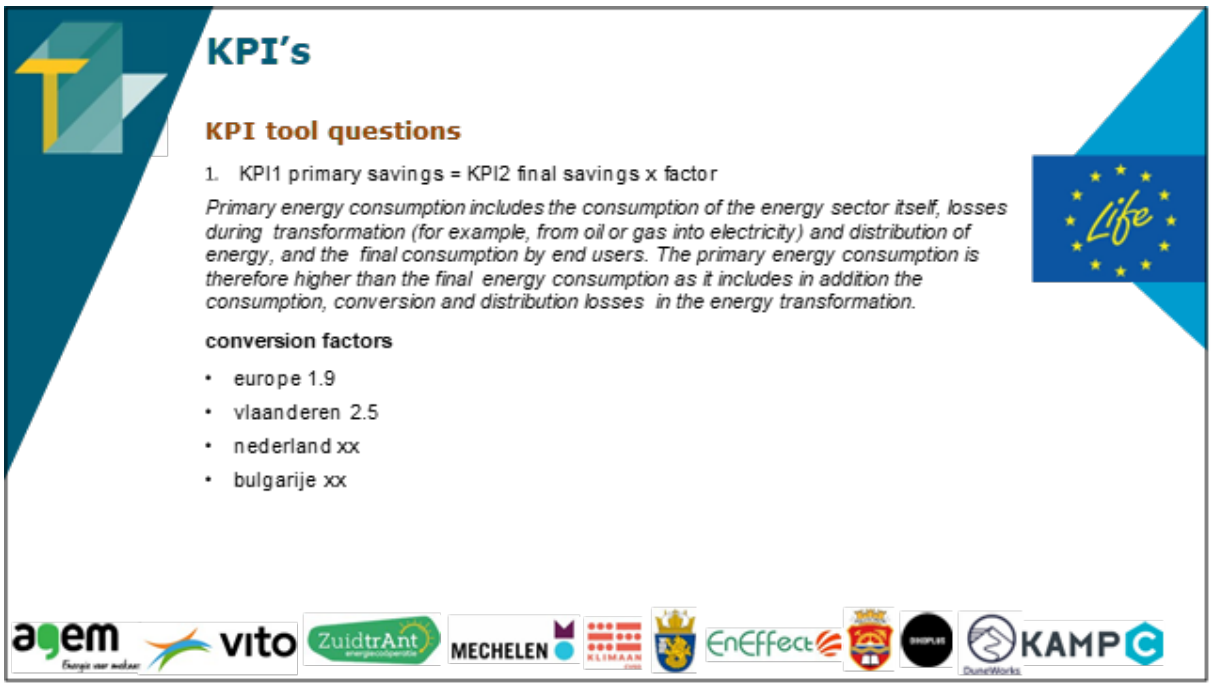
➢ LIFE WEBTOOL SNAPSHOT updated

TANDEMS_Deliverable 1.3 Tandems KPI webtool report_final.pdf

LIFE TANDEMS KPIs overview

	Netherlands		Belgium		Bulgaria		Austria	
	end	+5y	end	+5y	end	+5y	end	+5y
1. Primary Energy Savings (in GWh/year)	0	0	8.13	16.26	0.56	2.50	0	0
A.4 Buildings: Buildings - all types			0.16	0.32				
C.1 Transport: Transport / mobility / e-mobility - public			0.07	0.14				
D.1 Further sectors: Energy generation / transmission / distribution								
D.2 Further sectors: (District) heating and cooling			7.90	15.80				
D.4 Further sectors: Other public assets/investments					0.56	2.50		
D.6 Further sectors: Other assets / investments - all types								
Total at end of project (2025)			*8.687 GWh/year*					
Total 5 years after end of project (2030)			*18.51 GWh/year*					

	Netherlands		Belgium		Bulgaria		Austria	
	end	+5y	end	+5y	end	+5y	end	+5y
2. Final Energy Savings (in GWh/year)	0	0	0	0	0.051	0.23	0	0



KPI's

KPI tool questions

1. KPI1 primary savings = KPI2 final savings x factor

Primary energy consumption includes the consumption of the energy sector itself, losses during transformation (for example, from oil or gas into electricity) and distribution of energy, and the final consumption by end users. The primary energy consumption is therefore higher than the final energy consumption as it includes in addition the consumption, conversion and distribution losses in the energy transformation.

conversion factors

- europe 1.9
- vlaanderen 2.5
- nederland xx
- bulgarije xx

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KPI's

KPI tool questions

2. **KPI 3 Renewable energy generation**
   - D1 Big projects – solar and wind (AGEM) projects > distribution
   - A1 small projects – PV panels on the roof

3. KPI 4 GHG emissions (intCO2eq/year) → We will use the numbers

gCO2e/kW	2021	150	2022 Belgium 154 (138)
	2021	339	2022 The Nederlands 310
	2021	xxx	2022 Bulgarian 455

KPI's

4. In which category does the project belong: How we will count?
   - Directly achieved – example | 8 appartement buildings in Burgas

.	« End value » includes:	« Beyond 5 years » value includes:
Directly achieved impacts	➢ Impacts directly achieved by the project activity and within the project duration.	➢ Impacts achieved as a result of the project activity until 5 years after the project end.
Directly triggered impacts	➢ Impacts triggered within the project duration but accruing only after project end.	➢ Impacts triggered inside or outside the project duration and accruing until 5 years after the project end.
Indirect Impacts	➢ Impacts triggered, encouraged + replicated by the project outside the immediate scope and target area of the project due to activities within the project duration.	➢ Impacts triggered, encouraged + replicated by the project outside the immediate scope and target area of the project until 5 years after the project end.

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KPI's

5. KPI 5 Investments

Grand agreement we have put these under:

D6 Other assets / investments - all types (to be used if breakdown is nost feasible)

Now we will make a distinction under which category

KPI 5							
Investments in sustainable energy (in EUR)							
Total Investments (EUR)	A4 Buildings all types	C1 Transport/e-mobility	D1 Energy generation/ transmission/ distribution	D.2 (District) heating and cooling	D.4 Other public assets / investments	D.6 Other assets / investments - all types (to be used if breakdown is	2030 (5 years on)
200.000 €						200.000 €	1.000.000 €
7.800.000 €	7.500.000 €	0 €	300.000 €	0 €	0 €	0 €	
			80.000 €				
	7.500.000 €						

KPI's

5. KPI 6 Legislation | Policy Descriptor + KPI 7 Market introduction

See example AGEM

TANDEMS KPI Tracker			KPI 6	KPI 7
			Legislation & Policy Descriptor	Market introduction
Country		Area / Partner	No. Documents	No. Products/processes/methods
				guide,1 energysharing guide , 2 business models
Netherland		TOTAL	1	
		okt/24	4	
3		AGEM	1 legislation	
		Agem organisatie		
		Naoberwind (in development)		
		Zelhem | Biozon	sharing based on BioZon model	Introduction of cost price model
		Twigraven (in development)		
		AGE (organisatie - zelflevering)		
		Zonnepark Braamt		

Justin Pagden:
Energiedelen in de wet
Wind beleid berkelland
Verordening lokaal

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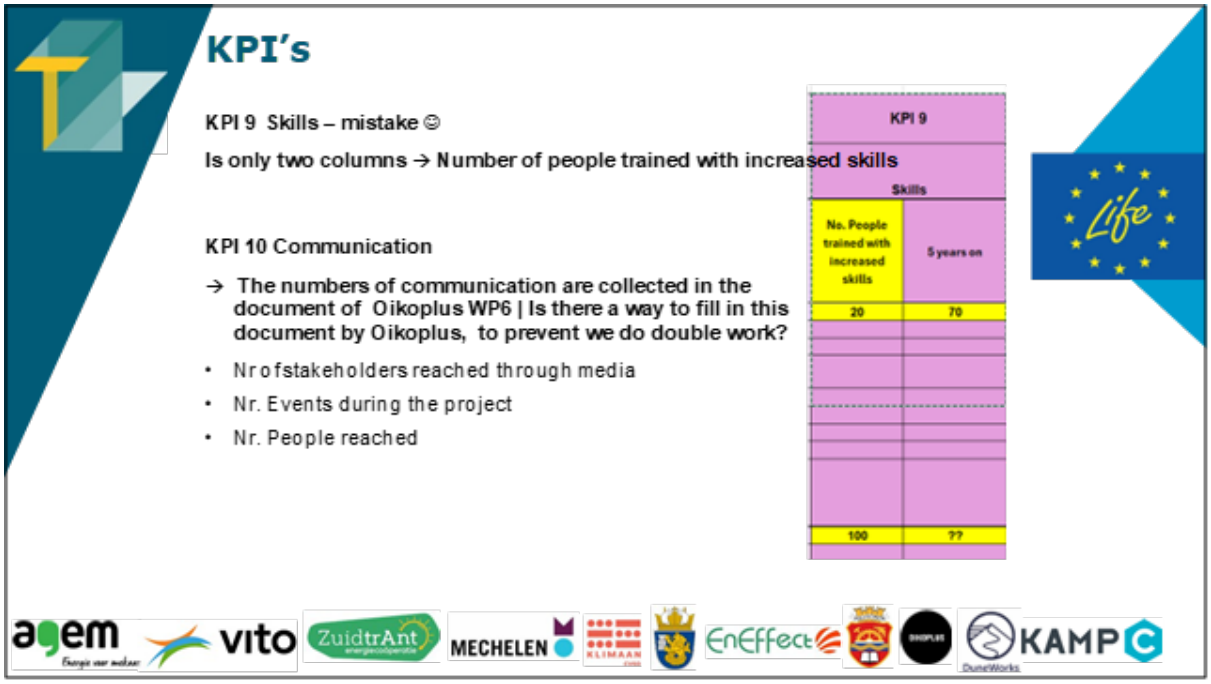

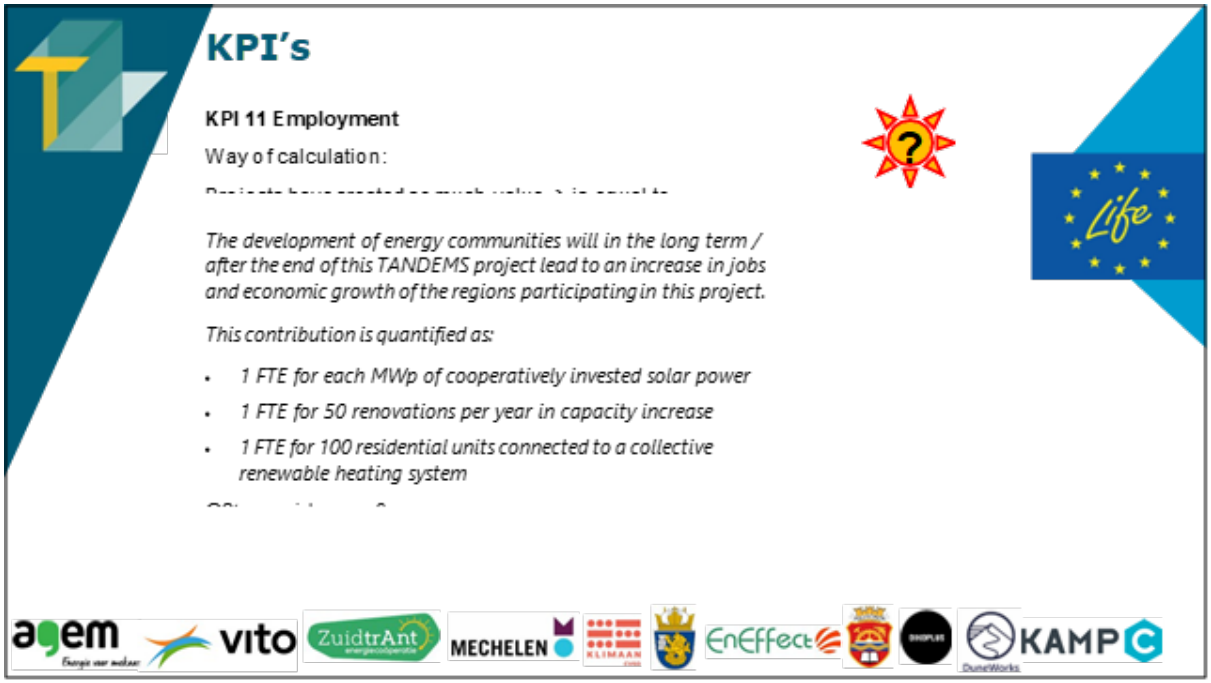

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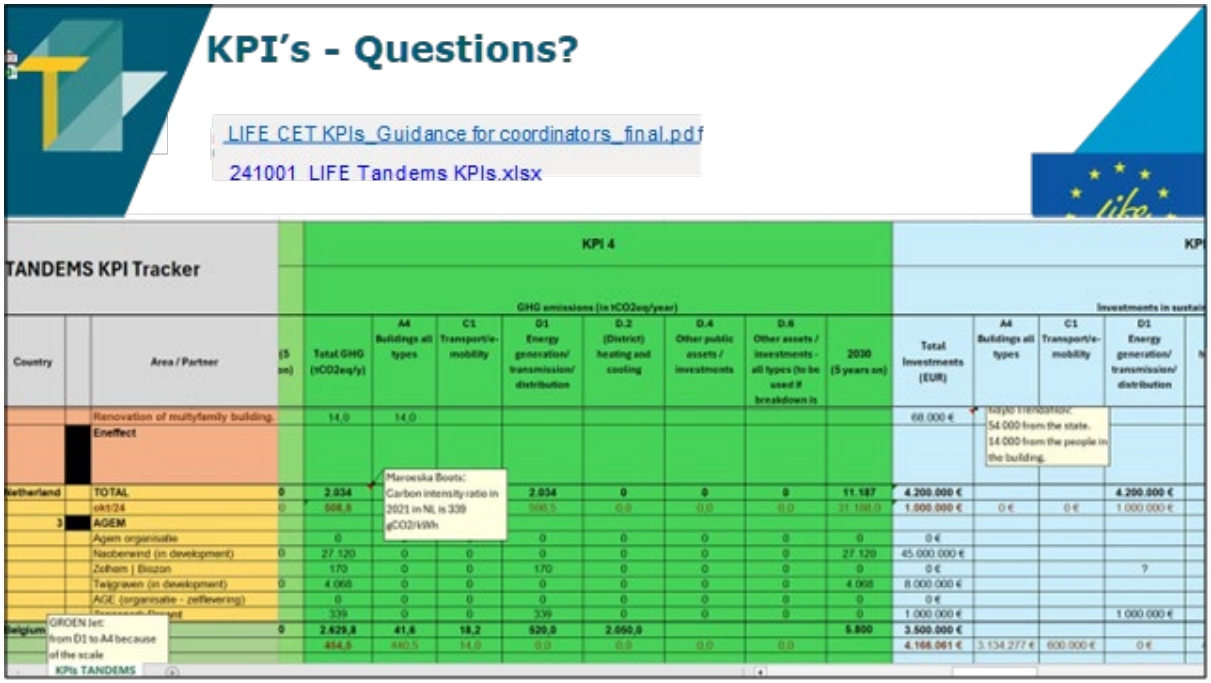

4 Discussion

Before the 1-on-1 meetings 'Kamp C | partner', the partners are asked to fill in the KPI-tool. 241001_LIFE Tandems KPIs.xlsx The meetings themselves start with sharing the KPI-tool and explaining the different KPIs and how they are calculated, including the connection needed with the LIFE KPI Webtool and KPI definitions and requirements.

- which KPIs are not (yet) filled in

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- what is the status of the pilot projects & challenges faced
- what remains unclear

Table 18: List of main discussion points

<table>
<tr><th>Nr.</th><th>Main Discussion Points</th></tr>
<tr><td>1.</td><td>Directly achieved, directly triggered
Two columns (E and F) titled ‘directly achieved’ and ‘directly triggered’ have been added to the KPI tool, simplifying the choice per pilot line.
Examples:
• In NL wind project Noaberwind is in preparation, but it is unsure when it will be realized. Because of this, KPI 3 and 4 cannot be completed for now, but can be completed for 2030 (expectation). However, the investments for the developments and the members of the energy cooperative can be included in the ‘by end of project’ targets. (directly triggered)
• In BG regarding the renovation of the apartment blocks, contracts have been signed and are being implemented during the project. (directly achieved)
• In BE the heat networks are under development, but implementation is expected after the end of the project, as is the case with Noaberwind NL.(directly triggered)
Table 3: Schematic guidance for calculating impacts (source: CINEA)
<table><tr><th></th><th>« End value » includes:</th><th>« Beyond 5 years » value includes:</th></tr><tr><td>Directly achieved impacts</td><td>➢ Impacts directly achieved by the project activity and within the project duration.</td><td>➢ Impacts achieved as a result of the project activity until 5 years after the project end.</td></tr><tr><td>Directly triggered impacts</td><td>➢ Impacts triggered within the project duration but accruing only after project end.</td><td>➢ Impacts triggered inside or outside the project duration and accruing until 5 years after the project end.</td></tr><tr><td>Indirect Impacts</td><td>➢ Impacts triggered, encouraged + replicated by the project outside the immediate scope and target area of the project due to activities within the project duration.</td><td>➢ Impacts triggered, encouraged + replicated by the project outside the immediate scope and target area of the project until 5 years after the project end.</td></tr></table></td></tr>
<tr><td>2.</td><td>Indicators clarification
• Indicators KPI 1-4 are annual savings/generations.
• Indicators KPI 5-11 are cumulative from beginning of project until projects end.
• Indicators KPI 12,13 and 14 are call-specific KPIs / results of the project. We review these KPIs separately from the KPI 1-11, to prevent confusion.</td></tr>
<tr><td>3.</td><td>How are KPI 1 and KPI 2 linked to each other?
KPI1 primary savings = KPI2 final savings x factor
Primary energy consumption includes the consumption of the energy sector itself, losses during transformation (for example, from oil or gas into electricity) and distribution of energy, and the final consumption by end users. The primary energy consumption is therefore higher than the final energy consumption as it includes in addition the consumption, conversion and distribution losses in the energy transformation.</td></tr>
</table>

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	Example: • BG the renovation of the apartment blocks. It depends on the energy source of the apartments and whether fossil fuels have been replaced by electricity. Example: PEF for electricity from non-renewable sources is 2,3 • BE renovation of the houses is only primary energy, since here there is only reduction of heat demand through insulation • BE shared EV is the PEF conversion factor is 2,5.
4.	**How are the KPI 1 and KPI 2 linked to each other for heat networks and how do we to calculate the primary energy?** **Action:** ZuidtrAnt en Klimaan will examine which calculation method should be applied
5.	**For KPI 3 GHG emissions (in tCO2eq/year) which is the national emission factor?** Important! Need to calculation with the national emission factor of 2021 BE 2021 150 NL 2021 339 BG 2021 486 Emission factor for electricity - 0,486 tCO2/MW *GHG (from SHINE application):* ***Expected Impact 10:*** *Reduction of greenhouse gases emissions The 2023 average carbon intensity of electricity generation per country15 was used to calculate the GHG savings at project end and plus 5 years, based on the energy savings and RES triggered by SHINE in each pilot, ambassador and replicating area. This varies significantly by country, for example, rising to 662gCO2/KWh in Poland to only 138gCO2/KWh in Belgium. SHINE's impacts in this area will contribute and support the EU's Fit for 55 target and the EU Green Deal.* ***Increased carbon savings*** *According to the European Environment Agency (Nov 2021), 'although GHG intensity of electricity production differs from one Member State to the other, generating 1 kilowatt hour emits approximately* ***275 gr of CO2 on average****, at European level' this has been used as the basis for the carbon calculations. Estimated annual CO2 savings are a minimum of 7106 tonnes per year.*
6.	**KPI 5 Investments in sustainable energy:** Partners are asked to indicate the distinction: A all kind of buildings or B ... etc...
7.	**KPI 6 Policy and KPI 7 Market Introduction:** These KPIs are related to the project deliverables.
8.	**KPI 8 Implementing sites:** Buildings or dwellings being renovated due to the project - in this case each building unit should count as 1 site --> this means that 1 renovated house is 1 implementing site. This explains the high number of row # 53 | Mechelen and surroundings | Improving Zonnewijzer.
9.	**KPI 9 Skills and 10 Communication:** Reference to the communication document prepared by Oikoplus, in which the partners note their activities. TANDEMS PARTNER event REPORTING.xlsx, where a classification has been made into KPI9 skills and KPI10 communication. KPI 10 Communication: This indicator addresses two aspects, the targeted dissemination of project results to stakeholders during the course of the project, which is necessary to deliver the project result, and the wider communication of the project results to a broader audience. **Action:** Do we need two columns in the communications column KPI 10?

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Subdivide into a column A dissemination of project results to stakeholders during the course of the project and column B wider communication of the project results to a broader audience. Were do we put the numbers of the Tandems website, social media?

Decision Kamp C / Oikoplus: Yes, we need separate columns. Tandems' Website and Socials under A. Partners' Website and Socials under B.

10. **KPI 11 Employment:**

Calculation 1: (Klimaan)
The development of energy communities will lead, in the long term / after the end of this TANDEMS project, to an increase in jobs and economic growth of the regions participating in this project.

This contribution could be quantified as:

- 1 FTE for each MWp of cooperatively invested solar power
- 1 FTE for 50 renovations per year in capacity increase
- 1 FTE for 100 residential units connected to a collective renewable heating system

Calculation 2 (AGEM)

- 1 FTE = (Production/year x costprice) / 60k

Calculation 3: (example from sister project LIFE LOOP & collaborative project SHINE)

Taking the promised targets in the GA:

- 12-18 FTE for every million invested in energy refurbishment Job creation
  This means for Tandems: 14€ million investments means * 12 = 168 FTE
- 2 FTE for each 10 MWp of cooperatively invested solar power
  This means for Tandems: 0.8GW = 800MW = 80*10MW= 80 FTE

Source: IEA estimates that 12-18 local jobs are created for every million invested in energy refurbishment. With the 9 million triggered by the programme this will support at least 108 jobs. Estimates for job created per MW of solar vary, a conservative estimate of 2 per MW10 has been used, resulting in at least 24 jobs in the programme. Total job creation for LIFE LOOP is therefore estimated at 134.

https://www.ippr.org/media-office/plan-for-a-retrofit-revolution-how-more-than-two-million-new-jobs-would-boost-levelling-up-and-also-tackle-energy-crisis

https://link.springer.com/article/10.1007/s11625-023-01440-y

Calculation 4: (Eneffect)

- 13-28 FTE for every million invested in energy refurbishment Job creation

SOURCE No.	COUNTRY/ REGION	YEAR	TYPE OF IMPACT	FACT
2	Global	2019	Jobs	Overall job creation ranges between **13 and 28 jobs** (direct, indirect, induced) per €1 million invested.

Source: C40 Cities (2019). "The multiple benefits of deep retrofits: A toolkit for cities"

Extra information:

- Renewable energy and jobs: Annual review 2023
- World Energy Employment 2023 – Analysis - IEA

Action: Kamp C will ask CINEA's advice for the best calculation method.

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11.	**KPI 12, 13 and 14 are the results of the project and need to be tracked separately from the KPIs 1-11.** KPI 12 is the Number of citizen initiatives supported and/or created as a result of the project. This includes the realised projects named in KPI 8. KPI 13 is the Number of members of the energy cooperative who have joined since the start of the Tandems project. KPI 14 is the Number of local and regional authorities committed to replicate best practice experiences. Important! 'Committed' must be proven/provable by a charter or agreement...
12.	**Source Documents:** The following documents, together with the Grant Agreement, provide more background information regarding the KPI target results for each partner and are important as sources. LIFE CET KPIs_Guidance for coordinators_final.pdf LIFE-2021-CET-ENERCOM Scope A (Part B) (LIFE)_final.docx (see page 32 Impacts and onwards)

5 Conclusions

Table 19: List of main conclusions

Nr.	Conclusions
1.	**TANDEMS project progress:** The Tandems project is progressing well. We have established a good overview and are eye that the KPIs are being achieved. There are two issues, however, they are reasonable and can be explained. The final target is/will be reached as another partner compensates with higher targets than expected.
2.	**Long-term development in 3 pilots:** Two Heat-networks projects in BE and a Wind development in NL are realisations that require long preparation. Participation and the development phase are progressing well; however, these projects will be realised after the completion of the Tandems project. KPI 1, which was at risk, will be achieved due to the increased performance of the renovation of apartment buildings in Gabrovo and Burgas.
3.	**KPI-tracking process:** Each partner must update the "KPI & output" table every two months (status update) and every six months (status and progress report). Key focus areas are the 11 project-level indicators, which partners need to update before each bi-monthly meeting.

Table 20: List of KPI's and outputs

KPI / Output	Responsible partner(s)	Status	Description of progress & corrective actions
KPI 1 and KPI 2 heat networks	Mechelen ZuidtrAnt Klimaan	red	Progress ongoing. Heat networks have a long preparation phase.
KPI 3	AGEM	red	Progress ongoing. Wind development has a long preparation phase.

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KPI 1-11	All project partners	orange/ green	Project targets on track
KPI 12, 13, 14	All project partners	orange	Project progress on track

6 Actions

The following action points will help ensure that the TANDEMS project stays on track to meet its KPI targets and that all financial and reporting guidelines are followed correctly.

Table 21: List of actions

Nr.	Action	Responsible partner(s)	Linked action	Deadline	Follow-up
1.	**Update the KPI Table:** ➢ Ensure that the 241001_LIFE Tandems KPIs.xlsx file is updated. ➢ Fill in the white boxes and colour them when done.	All partners		Before next KPI meeting	ongoing
2.	**Update the KPI 9 and 10:** ➢ Ensure that the TANDEMS PARTNER event REPORTING.xlsx is updated.	All partners		Before next KPI meeting	ongoing
3.	**Action:** Calculate KPI 1 and KPI 2: ZuidtrAnt and Klimaan will examine which calculation method should be applied for heat networks.	ZuidtrAnt and Klimaan		Before next KPI meeting	ongoing
4.	**Action:** Do we need two columns in the communications column KPI 10?	Kamp C & Oikoplus		Before next KPI meeting	ongoing
5.	**Action**: KPI 11 Employment Kamp C will ask CINEA's advice for the best calculation method out of the 3 gathered.	Kamp C		Before next KPI meeting	ongoing
3.	**Clarify causality for KPIs 1-5:** ➢ Provide clear explanations for the causality between financial investments and the achieved outcomes, such as energy savings and renewable energy generation. ➢ This includes explaining assumptions and the allocation of impacts across countries or sectors.	All partners		Final KPI reporting in M36	ongoing

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Annex 8: Reflexive learning session – Gabrovo (online, 6 February 2025)

1 Participants

Table 22: List of participants

Organisation	Name
VITO	Joeri Naus
VITO	Erika Meynaerts
VITO	Katharina Biely
ZuidtrAnt	Sophie Loots
Duneworks	Sylvia Breukers
Agem	Maroeska Boots
Kamp C	Jet Groen
Kamp C	Maro Saridaki
Klimaan	Steven Laurijssen
Gabrovo	Todor Popov
Eneffect	Stanislav Andreev
Eneffect	Teodora Staénisheva

2 Aim

The aim of the reflexive learning session is to share lessons learnt from the TANDEMS' pilot projects with the consortium partners, deepen insights and define actions. During the learning session the following steps are taken:

1. The action manager introduces the pilot project and explains the project's context (local, regional, national) to the participants.
2. The action manager explicates 3 to 5 key moments, i.e., events that really changed the course or dynamics of the project in a positive and/or negative way. For each event the action manager explains what happened (event), what the outcomes were (after) and what conditions and factors were important for making this happen (before). The participants take notes while listening (e.g., ideas, questions, feelings, associations).
3. The participants process their thoughts and write down their most important question(s) and their most important insight(s).
4. The participants share their questions with the action manager. The facilitator guides the discussion and uses the systemic iceberg to capture additional insights.
5. The participants share their insights. The facilitator guides the discussion and uses the systemic iceberg to capture additional insights.
6. The participants identify the most relevant "eye-openers" that they can benefit from in their own contexts.
7. The participants translate the learnings into actions (i.e., what changes or interventions are needed to strengthen the value network of the pilot project(s), to catalyse just energy

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projects at national or regional level, to facilitate wider systemic change ate national or EU level?)

8. The action manager reflects on what he/she has learned for their pilot project (i.e., what are the key lessons, what could/should be changed as a result?)

3 Looking back to previous learning sessions: 3 distinct forms of solidarity

Joeri Naus (VITO) started the discussion by prompting participants to recall key takeaways from the first three learning sessions. Maro Saridaki (Kamp C) indicated that the most memorable aspects were the “eye-opener” moments—times when even familiar discussions led to new realizations and actionable insights. She emphasized that these learnings had a lasting impact.

Next, Erika Meynaerts (VITO) outlined three forms of solidarity in community energy projects:

- Altruism: a form of solidarity where individuals or groups support energy-vulnerable households without expecting anything in return. This could include financial subsidies, donations to cover energy bills, or volunteer work to improve energy efficiency in homes.
- Recognition: a more interactive approach where energy-vulnerable households collaborate with community groups, policymakers, or energy communities to co-create solutions. Examples include participatory workshops, shared decision-making in renewable energy projects, or involving organizations that represent energy-poor households in policymaking.
- Ownership: the most engaged form of solidarity, where energy-vulnerable households have a direct stake in energy projects. They may become energy prosumers (both consuming and producing energy), co-own local renewable energy projects, or acquire skills to manage their energy needs independently.

Erika Meynaerts emphasized that these solidarity models can help make community energy projects more inclusive, with varying levels of involvement from energy-poor households.

4 Learning objectives

Participants were asked to share their learning objectives with the presenter (i.e., action manager) ahead of the presentation, allowing the presenter to better tailor the content to focus on the context and key events. Also, both the learning objectives and any questions raised during the session (see section 7) can be utilized by the action manager to tailor and focus the guidance document for the pilots, as part of WP3.

- Gaining more Insights into business model, contracting, steps taken, lessons learnt (Klimaan)
- Insights into further steps and ambition for engagement of vulnerable groups (Kamp C)
- Who forms the energy community? Who drives the community in the multi-family buildings initiative? (Kamp C)
- Have you seen any changes, in opinion about energy communities, over the duration of the project? (Kamp C)
- You are working with key partners. Have you established a JET team? (Kamp C)
- Understand “solidarity” in relation to the developments in Gabrovo (Duneworks)

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The learning objectives serve as the basis for identifying lessons learned in Section 9. The learning objectives that were not addressed during the session are reformulated into actionable items in the action table presented in Section 8, if possible and relevant.

5 Introduction of pilot project: the story of Gabrovo (Todor Popov)

In 2022, coal was the dominant energy source in Bulgaria, and renewable energy was not widespread. Trust between citizens and the government was low, influenced by past experiences with agricultural cooperatives. Additionally, the Renewable Energy Directive (RED) had not been transposed into national law. However, Gabrovo was a leader in energy efficiency, particularly in street lighting, public building renovations and electric public transport.

By September 2023, discussions around energy communities progressed, focusing on technical, financial, and legal aspects. Creating a viable business model proved difficult, particularly in finding suitable land and determining who would consume the electricity produced. The market structure also posed challenges, as household electricity prices were regulated, making it less appealing to buy energy from a liberalized market. The biggest hurdle was the legal framework, with the consortium agreement emerging as the most suitable model. In October 2023, Bulgaria transposed RED with minimal legislative changes.

In November 2023, a communication strategy was implemented. Initially, mass media like national radio and publications from EnEffect helped spread awareness about the energy community. As more details became available, seminars and webinars engaged interested stakeholders. After the City Councils decision (an all the details were known), face-to-face meetings with citizens were organized. The energy community planned for 50% of the produced energy to be consumed on-site and 50% to be shared with municipal buildings (at a price of €0.12).

The total budget needed for the PV installation was €80,000. The first call for capital targeted Gabrovo citizens and SMEs, while the second call expanded nationally to secure funding. In January 2024 the necessary capital was raised, followed by the installation of PV panels. The installed capacity of the PV installation is 100 kWp, with expected annual production of 113 MWh.

The community has 73 members, including 39 men, 28 women, five SMEs, and two institutions (including the municipality). Despite no selection process, a level of gender balance is achieved. The municipality contributes land and expertise, while citizens and SMEs provided capital, earning profit from their shares. The energy community was established with a fixed duration of 10 years. The fixed 10-year duration of the energy community was seen as a cautious approach, partly due to involvement of the municipality.

In March 2024, the first (hybrid) meeting with the members of the energy community took place. Most members joined in person, some participated online.

Between April and September 2024, the focus was on on-site consumption, and from September 2024 onward, energy was delivered to the grid. 50% of the energy produced was fed into the grid and distributed to administrative buildings and sports facilities through a supplier. In October 2024, 27% of the energy consumed in an administrative building and 4% in a sports complex came from the energy community, ensuring a supply of renewable energy.

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6 Presentation of key events

Key moment 1: completing technical and financial analysis (September 2023)

Gabrovo had already positioned itself as a sustainability leader in Bulgaria, earning recognition such as the Green Leaf Award. The municipality had an active community and strong political backing from the mayor, which provided crucial momentum. However, a significant challenge was the lack of legal contract templates for energy communities, meaning the initiative had to be built from scratch without a clear regulatory framework. [frontrunner, public support, political support]

Despite the legal uncertainties, the team pushed forward with in-depth technical and financial analyses, laying the groundwork for the energy community. A key milestone was the development of a contract template, essential for structuring the initiative. This effort was supported by resources from the TANDEMS project, allowing for a concrete model to be presented to potential members. This milestone provided confidence to all involved, proving that, despite the regulatory gaps, a structured approach was possible. With a clear model in place, communication with stakeholders became much more effective.

Key moment 2: call for capital (November 2023)

In November 2023, Gabrovo published Bulgaria's first-ever public invitation for citizens and businesses to join an energy community. Since this was a pioneering initiative in Bulgaria, there was no precedent for how to formally invite members to join an energy community. However, Gabrovo and EnEffect had strong communication channels at its disposal. As a member of the Municipal Energy Efficiency Network (EcoEnergy), the municipality could leverage this platform. The call for capital was divided into two phases: the first, open until 22 December 2023 was reserved for Gabrovo residents, while the second phase, running until 24 January 2024, was open to participants from across the country. [existing network]

The response exceeded expectations. While there were initial concerns about securing the necessary €80,000 investment, the structured approach and clear communication reassured potential members. Within two months, the funding goal was met, proving that people believed in the project. [well-defined vision; transparency]

Key moment 3: successful fundraising (January 2024)

By January 2024, the required funds were successfully raised and transferred to the municipality's account, marking a major achievement for the project. A total of 73 participants joined, including 31 Gabrovo residents and six legal entities, demonstrating significant interest from both individuals and organizations. The successful fundraising effort reinforced confidence in the project and validated the community energy model. By setting an affordable minimum contribution (€250), the initiative ensured inclusivity, allowing lower-income households to take part. This key moment confirmed that the energy community was not just an idea but a tangible, viable reality, creating momentum for the next phases of implementation.

Key moment 4: first meeting of energy community members (15/03/2024)

On 15th March 2024, the first official meeting of the energy community members was held, with approximately 30-40 people attending in person and the rest joining online. The option for

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a hybrid meeting format ensured that both in-person and remote attendees could engage, overcoming geographical barriers and increasing accessibility. This was an important moment, as many of the participants were new faces. Gabrovo and EnEffect presented the progress, explaining how the funds would be used, and clarifying the technical, organizational, and legal details of the energy community. The meeting was an overwhelming success. The participants were enthusiastic, engaging in conversations not only about the current steps but also about future community initiatives and growth. The positive feedback and energy from the meeting reinforced the belief that the project was on the right track.

Key moment 5: PV installation connected to the grid (13/09/2024)

On 13th September 2024, after months of difficult negotiations with the distribution grid operator, the energy installation was finally connected to the grid. Although the energy distribution company did not initially grasp the significance of the energy community model, the project pressed on, ultimately achieving full operation. Additionally, the contract with the energy trader was finalized, ensuring that the excess energy produced by the installation would be distributed to other municipal sites. The successful connection to the grid was a significant achievement. The community's members were highly motivated, feeling more confident in their participation and excited about the future development of the initiative. The stage was set for additional energy communities to follow, with the hope of continuing to expand and establish more pilot projects within the timeframe of the TANDEMS project.

7 Q&A

Question: Are the two energy communities in Gabrovo and Burgas exemplar of a new narrative (storyline) that addresses social and cooperative values – and perhaps also solidarity?

The energy communities in Gabrovo and Burgas clearly embody a new narrative of cooperation, social values, and solidarity. While initially, there was scepticism due to the historical memory of old cooperative models, especially those in agriculture, there are clear signs that these initiatives are helping to reshape attitudes towards collective action. Participants in these energy communities, even when faced with challenges, remain optimistic and focused on finding solutions together. This collective mindset demonstrates that working together on energy projects can be both beneficial and practical.

The structure of these communities also played a key role in overcoming past scepticism. Unlike traditional cooperatives, where individuals are often fully invested in a collective capital, the energy communities focus solely on shared ownership of the energy installation, such as the photovoltaic system. This model provides a more approachable form of cooperation, allowing participants to collaborate on a specific, tangible goal without being deeply involved in broader, more complex financial responsibilities. The clear focus on the energy project itself, rather than a more extensive collective system, helped to ease concerns.

While it may not be realistic to expect a complete shift in mindset overnight, these energy communities have made significant strides in demonstrating the value of cooperation. By showing that collective action can work in a manageable, defined context, they are helping to foster a change in perspective from individualism to collaboration.

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Question: What is needed to further build towards a re-appreciation of collective efforts such as energy community initiatives? Are there any other examples of community-based initiatives (non-energy) in Bulgaria?

In Bulgaria, while there are still few examples of cooperative initiatives in areas like food, mobility, or energy, there are emerging trends in solidarity-driven actions, especially regarding charity. Many Bulgarians have shown strong solidarity in emergency situations, such as fires or floods, with voluntary organizations stepping up to provide support. Over the past year, these organizations have started to develop further, indicating a shift in mentality, particularly among younger people, who are becoming more open to working for the collective social good rather than just individual benefits.

Additionally, in Bulgaria, multi-family residential buildings (which make up over 100,000 buildings across the country) could be viewed as a form of community, as they are collectively owned by the households within them. A major challenge lies in getting the residents of these buildings to cooperate and invest in energy efficiency and renewable energy projects. However, this area is still underdeveloped due to chaotic government policies and a lack of support.

The potential for cooperation in these multi-family buildings presents an opportunity for collective action and could be an interesting area for further exploration. One possible approach is to link lessons learned from the charity sector with community energy initiatives, as both are driven by a sense of solidarity. Exploring how these areas might work together could provide new pathways for building cooperation in Bulgaria.

Question: What exactly is the community about? Now it seems just for investments. What is in it for residents?

Currently, the energy community in Gabrovo primarily revolves around investment in PV installations. Participants contribute financially to the PV installation, and in return, they have the potential to receive a profit or return on their investment. However, at this stage, these energy community members do not directly use the electricity generated by the solar panels; instead, the energy is allocated to public buildings, such as administrative offices, sports halls, and other municipality facilities. This indirectly benefits residents, as these buildings are places that they or their families might use.

The main immediate benefit for the members is the opportunity to support their local municipality's renewable energy projects, thereby contributing to local development and sustainability. For instance, rather than the municipality investing in new PV, it can redirect those funds toward other important local services, such as improving schools or green spaces. In this sense, community members are supporting the local economy and public infrastructure by being part of the energy community.

Looking ahead, the community aims to share energy with its members once the energy market is fully regulated and open (expected by the end of 2025). However, at this point, the energy-sharing model is not yet feasible due to market regulations. While the legislation is currently a limiting factor, there are ongoing discussions about expanding the scope of the energy community. For example, there have been ideas to host social gatherings, such as a party, to

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strengthen the bond between members. These types of events, while not directly related to energy production, help foster a sense of community.

Question: About half of the members of the energy community are from Gabrovo. Is this positive or negative in your opinion?

The energy community in Gabrovo initially did not have a specific selection process for members. On the one hand, the open participation model aligns with the idea of energy communities being accessible to anyone, fostering inclusivity. The fact that around half of the members are individuals or organizations that were previously unknown to Gabrovo and EnEffect is viewed positively. It shows that people from various backgrounds and locations (even beyond Gabrovo) are interested in joining, which is seen as a sign of genuine interest in the energy community.

The motivation behind this diverse group of participants is varied. Some joined for financial reasons, as the business model offers a slightly better return than leaving money in the bank. Others, like members from Greenpeace or the Technical University of Gabrovo, were driven by the idea of being part of a pioneering initiative and the opportunity to learn about energy communities from the inside. Additionally, some people are motivated by the desire to contribute to something new and innovative, rather than the financial aspect alone.

For many Bulgarians, the primary value lies in transparency. Gabrovo and EnEffect aim to be fully transparent, openly sharing all information with participants and engaging with them honestly. This transparency, particularly in a society that has been mistrustful of politicians, plays a significant role in attracting people to the energy community. [transparency]

The focus has been on clear, straightforward communication, where members know what to expect and trust the people involved. The idea that members are engaging with experts they can relate to (such as local figures like Todor Popov, who is known within the community) helps create a sense of authenticity and trustworthiness.

Question: Is there an ambition to create an umbrella organisation?

The idea of forming a larger umbrella organization has been considered but is not yet a realistic goal. Although such an umbrella could potentially support multiple energy communities, the legal and organizational structures currently in place are not sufficient to make it a feasible option. While the energy community may evolve over time, its present focus is more on collaboration, innovation, and the unique opportunity to be involved in a first-of-its-kind initiative in Bulgaria.

Question: Do you already have any plans on future projects? Any idea on the potential for growth of the energy community?

In the near future, they plan to release a similar invitation to attract more participants for a new PV installation with the same capacity as the current one. They are also exploring models for sharing electricity between two buildings that are close to each other, which would help expand energy sharing opportunities.

Additionally, they are working on a model for multi-family buildings, but there are technical issues to address. They are also considering a collective heating system for multiple buildings, but this idea is still in the conceptual phase. While they are progressing with their plans, the

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lack of specific regulations for energy communities presents difficulties. Despite these challenges, Gabrovo and EnEffect are trying to make the most of the available options. They are currently working on solutions that are the “least worst” options given the circumstances, but the lack of legal clarity and support continues to be an obstacle. They are advocating for a more tailored legal entity and regulatory framework specifically designed for energy communities.

The current energy community in Gabrovo is not planned for significant growth, as it is set up for a fixed period of 10 years. The focus is on refining the current structure and working on future models, rather than expanding the existing community.

Question: If you could not use European subsidies, would you still want to set up an energy community and invest in a solar roof

The energy community project could continue even without EU subsidies. While EU support helped in the early stages, especially with the business model, the energy community is designed to be self-sustaining. The goal was to create a project that can operate independently in the long term, relying on a solid business model. Government support is appreciated, but the key is to have a business model that accounts for market and legal conditions, which can affect the project's viability.

Question: What would you consider as the main conditions for replicating the energy community in Gabrovo? If you would have to choose three conditions, that should definitely be present to be successful. What would these conditions be?

When considering the replication of an energy community model like the one in Gabrovo to other municipalities, there are three key conditions for success:

- **Political support:** the backing of the municipality and its mayor is crucial. Without this political will, it would be difficult to ensure the project’s continuation and success, especially in smaller municipalities. The local government needs to be committed to following a non-profit principle, as it could easily shift towards a profit-driven model if not carefully managed.
- **Trustworthy leadership:** the leader/initiator of the energy community should be a credible, well-known figure in the community who is not a political member. Ideally, this would be an expert or someone respected within the municipality. This person would need to be transparent and accountable, ensuring the project runs smoothly and that the community trusts the process.
- **Transparency and clear communication:** it is crucial to communicate openly about the risks involved, including the potential for no guaranteed profit. Being honest about the community energy project's challenges and opportunities builds trust with the community. Regular updates and feedback are essential to maintain interest and credibility. If people feel informed about the project's progress, they are more likely to trust and support it.

Question: Did you also get negative feedback or resistance by the municipality, energy market or citizens?

There was some criticism from an individual who had invested in other options, like shares or cryptocurrencies, expecting higher returns. The response to this was straightforward,

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explaining that the energy community's returns were different and more focused on sustainability and community benefits. On the political side, one councilor initially questioned the viability of the 100 kWp PV installation, suggesting it was not enough for 20 houses. However, the energy community clarified that the system was never meant to power 20 houses but to serve as a model to demonstrate how the concept works. Overall, political support has been positive.

Unexpected issues did arise, such as needing to upgrade some system elements, which led to additional costs. These were communicated transparently to the members of the energy community, explaining the need for repairs or improvements (e.g., the installation of smart metering systems to improve monitoring). The municipality also responded quickly to issues like snow on the roofs that halted energy production. Now, they are prepared for future snowfalls and will clean the roof more efficiently, improving the energy community's performance.

There are also external benefits, as the municipality's work on this energy community has attracted interest from organizations like Greenpeace and the European Parliament Foundation, which will visit Gabrovo soon for a study tour. This interest brings additional benefits, such as tourism and local spending.

8 Eye openers and Actions

Erika Meynaerts' (VITO) main insight is that beyond the typical social, economic, and environmental benefits of energy communities, there are additional motivations that can attract members. These include: being part of an innovative initiative - people may be drawn to the idea of joining the first energy community in Bulgaria, motivated by the pioneering aspect and the opportunity to contribute to something new – and building knowledge and expertise – some individuals may see participation as a way to gain hands-on experience and insights into how energy communities function, with the potential to apply this knowledge elsewhere in the future. These factors could be valuable in communication strategies to attract new members, as they appeal to those who are not solely driven by financial or environmental considerations but also by curiosity, innovation, and personal development. Erika Meynaerts highlights the importance of sharing lessons learned from pilot projects to build trust and support the development of energy communities. She suggests that the one-stop shops should focus on sharing concrete tools, templates, and specific lessons learned from pilots. This could help others overcome doubts and provide the necessary resources to create successful energy communities (action, WP5).

Maro Saridaki's (Kamp C) main insight is that it is important to start an energy community even if the initial setup is not perfect. The key is to take the first step and refine the process along the way. Additionally, the role of driven individuals and strong leadership—such as the municipality's involvement—is crucial in successfully creating something innovative. Once the project is completed, it may seem simple in hindsight, but the essential ingredients for success are the commitment and determination of those involved. Maro's action is to create a more realistic and detailed technical plan and financial contractual framework for their energy project to build trust. Additionally, she plans to push the municipality to take a more ambitious role in the project, as they have not yet been fully involved. (action, WP3)

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Maroeska Boots' (Agem) main insight is that being well-prepared with key technical, financial, and logistical details—while accepting that they will not be perfect from the start—can help in addressing potential questions from energy community members. This preparation is crucial in building trust and effectively motivating people to join the energy community.

Katharina Biely's (VITO) main insight is that despite historical distrust in cooperatives, the energy community succeeded by emphasizing transparency, building trust, and providing clear information. Doing the necessary groundwork and openly sharing details played a key role in overcoming scepticism and making the project work. Katharina Biely's action is to advocate for a balanced approach in creating market conditions that support energy communities (action, WP5). She emphasizes the importance of considering both the positive and negative side effects of market liberalization, drawing on her experience in the agricultural sector, where the deregulation of quotas led to challenges for farmers. She aims to ensure that any market adjustments made at the EU level consider all stakeholders to avoid unintended negative impacts, particularly on vulnerable groups.

Sylvia Breukers' (Duneworks) key insight is that despite existing distrust, there is a societal foundation for energy communities in Bulgaria. Examples like charity work and the growing interest among young people in social value creation demonstrate this potential. Additionally, the presence of homeowner associations provides an existing structure for energy communities, though they need to learn to collaborate more effectively. Highlighting this societal basis in communication can reinforce a positive narrative and drive social innovation. Sylvia Breukers will focus on exchanging experiences to build a strong repository of good examples that demonstrate how energy communities fulfill a societal need. She emphasizes the importance of making this explicit, especially in times of political turbulence, to counter perceptions that energy communities are politically motivated. Her key action is to help build a strong, non-political narrative around energy communities (action, WP6).

Sophie Loots' (ZuidtrAnt) main insight is that confidence, trust, and courage are essential to successfully forming an energy community, as demonstrated by the Gabrovo experience. Sophie Loots will focus on ensuring that national legislation remains flexible enough to adapt to rapid changes in the energy market (action, WP5). She highlights the importance of keeping citizens at the heart of policy design, as current legislative frameworks sometimes overlook their role. This is a key consideration for every country when shaping energy community policies.

Joeri Naus' (VITO) main insight is that taking the step to start an energy community, learning from the experience, and then applying those lessons elsewhere or at a larger scale is crucial. Additionally, he found it revealing that trust between citizens and local experts played a key role, particularly when those experts were independent of political affiliations. This trust could be an important factor in replicating or scaling similar initiatives in other contexts (action, WP5).

Steven Laurijssen's (Klimaan) eye-opener is that having the right tools and resources is crucial to starting and implementing a renewable energy community project. He highlights that, while his perspective comes from a more portfolio-based approach to renewable energy, the knowledge gained from smaller, focused projects is equally valuable and can be applied in both cases.

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Teodora Stanisheva's (EnEffect) main eye-opener is the recognition of the importance of communication that is socially inclusive. She highlights the need to approach energy community projects with a focus on solidarity and the involvement of vulnerable groups, ensuring they can participate and benefit. She reflects on the importance of integrating the social dimension in the communication strategies, not just focusing on technical or financial aspects. This involves considering how the work can impact vulnerable people and making sure they have a say in the process.

Todor Popov's (Gabrovo) main eye-opener is the importance of visibility and gaining empirical data on how the energy community model works in practice. He reflects that while they had theoretical expectations and a business model, real-world data and feedback from energy community members and external stakeholders are crucial. This kind of empirical information helps refine future projects and initiatives, providing valuable insights beyond theoretical planning.

Stanislav Andreev's (EnEffect) insight revolves around the disappointment with organizations and experts who talk extensively about energy communities but do not take tangible actions, like joining or supporting them. He expresses frustration that despite all the discussions, only a few actually became part of the community. His action point focuses on actively involving new people - especially younger faces - to bring fresh energy and momentum to push for necessary legislative reforms and community establishment. He emphasizes the importance of engaging a broader base of people to influence policymakers and make meaningful changes. (action, WP3)

Table 23: List of actions

Action	Driver	Related Work Package
refer to the need of a motivated municipality to drive the energy community to realisation	Maro Saridaki	WP3
make explicit/give words/build and strengthen narratives around energy communities	Sylvia Breukers	WP6
make a realistic technical plan with financial and contractual details, to create trust	Jet Groen	WP3
continue my (our!) work on transparent communication on projects towards potential members	Steven Laurijssen	WP3
try to modify/simplify the message. At the moment in Kamp C we are trying to take a lot into account, complicating the message	Maro Saridaki	WP3

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use our pilot REC KampC as a good learning example to communicate	Jet Groen	WP3
stress importance of tapping into local trust relations (for instance between citizens and experts) when setting up a (policy) dialogue	Joeri Naus	WP5
share and collect good stories that inspire others	Sylvia Breukers	WP6
continue to exchange experiences so as to build a repository of examples that show that energy communities fulfill a felt societal need	Sylvia Breukers	WP6
hammer on about the need for a supporting framework for energy communities	Steven Laurijssen	WP5
motivate Gabrovo community to be an example of a social community. Use the EUSEW policy session for this	Todor Popov & Stanislav Andreev	WP6

9 Lessons learned for TANDEMS

1. Gabrovo's energy community offers a **pragmatic and achievable model of collective action** that emphasizes cooperation and shared benefit. Unlike traditional cooperatives, which often involve complex, long-term commitments and shared financial risks, the energy community is structured around a clear, limited goal -installing and operating a PV installation. This model allows individuals to come together to accomplish something specific without needing to engage in broader collective financial systems. Focusing on a specific, tangible project rather than broader, more complex financial or organizational systems can make cooperation more appealing and feasible for participants.

2. When considering the **replication** of an energy community model like the one in Gabrovo to other municipalities, there are three key conditions for success:
   - **Political support:** the backing of the municipality and its mayor is crucial. Without this political will, it would be difficult to ensure the project's continuation and success, especially in smaller municipalities. The local government needs to be committed to following a non-profit principle, as it could easily shift towards a profit-driven model if not carefully managed.

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- **Trustworthy leadership:** the leader/initiator of the energy community should be a credible, well-known figure in the community who is not a political member. Ideally, this would be an expert or someone respected within the municipality. This person would need to be transparent and accountable, ensuring the project runs smoothly and that the community trusts the process.
- **Transparency and clear communication:** it is crucial to communicate openly about the risks involved, including the potential for no guaranteed profit. Being honest about the community energy project's challenges and opportunities builds trust with the community. Regular updates and feedback are essential to maintain interest and credibility. If people feel informed about the project's progress, they are more likely to trust and support it.

3. Gabrovo's energy community demonstrates the **power of collaboration across diverse sectors** (government, citizens, businesses, grid operators, energy providers, and NGOs) to overcome challenges in setting up community-based renewable energy projects. Key partners provided crucial resources, expertise, and support at different stages of the project, from legal advice to fundraising and grid connection.
   - The **municipality** played a pivotal role in both facilitating the energy community and providing legitimacy. Local government support, particularly when it comes to providing land and offering political backing, is essential for launching successful energy community projects. The municipality's involvement helped build trust, which was critical in a community where past experiences had led to scepticism about such cooperative initiatives.
   - The engagement of **citizens and SMEs** was essential for funding the project, and it showed that local communities can contribute to energy transitions if provided with an affordable, inclusive investment model. The investment not only secured funding but also fostered ownership and participation, which are key for long-term sustainability. Transparency in communication, like in the call for capital, helped build trust and ensured that the community believed in the project's success.
   - Legal and financial guidance is crucial when pioneering new business models and dealing with regulatory uncertainties. Gabrovo's experience shows that working with **experts** (NGO - EnEffect) to create templates and agreements can provide clarity and confidence, enabling the project to proceed despite challenges.
   - The **distribution grid operator** was responsible for the connection of the PV installation to the grid, an essential part of the energy community's success. Despite initial hesitations regarding the energy community model, they eventually facilitated the connection, which allowed the community to start feeding energy into the grid. This partnership underscores the importance of collaboration with grid operators (and energy suppliers), even when they may initially be reluctant or unfamiliar with energy community models. Building relationships and demonstrating the feasibility of community energy projects can help overcome these challenges. It also highlights the importance of patience and persistence, as evidenced by the months of negotiations required to connect the installation to the grid.

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4. **Open and transparent communication** plays a crucial role in securing funding and maintaining community trust. Regular meetings, webinars, and a clear call for capital ensures that all stakeholders are well-informed about the project's progress and challenges. This approach helps alleviate concerns and encourages participation. By clearly explaining the benefits and risks and ensuring that participation is open to diverse groups (e.g., by setting an affordable minimum contribution), the energy community can attract people who might otherwise be sceptical.

5. Effective **citizen engagement** in community energy initiatives requires a combination of clear communication, transparency, inclusivity, and a focus on shared community goals. By using a multi-channel communication strategy, adopting hybrid meetings for accessibility, and recognizing the diverse motivations of participants, an energy community can be created that is both engaging and trustworthy. The learning and development opportunities offered to participants, along with the transparency and openness of the process, ensures broad participation and long-term commitment.
    - Using **multiple communication channels**, including mass media, webinars, and face-to-face meetings, ensures that different types of stakeholders can stay informed and involved. Initially, mass media can be used to raise awareness. As the community energy project progresses, more targeted communication, such as seminars and webinars, can be used to engage stakeholders in a deeper and more specific way. This step-by-step strategy allows for growing engagement as more details become available, moving from general awareness to more focused discussions.
    - Providing **hybrid meeting options** enhances participation, especially when the community includes individuals from diverse locations or those with other commitments. It also signals inclusivity and encourages ongoing involvement from a wide audience.
    - Providing **straightforward information** about the community energy project's goals, structure, and finances, and ensuring that communication remains honest and accessible, is fundamental for long-term participation and commitment.
    - **Diverse motivations** should be recognized when designing engagement strategies. People are often driven by a mix of financial, environmental, and social factors, including the desire to learn, innovate, or be part of a historic movement. Engaging citizens with different motivations requires tailored messaging that speaks to their specific interests and values.
    - **Community leadership** and local involvement help foster a sense of ownership and commitment. When citizens see familiar, trusted figures leading the initiative, they are more likely to engage. The sense of working towards a shared community-driven goal strengthens the connection between citizens and the project.
    - **Learning opportunities and the chance to build expertise** can serve as strong incentives for citizens to engage. Framing participation in the energy community as an opportunity to gain knowledge and develop new skills can attract people who are motivated by curiosity, innovation, and the desire for personal growth.

6. Energy communities attract members **not only** for social, economic, and environmental benefits but also for the opportunity to be part of an innovative initiative and to gain

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knowledge and expertise. This highlights the importance of appealing to curiosity, personal development, and the pioneering aspect of such projects.

7. The key to success is **taking the first step**, even if the initial setup is not perfect. Strong leadership and commitment from individuals and municipalities play a crucial role in turning an idea into a functioning project. Having a solid technical, financial, and legal foundation, while remaining open about limitations, builds trust and encourages participation. Clear communication and transparency help overcome scepticism, especially in regions with a history of distrust in cooperatives.

8. While theoretical models and business plans provide a foundation, **practical insights and real-world data** are crucial for refining and scaling energy communities. Lessons from pilot projects should be documented and shared to improve future initiatives.

9. While **market liberalization** can create opportunities for energy communities, it also presents challenges, particularly for vulnerable groups. Ensuring balanced policy adjustments at both national and EU levels is key to avoiding unintended negative consequences.

10. National policies should remain **adaptable** to rapid changes in the energy market while keeping citizens at the center of energy community development. This ensures that legislative frameworks evolve in a way that supports grassroots energy initiatives.

10 Annex: presentation on solidarity and community energy (Erika Meynaerts, VITO)

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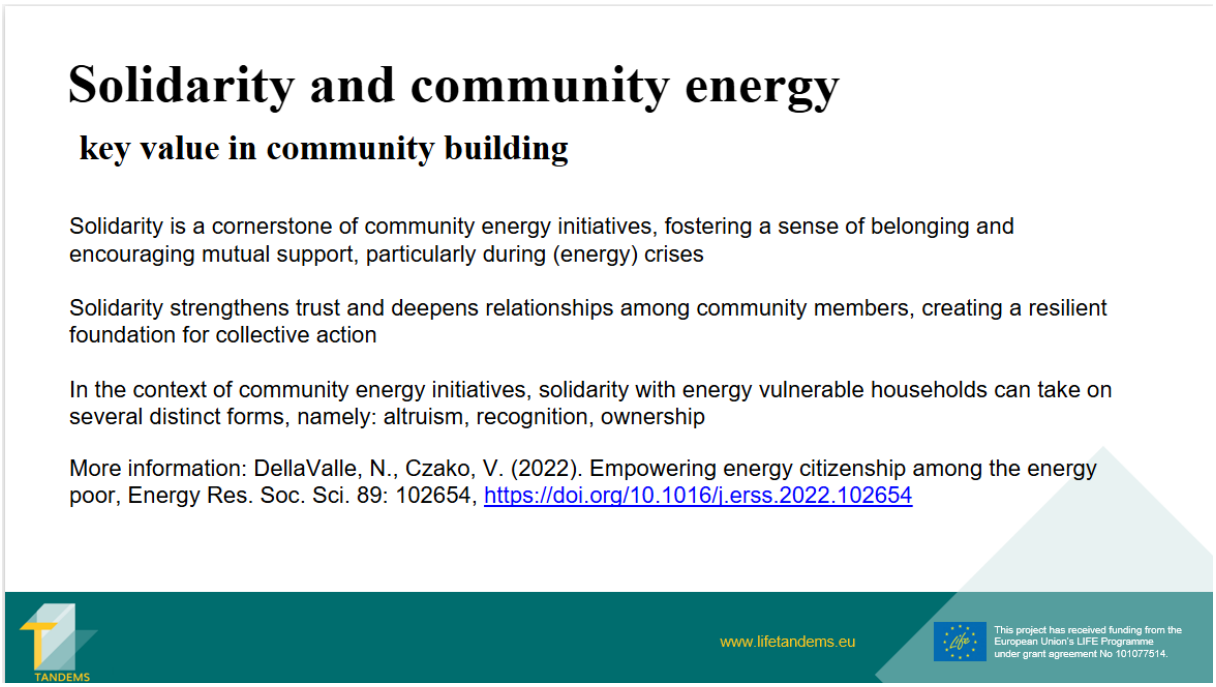

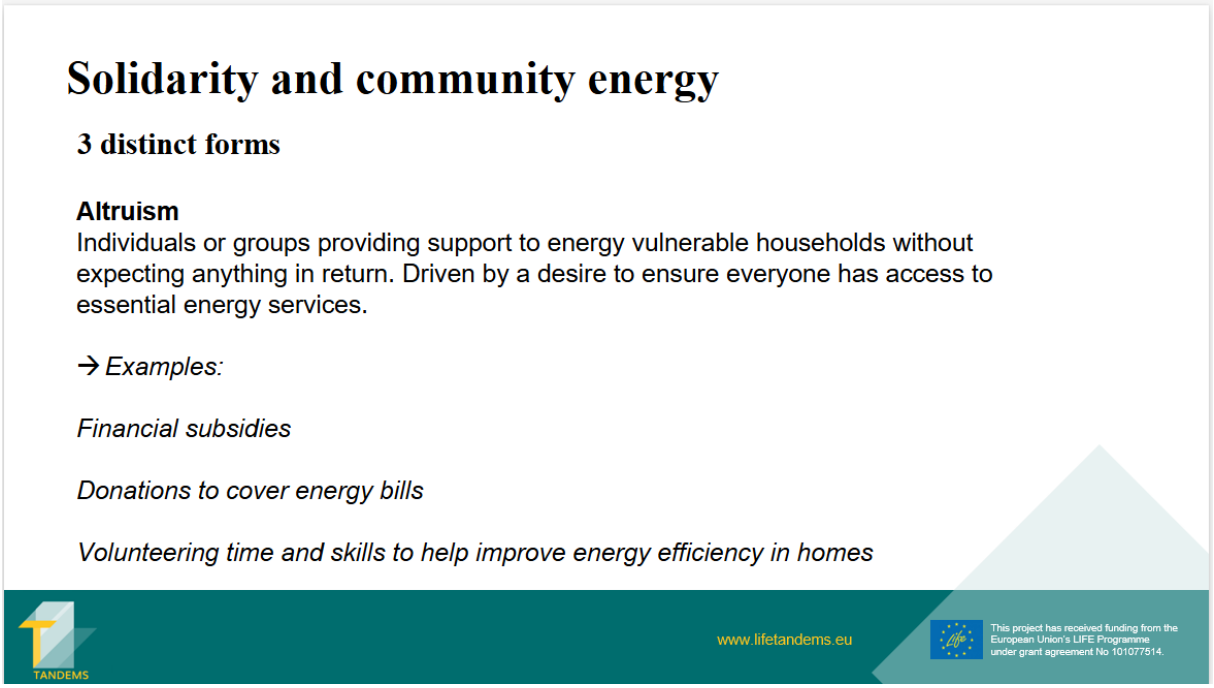

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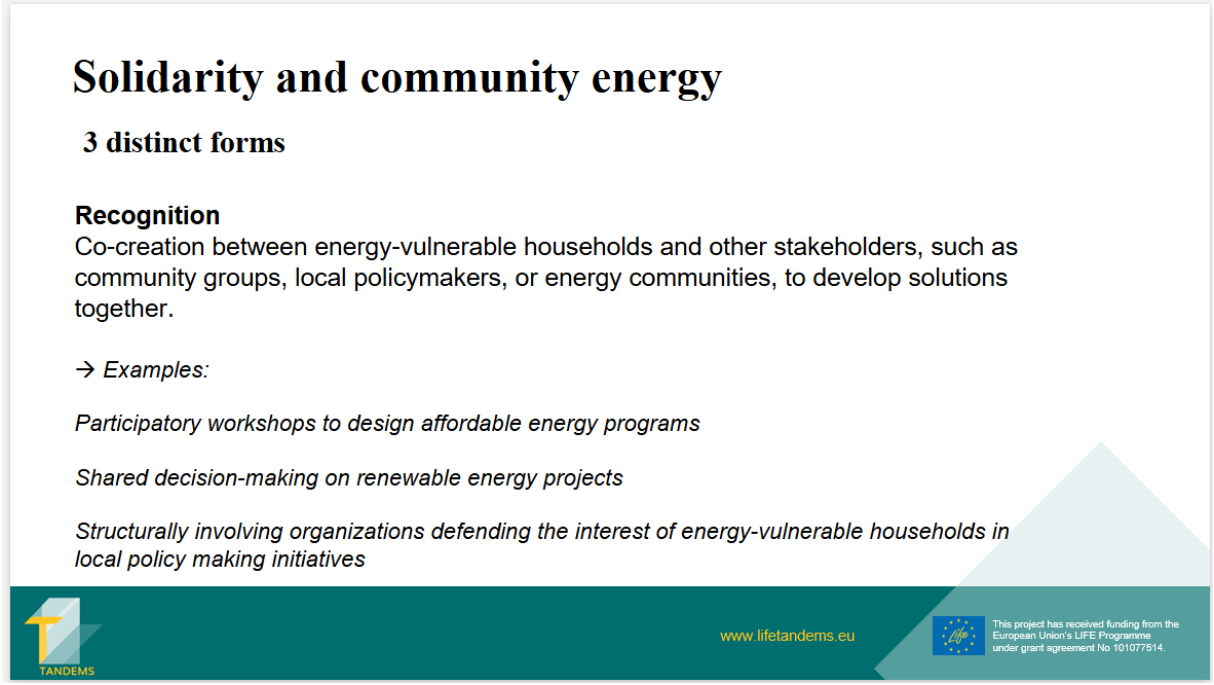

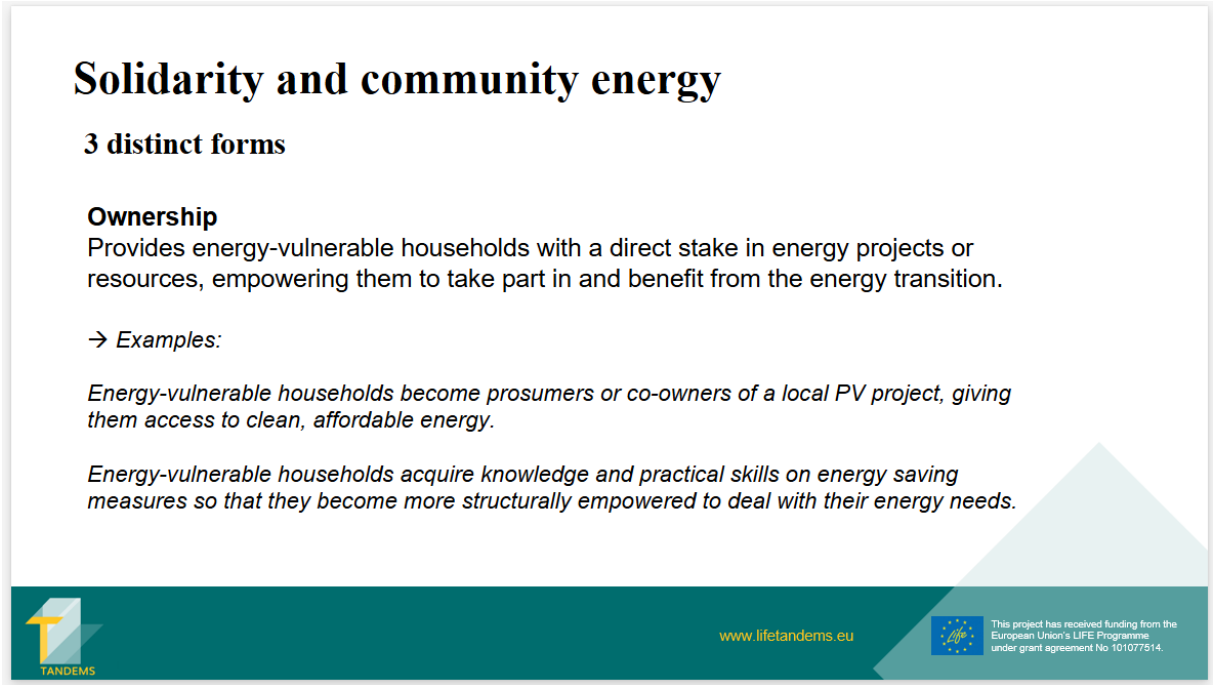

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Annex 9: Reflexive learning session – WarmteVerzilverd (online, 13 February 2025)

1 Participants

Table 24: List of participants

Organisation	Name
VITO	Joeri Naus
VITO	Erika Meynaerts
VITO	Katharina Biely
ZuidtrAnt	Sophie Loots
ZuidtrAnt	Liesbet Veulemans
Duneworks	Sylvia Breukers
Agem	Maroeska Boots
Agem	Justin Pagden
Kamp C	Maro Saridaki
Klimaan	Steven Laurijssen
EnEffect	Teodora Stanisheva

2 Aim

The aim of the reflexive learning session is to share lessons learnt from the TANDEMS' pilot projects with the consortium partners, deepen insights and define actions. During the learning session following steps are taken:

1. The action manager introduces the pilot project and explains the project's context (local, regional, national) to the participants.
2. The action manager explicates 3 to 5 key moments, i.e., events that really changed the course or dynamics of the project in a positive and/or negative way. For each event the action manager explains what happened (event), what the outcomes were (after) and what conditions and factors were important for making this happen (before). The participants take notes while listening (e.g., ideas, questions, feelings, associations).
3. The participants process their thoughts and write down their most important question(s) and their most important insight(s).
4. The participants share their questions with the action manager. The facilitator guides the discussion and uses the systemic iceberg to capture additional insights.
5. The participants share their insights. The facilitator guides the discussion and uses the systemic iceberg to capture additional insights.
6. The participants identify the most relevant "eye-openers" that they can benefit from in their own contexts.
7. The participants translate the learnings into actions (i.e., what changes or interventions are needed to strengthen the value network of the pilot project(s), to catalyse just energy

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projects at national or regional level, to facilitate wider systemic change ate national or EU level?)

8. The action manager reflects on what he/she has learned for their pilot project (i.e., what are the key lessons, what could/should be changed as a result?)

3 Looking back to previous learning sessions: the 'Growing Up Together' model (Sylvia Breukers, Duneworks)

During the learning sessions, challenges such as friction, resistance, non-collaboration, and non-engagement, can come up, all of which are common experiences in energy communities. These issues arise in different contexts, particularly in interactions with other initiatives, citizens, and, most notably, municipalities.

While some energy communities and municipalities have naturally strong ties, such as in Gabrovo, where the local authority and the energy community are closely linked, this is not the norm everywhere. In many cases, municipalities and energy communities do not start as natural partners. This misalignment often results in difficulties when working together on energy transition initiatives.

In the Netherlands, the national program 'Local Heat' was launched to support local heating initiatives, with a key focus on improving collaboration between municipalities and energy communities. To support more effective public-civic partnerships, the 'Growing Up Together' model was developed by Duneworks and EnergieSamen. Though originally designed for district heating projects, it can also be applied to sectors, such as food.

Unlike renewable energy projects, such as rooftop PV installations, district heating initiatives are more complex and require a higher level of coordination. Historically, Dutch municipalities found it easier to collaborate with large energy companies like Vattenfall rather than citizen-led initiatives, which claimed they could take on the task and often arguing that they could do it even better. In the Netherlands, public-private collaboration is well-established, but public-civil collaboration between municipalities and citizen initiatives remains unfamiliar and untested in many cases.

To gain insights, Duneworks and EnergieSamen conducted interviews and organized dialogue sessions involving both municipal civil servants and frontrunner energy communities. These discussions took place in three cities: Zwolle, Zutphen, and Amsterdam. Each of these cities has ambitious citizen-led district heating projects that explore innovative energy sources, such as extracting heat from the IJssel river or city canals in Amsterdam.

A notable example from Amsterdam involves a citizen initiative that recently secured financing to move forward with a district heating project. The municipality acted as a guarantor for a public bank loan, demonstrating a significant level of trust and commitment to the initiative. However, this trust was not easily achieved but resulted from years of struggle, negotiation, and relationship-building.

The study identified several essential factors that contribute to a successful partnership between municipalities and energy communities:

- **Getting to know each other**: one of the most fundamental steps is simply taking the time to build relationships and develop mutual appreciation. In Zwolle, a community of practice

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was established to facilitate open conversations between the municipality and the energy community. To encourage constructive dialogue and lighten the tone, they even incorporated elements of theatre play into their meetings. This initiative resulted in a document, 'The Commedia of Zwolle', which openly addressed and challenged the prejudices held by both civil servants and community members.

- **Working together practically**: beyond discussions, collaboration must be put into practice. Engaging in joint projects is one of the best ways to build trust and establish a shared sense of responsibility. In Zutphen, the municipality and the local energy cooperative conducted a joint feasibility study for a district heating project. This effort helped reinforce their partnership and ensured that both sides gained a common knowledge base. Similar collaborative efforts were observed in Amsterdam.
- **Securing partnerships through agreements**: formalizing collaboration through agreements helps create clarity and continuity. In the Netherlands, partnership development typically follows a structured process: first, an agreement of intent is signed. Later, a more detailed partnership agreement is established. These agreements define roles, responsibilities, shared values, risk management, and decision-making structures. For example, in Zutphen and Amsterdam, partnership agreements played a crucial role in strengthening collaboration by clarifying expectations. In Amsterdam, the 'Meer Energie' initiative initially struggled with an overwhelming number of municipal meetings which was unsustainable for a citizen-led cooperative. Through a partnership agreement, they established a more feasible meeting structure, ensuring their time was valued and that they were taken seriously as partners.
- **Developing a shared story and vision**: a common mission and vision provide long-term direction and motivation. In Zwolle, the theatre-inspired activities helped foster a collective narrative. In Amsterdam, 'Meer Energie' and the municipality co-developed scenarios for the district heating project, even though the cooperative already had a clear vision. The process of creating these scenarios together helped establish a shared language, a unified vision, and a stronger working relationship.

Despite these best practices, numerous challenges and sources of friction were identified:

- Civil servants often question who energy communities truly represent. Are they a credible voice for citizens? Conversely, energy communities face similar doubts about municipal officials, who frequently change positions. If a civil servant makes a promise, how reliable is it? Making these concerns explicit and discussing them openly can help address scepticism.
- The role of professionals within citizen-led initiatives is often unclear. Are they volunteers, or are they seeking paid positions? Should municipalities compensate energy cooperatives for work such as citizen engagement? Addressing these questions upfront helps avoid misunderstandings.
- Staff turnover within municipalities and energy cooperatives can disrupt projects. Establishing clear mandates, respecting different work cultures, and defining decision-making processes can help maintain stability.
- Both municipalities and energy communities struggle with financial stability. A major issue in the Netherlands is the stop-go funding dynamic, where funding is provided in phases

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based on progress assessments. This uncertainty makes long-term planning difficult. Innovative public procurement models and milestone-based financing can be explored as possible solutions.

One of the biggest obstacles in achieving successful public-civic partnerships is making the time to discuss how to work together effectively. Addressing friction points explicitly, building structured collaborations, and establishing mutual trust are all crucial for long-term success.

More information:

https://www.duurzaamdoor.nl/thema/energietransitie/rol-energiegemeenschappen/opgroeiruimte

4 Learning objectives

Participants were asked to share their learning objectives with the presenter (i.e., action manager) ahead of the presentation, allowing the presenter to better tailor the content to focus on the context and key events. Also, both the learning objectives and any questions raised during the session (see section 7) can be utilized by the action manager to tailor and focus the guidance document for the pilots, as part of WP3.

- Necessity of inter-municipal collaboration for success of project? (Kamp C)
- In what ways can knowledge be shared while upholding innovation within organization? (Kamp C)
- Role or influence of the DSO (distribution grid operator)? (Klimaan)
- Roles agreed between partners in WarmteVerzilverd, and how it plays out in practice? (Klimaan)
- Process of engaging the municipalities - what was problematic? What can be improved in terms of advocacy? (EnEffect)
- How is the prolonged support by the key stakeholders ensured? (EnEffect)
- Learning about the partnership(s) and how these have evolved over time (Duneworks)

The learning objectives serve as the basis for identifying lessons learned in Section 9. The learning objectives that were not addressed during the session are reformulated into actionable items in the action table presented in Section 8, if possible and relevant.

5 Introduction of pilot project: the story of WarmteVerzilverd (Sophie Loots & Liesbet Veulemans; ZuidtrAnt)

The story of WarmteVerzilverd begins with an ambitious vision: to harness the untapped potential of residual industrial heat to create a sustainable, local heating network. This journey started with the redevelopment of a site owned by Agfa-Gevaert (Minerve site), an industrial company historically known for producing photographic film. With parts of the factory shutting down, a significant portion of the land became available for new residential development.

At the same time, the Province of Antwerp and VITO, a Belgian research institute, conducted a feasibility study exploring how residual industrial heat could be used more effectively. Given its location in a residential area, Agfa-Gevaert's operations in Mortsel presented an opportunity as the company produced substantial amounts of residual heat that could be repurposed to supply heating to nearby households and businesses.

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Following the feasibility study, the municipalities of Mortsel, Edegem, and the City of Antwerp took an important step by pooling resources to fund a more detailed financial study. This study aimed to determine whether a heating network using residual heat would be viable. The tender for this study was won by Kelvin Solutions, an engineering company specializing in sustainable energy solutions. Representatives from Agfa-Gevaert, the municipalities, Kelvin Solutions, and the distribution system operator (DSO), Fluvius, met regularly to discuss the progress and findings of the study. These meetings were crucial for shaping the direction of the project and identifying potential challenges and opportunities. One of the conclusions of the study was that the newly developed residential area could be directly connected to the heating network. Moreover, Agfa-Gevaert could become both the heat producer and a potential client by using part of the residual heat internally for different plants within its facilities.

However, not all stakeholders were equally enthusiastic. While the potential benefits were clear, Fluvius, the DSO, remained hesitant about its involvement. Sensing a need for additional support, Kelvin Solutions reached out to ZuidtrAnt, a local energy cooperative, to explore whether they would be interested in participating in the project. At the time, Sophie Loots, a civil servant in the municipality of Edegem, was approached by Kelvin Solutions. When she asked about the financial scope of the project, she learned that approximately €5 million would be needed, an amount that seemed too ambitious for ZuidtrAnt alone. Recognizing the potential, ZuidtrAnt contacted Ecopower, a larger cooperative with experience in renewable energy projects. Together, they decided to form a new company to finance and manage the heating network. Thus, in July 2019, ZuidtrAnt-W was established as a dedicated heating cooperative.

In October 2019, after extensive discussions, Agfa-Gevaert's directors officially signed a contract committing to provide heat for the new network. This agreement marked a major milestone and provided the green light for the project's next phase.

By July 2020, the first physical steps were taken when the Governor of the Province of Antwerp had the honour of placing the first pipeline of the heating network.

In February 2021, the heat network was officially launched. Flemish Minister of Energy, Zuhal Demir, symbolically turned on the tap, marking the beginning of operations. A remarkable achievement of this project was its speed. Despite the complexities involved, the heat network became operational in just six months thanks to efficient collaboration and shared vision. The initiative even gained national media attention, further highlighting its success.

Initially, the heat network supplied five non-residential consumers. By 2023, the number of household connections had grown to 199, with further expansions planned. By 2026, the network is expected to connect 420 households.

From an economic and environmental standpoint, the business model relied on securing large heat consumers. Although household connections were numerous, they only accounted for one-third of the total heat consumption. To ensure financial viability, it was crucial to include significant non-residential consumers.

With the first phase completed, attention turned to expanding the network further. A subsidy was obtained to study the feasibility of an extension. However, certain conditions needed to be met for expansion to be viable:

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- At least 70% of households in the new target area had to agree to connect.
- All identified non-residential consumers had to commit to joining the network.
- Additional government subsidies were necessary to make the project financially feasible.

To manage this expansion efficiently, the extension was divided into two phases:

- Phase 1: A small street with only 25 houses.
- Phase 2: A larger neighbourhood that would require broader community engagement.

To encourage participation, a community-driven initiative called 'Warmste Straat' was launched. This name symbolized not only the heat supply but also the sense of neighbourhood cohesion. Two committed residents stepped forward as local ambassadors to help inform and rally their neighbours. A meeting with the director of the local school was also scheduled to ensure institutional buy-in.

Despite its successes, the project faced several challenges:

- This was one of the first attempts in Belgium to connect existing homes to a heat network, meaning there were no local precedents to follow.
- Agfa-Gevaert had not always been in the news for positive reasons, which made some residents hesitant.
- The houses in the extension area are not identical, leading to variations in connection costs.
- If fewer than 70% of households opt in, the expansion would not be financially viable.
- The extension area includes both young families and elderly residents, requiring a flexible pricing model to ensure accessibility.
- The first phase of the extension is projected to take several years, with full implementation not expected until mid-2027. This poses the risk of shifting household circumstances, such as residents moving, or delaying their decision to connect.

Despite these hurdles, the lessons learned from this initiative are invaluable for future heating projects. The collaborative approach between municipalities, energy cooperatives, and private partners has demonstrated that heat networks can be implemented efficiently and effectively when all stakeholders align, and clear agreements are made.

6 Presentation of key events

Key moment 1: feasibility and follow-up study

In 2015, the Province of Antwerp commissioned an initial study to explore the potential for heat networks utilizing residual heat from industrial plants. The study was conducted under a framework agreement (tender) with VITO. Following the results of this initial study, it became clear that there was a strong opportunity to develop a viable business case for such a heat network. Recognizing the potential benefits, several municipalities, along with the City of Antwerp, decided to finance a follow-up study. This additional research aimed to dive deeper into the technical, financial, and practical aspects of implementing a heat network, strengthening the case for its realization. A key condition for moving forward with the project was the involvement of frontrunner municipalities within the Province of Antwerp. Although the exact motivations behind the Province of Antwerp's decision to initiate the feasibility study are

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not fully documented, it is likely that long-term climate planning and sustainability goals played a significant role.

Key moment 2: municipalities finance follow-up study

Developing a heat network requires significant financial investment, particularly in the early stages when feasibility studies must be conducted to assess risks and potential returns. These studies are high-risk ventures, as there is no guarantee that the investment will pay off. As a result, funding from a higher level of government is essential as this is not something that can be initiated solely by citizens.

Recognizing this, the municipalities of Mortsel and Edegem, the City of Antwerp financed in 2018 a study to evaluate the feasibility of developing a heat network on the Agfa-Gevaert industrial site. This study aimed to determine whether the heat network would be a viable alternative to conventional heating solutions. A crucial factor in this phase was the role of Agfa Gevaert's energy manager. He was highly supportive of the project, advocating for it internally within Agfa Gevaert. This internal backing was important, as the company faced a critical decision: their existing gas boiler had reached the end of its operational life, and they needed to decide whether to invest in a new gas boiler or transition to the proposed heat network.

The feasibility study laid the groundwork for a potential public procurement process, but it also revealed a lack of interest from Fluvius in taking a leading role in the project. Despite this, the involvement of local governments and the commitment of Agfa Gevaert's energy manager were significant turning points, ensuring that the heat network concept remained a viable alternative for further development.

Key moment 3: collaboration between Kelvin Solutions, ZuidtrAnt and Ecopower

In 2018, a major step forward in the development of the heat network was taken when the energy cooperative ZuidtrAnt and Ecopower agreed to join Kelvin Solutions. This marked a turning point in the project, as it secured both the necessary expertise and financial stability to push the initiative forward. Kelvin Solutions approached ZuidtrAnt with an opportunity to collaborate and take an active role in realizing the heat network. Recognizing the need for a financially solid partner, ZuidtrAnt sought out Ecopower, a well-established renewable energy cooperative, to strengthen the project's financial foundation.

A key condition that enabled this development was the proactive policy approach taken by the municipalities of Edegem and Mortsel. These municipalities had approved a spatial implementation plan, which stipulated that all newly built residential areas had to be gas-free and must connect to the heat network or use another form of sustainable heating. This local policy ensured a guaranteed consumer base for the heat network, making it an attractive and feasible investment. Additionally, both municipalities formally approved the heat network's development in the public domain, providing the necessary legal and spatial framework for its realization. The outcomes of this key moment were significant, namely (1) the formation of a consortium consisting of ZuidtrAnt, Ecopower, and Kelvin Solutions, ensuring technical expertise, financial backing, and local cooperative involvement; (2) the launch of an initiative allowing local residents to financially participate in and support the heat network, fostering community engagement and ownership; (3) the establishment of a new energy cooperative, ZuidtrAnt-W, to oversee the development and long-term sustainability of the project.

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Key moment 4: first pipe and supply of heat

In July 2020, a significant milestone was reached with the installation of the first pipe for the heat network. Just six months later, the first heat was successfully delivered to one of the buildings of Agfa Gevaert, marking the transition from planning to tangible implementation. A crucial condition for this development was Agfa Gevaert signing an agreement with WarmteVerzilverd, ensuring not only a reliable heat supply to the network but also a substantial heat consumer. This was a critical factor, as heat networks require large, stable consumers to be economically viable. Without a major consumer like Agfa, the investment in infrastructure would not be financially sustainable. Interestingly, under the agreement, Agfa does not pay for the heat itself but instead covers the distribution costs, essentially paying for the transport of heat between its facilities rather than for the energy itself. This unique financial arrangement made the project feasible while securing a long-term commitment from a key industrial partner.

The project received coverage in local news, newspapers, and media outlets, significantly raising public awareness. The presence of the Governor of the Province of Antwerp and the Flemish Minister for Energy during the launch event further amplified its visibility. The project gained recognition as the first heat network in Belgium to supply residual industrial heat to households, positioning it as a benchmark for future sustainable energy projects. The media attention helped spark local interest in sustainable heating solutions and energy cooperatives

Key moment 5: extension of heat network with existing buildings

In this phase of the project, it was identified that not all the residual heat generated was being fully utilized. This observation highlighted an opportunity to extend the heat network, as there was still untapped heat available for distribution. Recognizing this potential, the city of Mortsel decided to move forward with exploring the possibility of expanding the network.

The City of Mortsel ordered a detailed study on the feasibility of the heat network extension. The study was financed with a subsidy of the Flemish Government. The study assessed the technical, economic, and logistical challenges associated with the network's expansion, and whether the available residual heat could be effectively incorporated into a larger distribution system.

At the same time, there were discussions within the consortium. While there was enthusiasm about the potential for an extension, it was crucial that all the different partners within the consortium were on board and aligned.

7 Q&A

Question: what was most challenging in securing local support?

The most challenging aspect of securing local support was dealing with the political pressure exerted by Fluvius (DSO). Working with municipalities was relatively straightforward, as they were happy to have someone take on the project. The difficulty arose because Fluvius, the DSO, did not want the heat network to be developed by another party. As a result, Fluvius used its political influence on municipal politicians to withhold the necessary ground agreements for laying the pipes of the heat network. This conflict of interest and political manoeuvring was the main obstacle in securing local support.

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Question: what was the role or involvement of citizens in the project? How were their interests guaranteed in the various events?

ZuidtrAnt is a citizen energy cooperative, as such prioritizing the interests of citizens is part of its DNA. The cooperative ensured citizen involvement primarily through financing. Of the €5 million invested in the project, one-third came from a Flemish government subsidy, one-third from a bank loan, and one-third from citizen capital. Importantly, this investment was not limited to citizens directly connected to the heat network. Anyone could invest, but there was no obligation for connected households to do so.

Because the project was developed in a new residential area where houses had yet to be built, direct engagement with residents was not initially possible. However, as the development of the residential area progresses and more housing units are completed, more direct engagement with residents becomes feasible.

Additionally, during the 2020 energy crisis, the price-setting model of the cooperative heat network protected citizens from rising energy costs. The price of the heat supplied was only indexed to a consumption index, protecting residents from price fluctuations on the energy market.

Question: how did you agree on the tariffs? How did you agree that Agfa Gevaert is not paying for the heat? And how does this relate to affordability?

The business case for the heat network was calculated in 2018 based on a 'no-more-than-gas' principle, meaning that the tariffs for residents were set to be no higher than the equivalent gas prices at the time. Compared to today's energy prices, these initial tariffs were very low.

ZuidtrAnt's agreement with Agfa Gevaert ensures that they pay minimal costs for the residual heat provided by Agfa. In exchange, Agfa is exempt from paying for the heat they consume and only pays for the distribution between their facilities. This arrangement is set for eight years, with the possibility of renegotiation depending on the future of the industrial plant.

To ensure long-term affordability and sustainability, a Plan B is being developed. This involves installing a collective heat pump using aquathermal energy (extracting heat from water) to supply the network. If necessary, this alternative energy source could replace the current industrial residual heat supply, ensuring stability and affordability for residents.

Question: did Kelvin Solutions ask ZuidtrAnt to be a partner in the project? Why did they specifically choose ZuidtrAnt? Were there other options?

Kelvin Solutions invited ZuidtrAnt to become a partner in the project. They recognized that the DSO was not enthusiastic about taking on the project. The director of Kelvin Solutions has a strong commitment to energy cooperatives and citizen involvement, which made ZuidtrAnt an appealing choice. Additionally, Kelvin Solutions was aware that ZuidtrAnt was an active energy cooperative in Mortsel and that one of its volunteers also worked as a civil servant in the Municipality. This personal connection, combined with ZuidtrAnt's mission and experience in cooperative energy projects, played a key role in their selection. While there may have been other potential partners, the combination of aligned values, local presence, and key connections made ZuidtrAnt the ideal choice for the partnership.

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Question: could the government help level the investment costs for citizens connecting to the heat network, reducing financial and psychological barriers?

Since every house is different, connection costs vary. The initial connection fee applies to both new and existing houses, but for homes in the extension area, this fee is higher than on the Minerve site. Additionally, residents must cover the costs of adapting their internal heating systems to connect to the network. This may include internal piping adjustments or, in the case of homes currently using electric heating, a complete system replacement.

To address affordability concerns, the City of Mortsel is investigating potential financial aid options. One idea under consideration is whether existing subsidies for heat pumps could also be applied to households connecting to the heat network. The City is supportive and actively working to find solutions that could help reduce the financial burden for residents.

Question: is the relationship with the DSO a structural issue that needs to be addressed to enable the replication of similar heat network projects?

The relationship with the DSO, Fluvius, presented a conflict of interest in this specific case. Initially, Fluvius lobbied with politicians to prevent the project from moving forward with an alternative partner. A key issue was the agreement for laying infrastructure in public spaces.

Before 2018, Fluvius sent a standard letter to all Flemish municipalities, asking them to grant Fluvius exclusive rights to develop heat networks. At the time, few municipalities considered alternative heat solutions, so many municipalities, including Mortsel, signed the agreement. Edegem, however, did not sign. Later, when the heat project emerged, Fluvius tried to enforce this agreement to claim a monopoly on heat networks.

However, the heat project proved that this claim was not legally valid, as other parties can also apply for such rights. The success of the ZuidtrAnt project set an important precedent, opening the way for other municipalities and energy cooperatives to develop heat networks independently of the DSO. This highlights a systemic challenge that may require policy clarification to ensure smoother scaling and replication of community-led heat projects.

Question: do Mortsel and Edegem give priority to development of citizen initiatives as the potential for heat networks is limited?

There is no indication that Mortsel and Edegem have established formal policies prioritizing citizen-led initiatives over commercial organisations for heat network development. Currently, commercial organisations often find heat network projects financially unviable due to high overhead costs and the need for substantial returns on investment. In contrast, citizen-led initiatives, such as ZuidtrAnt, are more willing to accept lower returns.

Question: to what extent was it important to free up space to get to know each other and learn how to work together (cf. 'Growing Up Together' model)?

Getting to know each other happened during the in-depth study of Kelvin Solutions when different key stakeholders (civil servants, Agfa Gevaert, Fluvius) met regularly. Kelvin Solutions was the only partner with full knowledge of the business case from start to finish, while other key stakeholders gained expertise over time. At that stage, there were no citizens involved as the residential area (Minerve site) was still under development.

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For the extension of the heat network, there is friction related to defining roles. Ambassadors who engage with other residents need credibility, but they are not official spokespeople of ZuidtrAnt. Their roles and responsibilities will need to be clarified as the citizen engagement process evolves. For the extension of the heat network, it is important to communicate carefully that the initiative is driven by citizens, not a commercial organisation, to avoid being perceived as just another energy supplier. The focus is on engaging the community and ensuring that the language used reflects the intention to involve citizens in the project.

There are four major connections to the heat network, including one to the Agfa Gevaert plant and three to SMEs. One of these SMEs, Opnieuw & Co, runs a recycle hub where people can donate and purchase recycled items. This site also provides a space to test various energy solutions. For example, there is a large battery made from recycled EV batteries, a fuel cell, and a big solar roof. These features allow for energy sharing and provide an opportunity to showcase the energy transition. The belief in the energy transition from Opnieuw & Co allows ZuidtrAnt to test and demonstrate these technologies. ZuidtrAnt can also host tours and educational events to engage citizens. E.g., three schools have visited the site. Furthermore, ZuidtrAnt can encourage citizens from the surrounding neighborhood to visit both the energy hub and the already-implemented heat network to learn more.

Question: are there resources available to create a strong communication plan to engage citizens, or will communication mainly happen through meetings?

For the extension, the first phase involves only one street with 25 houses, so the communication approach will be more localized. A small campaign will take place, including an event on 16 March 2025, where residents are invited for a drink to discuss the project. This is aimed at engaging the residents of the specific street. Once there is a clearer intention to connect more houses, a larger communication campaign will be launched, especially when capital has to be raised.

8 Eye openers and Actions

The eye-opener for **Sylvia Breukers (Duneworks)** was the realization that, despite the struggles faced, the heat project now seems like a success. She found it interesting that a systemic partner, like Fluvius, has had to accept that it no longer controls the project in the way it did before. She also noted that ZuidtrAnt's role was well-suited to its ambitions and capabilities. She mentioned that some initiatives in the Netherlands faced additional challenges or credibility issues when they took on overly ambitious roles. Furthermore, Sylvia highlighted that working through the feasibility study with regular meetings helped create a shared knowledge base and language among partners. The partnership with Opnieuw & Co was also an eye-opener for her, as it contributes to a more inclusive energy transition, bringing in other domains like sustainability and circularity.

The main insight for **Teodora Stanisheva (EnEffect)** came from the potential applicability of the pilot discussed, especially for similar initiatives in the early phases, like one being planned in Gabrovo. This initiative involves assessing the feasibility of creating a micro-heating plant and sharing energy with a school and several multi-family apartment buildings. A key challenge is proving to people that the new system can be more affordable and attractive than their existing heating solutions. Teodora also pointed out that in Gabrovo, the main source of heating, a private heating plant, stopped working, leaving people without heat. This situation

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has made the need for alternative heating options urgent. Teodora plans to translate insights from Belgium and the Netherlands into actionable strategies for local partners and municipalities. The goal is to help them access EU funds and other resources, and to encourage joint initiatives with citizens to empower communities to take action. She also aims to use the case of WarmteVerzilverd as a basis for developing a feasibility study and technical study for future projects. (action, WP3 & 5)

Justin Pagden's (Agem) eye-opener is the realization that while the heat transition and heat network concepts are long-term strategies, the business models being used currently focus on short-term views. This is problematic because, for example, the connection between heating prices and volatile gas prices does not align with the long-term nature of heat networks. Additionally, Justin highlighted that it is impossible to rely entirely on heat pumps to transition the built environment. This brings the need to rethink how business models for heat networks are approached to avoid getting stuck in complicated discussions. Agem supports 'Buurtwarmte' to position themselves in case of heat project ensuring a fair price model that includes strong citizen involvement. Justin plans to bring the idea of a cost-price model (similar to the one used in solar and wind projects) for heat networks to the table during an upcoming meeting with EnergieSamen. He believes this approach could help manage business model uncertainties and provide a more stable framework for heat network development. (action, WP3 & 5)

Sophie Loots (ZuidtrAnt) referred to the Danish model for heat networks, where the goal is to cover only the costs and not make a profit from selling heat. She emphasized that heat is a necessity for citizens, and thus it should not be a source of significant profit. Justin Pagden explained how the 'contract for difference' scheme aligns with this concept: if there is a high profit, the provider must pay a premium to the government, and if there is a loss, the provider receives a subsidy. This system ensures that the price remains fair and stable. He also pointed out that this system mirrors the cost-price model, where the goal is to charge only for the costs and avoid excessive profit-making.

Joeri Naus' (VITO) eye-opener revolves around the importance of boundary spanners in these types of initiatives. He acknowledges that individuals like Sophie Loots, who bridge different types of organizations, play a key role in making projects work. This led him to consider whether terms such as ambassadors are the right language to describe these roles, as the word implies a more one-directional form of communication. Joeri referred to 'warmtegeleiders' as a good example (https://vito.be/nl/nieuws/warmtegeleiders-burgers-over-aardwarmte). 'Warmtegeleiders' refers to a group of citizens with different backgrounds who come together to learn and discuss topics related to geothermal energy. Each participant takes part as an individual, drawing from their own knowledge and experiences, rather than representing a specific group, company, or organization.

Joeri also pointed out that energy cooperatives are willing to accept a lower return on investment, which can make them a compelling option for addressing energy policy goals, especially regarding affordable energy. He emphasized the importance of exploring this link and potentially advancing it through policy dialogue or other strategies.

Steven Laurijssen (Klimaan) pointed out the risks of accepting lower margins in energy cooperatives, particularly in terms of resilience when exposed to the market. Additionally, Erika

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Meynaerts (VITO) and Steven Laurijssen (Klimaan) addressed the challenges that smaller energy cooperatives face as they grow, particularly when it comes to balancing their principles with the practical needs of scaling up, such as increased overhead and greater responsibilities. The struggle is maintaining the cooperative's core values while ensuring its viability and capacity to take on larger projects.

Sylvia Breukers (Duneworks) highlighted the potential of a buddy system as a way to foster collaboration between municipalities and energy initiatives. She shared an example from Zwolle, where civil servants from the municipality were paired with members of the energy initiative, and they worked together as primary contacts for each other. This system helped both parties become more familiar, promoting shared responsibility and understanding.

Katharina Biely's (VITO) eye-opener was the realization of how incumbent companies in the energy sector are actively lobbying against change and blocking new developments that could disrupt their market power. She acknowledged that energy systems, particularly in the case of wind and solar energy, have seen progress in empowering energy communities to challenge big players. However, she expressed concern that for other energy sources, such as hydrogen, it remains difficult for citizen-led initiatives to break the dominance of the incumbents.

Maro Saridaki (Kamp C) plans to use the insights gained from the learning session as inspiration for an upcoming ‘dream event’ at Kamp C. Maro envisions involving a larger team to develop an action plan for the energy community of Kamp C and is inspired by a recent architectural exhibition she attended in Brussels. (action, WP3)

The insights of **Sophie Loots and Liesbet Veulemans (ZuidtrAnt)** focused on three important aspects for the extension of the heat project. First, there is a need to clarify roles within the project. It is not enough to simply confirm roles; instead, they must be explicitly defined to avoid putting individuals in difficult situations. It is especially important for certain individuals to have their roles clearly outlined and named to ensure that everyone understands their responsibilities and contributions. Another key point is the importance of establishing a shared terminology and communication strategy. As the project progresses, it is essential to ensure that all participants, including the City of Mortsel, use consistent language and a shared narrative. This will avoid confusion and ensure that everyone communicates in the same way, particularly when public communication becomes more critical. Lastly, citizen engagement is vital for the success of the project, and it is important to ensure that the citizens' role is properly integrated and highlighted throughout the project.

Table 25: List of actions

Action	Driver	Related Work Package
share business model thermal heat with EnEffect	Steven Laurijssen (Klimaan)	WP3
use WarmteVerzilverd project to inspire the community (and municipality) of our REC Kamp C project during our 'Dream' event on 13/3	Maro Saridaki (Kamp C)	WP3

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share useful tips and insights with interested municipalities/ stakeholders at public events	Teodora Stanisheva (EnEffect)	WP3
use the lessons learnt to make a detailed technical and feasibility study for future projects with Gabrovo municipality for heating	Teodora Stanisheva (EnEffect)	WP3
team up with 'Buurtwarmte'	Justin Pagden (Agem)	WP3
help build awareness on the need to create space to 'grow up together' towards a more citizen-centred approach	Sylvia Breukers (Duneworks)	WP6
need to form a big 'work group' (cf. Architecture workgroup, Brussels)	Maro Saridaki (Kamp C)	WP6
raise awareness on the possibility for leveling costs for connecting to heat networks (lowering engagement thresholds)	Steven Laurijssen (Klimaan)	WP3 & 5
organise an Energy Day this spring and invite several actors that should hear these lessons	Maro Saridaki (Kamp C)	WP6
showcase how new public-civil and public-private-civil collaborations are taking shape, enabling a fair pricing; and discussing how these initiatives need to be facilitated (from a longer term/systemic change perspective)	Sylvia Breukers (Duneworks)	WP5 & 6
policy advocacy work - continuously	Teodora Stanisheva (EnEffect)	WP5
make new partnerships and strengthen existing ones	Teodora Stanisheva (EnEffect)	WP5

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9 Lessons learned for TANDEMS

1. The WarmteVerzilverd project provides valuable insights into the collaboration between local authorities and energy cooperatives in the development of district heating networks. The project highlights both the opportunities and challenges faced in securing local support, ensuring citizen involvement, setting fair tariffs, and navigating relationships with traditional energy market players.

- Heat network projects require significant investment, especially in the early stages. Public funding and strong support from local authorities are important, as these projects carry inherent risks with uncertain returns. Involvement from local governments can help ensure the alignment of the project with broader sustainability and climate goals, making the initiative more attractive to key stakeholders.
- Energy cooperatives can act as key intermediaries in heat network projects, bringing in e.g., financial resources, technical expertise, and community support.
- Effective collaboration hinges on clearly defined roles and responsibilities among stakeholders. Ambassadors or community representatives must be given clarity in their duties and the expectations surrounding their engagement. Moreover, communication strategies should focus on demystifying the cooperative nature of the project to ensure that the community understands its citizen-driven focus and differentiates it from commercial energy suppliers.
- Heat network projects should consider gradual expansion strategies to balance feasibility and financial sustainability. A phased approach (e.g., starting with a small area before expanding) allows stakeholders to manage risks and refine their processes.
- Sharing knowledge among project partners is essential to building expertise and fostering shared understanding. Regular meetings can allow partners to align their expectations and learn from each other's experiences.
- The presence of government officials and media coverage during (heat network) project events help to build legitimacy and encourage adoption.
- By actively promoting cooperative heat projects, local authorities can strengthen public trust and political commitment.
- Smaller energy cooperatives can benefit from partnering with larger, more established organizations to share financial responsibilities and risks. These strategic partnerships can make large-scale projects, such as district heating networks, more financially feasible, while reducing the financial burden on individual cooperatives.
- Local authorities can implement policies that mandate sustainable heating solutions, such as requiring new residential developments to be gas-free and connected to the heat network. Such policies guarantee a consumer base for the network, increasing its attractiveness and feasibility.
- Identifying large, stable consumers for the district heating network, such as industrial plants or public buildings, is essential to ensure the financial sustainability of the network. Agreements with these consumers can provide guaranteed demand for the heat supply, which is critical to justifying the initial investment in infrastructure.
- For effective citizen engagement, communication should be localized and personal, especially in the early phases of the heat network project. Small-scale campaigns can help build trust and ensure that residents feel involved in the process. As the heat

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network project evolves, a broader communication campaign can be launched to e.g., raise citizen capital.

2. Energy cooperatives may face significant obstacles from established energy market players, such as Distribution System Operators (DSOs), who may exert political pressure to prevent cooperative heat network projects from taking off. Establishing clear legal frameworks and understanding the limitations of monopolistic claims can help energy cooperatives navigate such conflicts and secure the necessary agreements for project development.

3. Energy cooperatives need to focus on long-term strategies, particularly in the context of district heating networks, which require a shift from short-term financial models. The success of these projects depends on creating stable, sustainable business models that align with the long-term nature of district heating. This includes considering alternative pricing structures (e.g., cost-price model) and avoiding reliance on fluctuating energy prices. Energy cooperatives should explore frameworks that ensure fair pricing, such as Denmark's cost-covering approach, where heat is sold at cost rather than for profit.

4. As energy cooperatives grow, they face the challenge of balancing their core values with the practical demands of scaling up their operations. Energy cooperatives may accept lower returns on their investments, but this can expose them to financial risks, particularly in the face of market volatility. It is important to carefully assess the trade-offs between maintaining their cooperative principles and ensuring the resilience and sustainability of their operations as they take on larger projects.

5. Energy cooperatives can benefit from engaging with boundary spanners, i.e. individuals who bridge organizations and connect diverse stakeholders.

6. The ‘Growing Up Together’ model is a framework developed to improve collaborations between municipalities and energy communities (cooperatives), particularly in complex projects, such as district heating.
   - Trust and mutual appreciation are fundamental to a successful collaboration, and they can be developed by dedicating time to understanding each other.
   - Moving beyond discussions into tangible action is important for long-term success of the collaboration. Joint projects are key to building trust and a shared sense of responsibility
   - To ensure clarity and continuity in the collaboration, it is important to formalize partnerships through agreements. These agreements help define roles, responsibilities, and expectations, providing a clear framework for collaboration.
   - A shared mission and vision are crucial for aligning goals and ensuring long-term motivation in collaborative efforts. Co-developing a shared vision creates a sense of ownership and commitment from both parties.

   The model also highlights challenges, such as scepticism over the credibility of both parties, unclear professional roles within citizen-led initiatives, staff turnover, and financial instability. By ensuring open discussions around these issues and establishing clear mandates, structured collaboration, and mutual trust can help overcome obstacles and ensure the success of public-civic partnerships.

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Annex 10: Reflexive learning session – Naoberwind (online, 20 February 2025)

1 Participants

Table 26: List of participants

Organisation	Name
VITO	Joeri Naus
VITO	Erika Meynaerts
VITO	Katharina Biely
VITO	Erik Laes
Agem	Maroeska Boots
Agem	Justin Pagden
Kamp C	Maro Saridaki
EnEffect	Teodora Stanisheva

2 Aim

The aim of the reflexive learning session is to share lessons learnt from the TANDEMS' pilot projects with the consortium partners, deepen insights and define actions. During the learning session following steps are taken:

1. The action manager introduces the pilot project and explains the project's context (local, regional, national) to the participants.
2. The action manager explicates 3 to 5 key moments, i.e., events that really changed the course or dynamics of the project in a positive and/or negative way. For each event the action manager explains what happened (event), what the outcomes were (after) and what conditions and factors were important for making this happen (before). The participants take notes while listening (e.g., ideas, questions, feelings, associations).
3. The participants process their thoughts and write down their most important question(s) and their most important insight(s).
4. The participants share their questions with the action manager. The facilitator guides the discussion and uses the systemic iceberg to capture additional insights.
5. The participants share their insights. The facilitator guides the discussion and uses the systemic iceberg to capture additional insights.
6. The participants identify the most relevant "eye-openers" that they can benefit from in their own contexts.
7. The participants translate the learnings into actions (i.e., what changes or interventions are needed to strengthen the value network of the pilot project(s), to catalyse just energy projects at national or regional level, to facilitate wider systemic change at national or EU level?)
8. The action manager reflects on what he/she has learned for their pilot project (i.e., what are the key lessons, what could/should be changed as a result?)

3 Learning objectives

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Participants were asked to share their learning objectives with the presenter (i.e., action manager) ahead of the presentation, allowing the presenter to better tailor the content to focus on the context and key events. Also, both the learning objectives and any questions raised during the session (see section 6) can be utilized by the action manager to tailor and focus the guidance document for the pilots, as part of WP3.

- How did the value network between energy community (Naoberwind/citizens) and landowners take form and what was the role of AGEM in this? (Kamp C)
- Is there a binding agreement between the landowners and how is potential profit shared? (Kamp C)

The learning objectives serve as the basis for identifying lessons learned in Section 9. The learning objectives that were not addressed during the session are reformulated into actionable items in the action table presented in Section 8, if possible and relevant.

4 Introduction of pilot project: the story of Naoberwind (Maroeska Boots, Agem)

The Netherlands, following its commitment to the 2015 Paris Climate Agreement, established a national Climate Agreement in 2019, which set ambitious CO_2 reduction targets. As part of this, a national program for regional energy strategies was launched, requiring each region to define its contribution to the national target of 35 TWh of renewable energy (RES) production by 2030. The Netherlands was divided into 30 different energy regions. The Achterhoek region, encompassing eight municipalities in the eastern part of the country, was one of these areas and tasked with determining its share of the target. After extensive debate and research, the region committed to producing 1,35 TWh of RES by 2030, comprising 0,35 TWh from solar rooftops, 0,21 TWh from solar fields, and 0,546 TWh from wind energy on land. An additional 0,244 TWh was initially undecided but was later agreed to be generated through wind energy due to its efficiency and better integration into the electricity grid.

The search for suitable wind energy locations in the Achterhoek region was a complex process. The Achterhoek municipalities identified specific "search areas" where wind projects could potentially be developed. This decision was based on multiple factors, including proximity to residential areas, environmental concerns, and existing infrastructure. However, some municipalities, such as Winterswijk, opted out, deciding not to commit to wind energy development for the time being. One of the key search areas identified was “Zoekgebied K”, a large section of land where wind energy development was deemed feasible. Once this became known, commercial wind developers began submitting proposals to the municipalities of Berkelland and Oost Gelre. Concerned about the rapid pace of development and the potential consequences, these municipalities decided to take control by developing their own wind energy policy. They entered a formal cooperation agreement in 2022 and initiated a policy development process focused on regulating wind energy projects in their regions.

An essential component of this process was public participation. The municipalities wanted broad support from residents and sought input through surveys, meetings, and information sessions. The discussions focused on three main topics: local ownership and citizen participation (including financial aspects), potential nuisances such as noise and shadow flicker, and the impact on the landscape and natural environment.

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At the political level, the province holds the authority to make decisions on wind energy plans. However, it is open to transferring this responsibility to municipalities that have a well-developed policy and the capacity to implement it effectively. The two municipalities engaged in this process to gain decision-making power and have invested significant effort into it.

During one of the municipality-led participation sessions on local ownership, representatives from several regional energy cooperatives discussed the possibility of taking an active role in wind energy development. At the end of the meeting, five individuals volunteered to explore the potential for a citizen-led wind energy initiative. These individuals were already involved in local energy projects and had knowledge of renewable energy strategies. Their primary motivation was to ensure that residents had control over wind energy development rather than being sidelined by commercial developers. They recognized that if wind turbines were inevitable, it would be better for local communities to take charge of the process and secure the best possible outcomes.

Over the following months, they held multiple meetings, engaging around 80 residents (of the 200 addressed). The goal was to get to know each other, discuss concerns, inform the community, and gauge interest in a citizen-led wind energy project. While many were initially opposed to wind energy, discussions focused on the reality that, if wind development was inevitable, it was better to ensure local ownership and control.

One of the turning points was hearing from local landowners, who shared their experiences with commercial developers aggressively pushing for land lease agreements. These agreements often included strict confidentiality clauses and financial penalties, creating pressure for landowners to sign contracts without fully understanding the implications. Learning about these tactics reinforced the need for a local initiative that would prioritize community interests.

In September 2023, the energy cooperative was officially established with five founding board members. Shortly after, two additional members joined. The cooperative's core objectives were defined in its statutes. It committed to developing wind energy projects that ensured financial and environmental benefits for local residents while minimizing negative impacts on health, nature, and the landscape. The cooperative also set an affordable membership fee of €25 per year and decided to keep a low public profile until the municipal wind energy policy was finalized.

With the cooperative officially established, the next step was to prepare for project development. Naoberwind recognized that it needed expertise to navigate the complexities of wind energy development. It established partnerships with key stakeholders, including Energie Samen (the national association of energy cooperatives) and Windunie (an experienced wind energy company specializing in working with farmers and rural communities). The collaboration with Windunie led to an agreement that the company would receive a 10% ownership of the project in exchange for its support. In parallel, Naoberwind and the municipal administrations kept each other informed.

By November 2024, Naoberwind had successfully negotiated a letter of intent with local landowners, ensuring that their land would be available for Naoberwind’s wind energy projects rather than commercial developers. These agreements were crucial in securing the necessary

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land for the project while preventing aggressive commercial developers from pressuring landowners into private contracts.

By the beginning of April 2025, the municipalities of Berkelland and Oost Gelre are expected to finalize and approve their local wind energy policy. This policy will be aligned with ongoing national discussions on wind turbine standards, such as the required distance between turbines and residential areas. The municipalities have stated that they will not approve any wind energy projects until these national standards are clarified. Once the local policy is officially adopted, a timeline will be established for submitting wind energy plans. At this stage, Naoberwind will be able to publicly promote its project and seek broader community support. With local policy nearing approval, Naoberwind is preparing to enter the project development phase. Key next steps include finalizing land agreements, securing necessary permits, and ensuring technical and financial feasibility.

Throughout this process, Agem has played a supportive but non-stakeholder role. As a regional energy supplier, Agem has expressed interest in supplying energy generated by Naoberwind's turbines but has not been directly involved in decision-making. Instead, Agem has acted as an advisor.

5 Presentation of key events

Key moment 1: Group of 5 initiators formed after session on local ownership for energy cooperatives (9 November 2022)

A smaller group of five initiators was formed following a session on local ownership for energy cooperatives. This session was organized by the municipalities as part of a broader policy process concerning energy development in the region. Several conditions led to the formation of this group. First, commercial developers had already been actively engaging with landowners in the area, knocking on doors and submitting their plans to the local government. This activity prompted the municipalities to collaborate and start off a structured policy process. Another crucial factor was the reluctance of existing local energy cooperatives, which primarily focused on rooftop solar projects, to expand into wind energy (or large-scale solar parks). Given these conditions, it was not expected that an energy cooperative would take the lead in forming a citizen-led initiative for wind energy.

Despite this reluctance, a small group of individuals raised their hands and decided to explore the possibilities. The group consisted of board members from existing local energy cooperatives, regular cooperative members, and a local resident with no formal ties to an energy cooperative but a strong concern for the future of the region. Their first major decision was to narrow their focus specifically to "Zoekgebied K", deliberately avoiding involvement in discussions about other designated search areas.

With their focus established, the group began gathering input and information. They invited experts to share insights on how similar wind energy initiatives had unfolded in other regions, the reactions of local communities, and the strategies used to navigate concerns and resistance. Alongside the core group, a broader group of 17 individuals was involved, including people strongly opposed to wind energy and representatives from environmental organizations such as a bird-watching group. This wider group helped provide different perspectives and contributed to the preparation phase.

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One of the most significant decisions made early on was to distance the initiative from politics. While the initiative was rooted in a broader policy process, they recognized bottlenecks in how the process had been handled. To maintain neutrality and community trust, they adopted the slogan: “We are not about politics”. Their stance was clear: political bodies would decide whether wind turbines were permitted in the area, and only after a decision was made would they step in to ensure proper implementation. This principle became a defining characteristic of their approach moving forward.

Key moment 2: official establishment of Naoberwind (September 2023)

Several conditions led to the establishment of Naoberwind. One of the most pressing issues in the region was widespread distrust among citizens toward local politics. Many residents were sceptical of government initiatives, leading to hesitation and resistance toward energy projects. Additionally, there was a general lack of awareness among the public regarding the energy transition and the role of energy cooperatives. Many people did not even know what an energy cooperative was or how it functioned.

At the same time, the group of initiators was uncertain about how the local community felt about wind energy. While a few vocal individuals expressed strong opinions, most residents remained silent. Even direct outreach efforts faced challenges: out of 200 invitations sent for an informational meeting, only 80 people attended. This made it difficult to gauge the broader sentiment of the community. Another significant challenge was the lack of financial resources. Up to this point, all activities had been carried out on a voluntary basis, but costs were beginning to accumulate, such as renting meeting spaces and providing refreshments. Without official recognition as an energy cooperative, securing funding, whether from member contributions or municipal subsidies, was not an option.

The formal establishment of Naoberwind marked a turning point. One immediate outcome was the clarification of the objectives and approach. By becoming an official entity, the group could articulate its mission more clearly and gain credibility within the community. Another major achievement was securing a membership base of 60 individuals, largely drawn from the group of 80 who had attended the earlier meeting. This demonstrated a level of commitment and interest from local citizens. Financially, forming the energy cooperative opened new opportunities. With legal recognition, Naoberwind was able to approach the municipality for funding. Additionally, establishing Naoberwind strengthened their ability to connect with landowners. As an official energy cooperative, they had more legitimacy in discussions with property owners, who were crucial stakeholders in determining the feasibility of wind energy projects.

Key moment 3: cooperation with Windunie (2024)

One of the main challenges Naoberwind faced was a lack of expertise and experience in developing and operating wind energy projects. While some members had general knowledge about renewable energy, they had no direct experience or track record in large-scale wind energy development, which was a significant gap in their ability to move forward. Recognizing this, they decided early on that bringing in an external partner with the necessary expertise would be essential.

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While it was possible to hire consultants on a case-by-case basis, this approach posed several risks. It would require dealing with multiple parties, potentially creating inconsistencies in the project's direction and increasing the complexity of management. Instead, they saw the value in finding a stable and experienced partner that could support them throughout the entire process, not only during the planning and development phases but also in the construction and long-term operation of the wind turbines.

This led to the collaboration with Windunie, a company that specializes in wind energy and has experience working with energy cooperatives. Although the agreement has not yet been fully formalized, the partnership has already provided Naoberwind with expertise and guidance. One trade-off in this collaboration was that Naoberwind had to give up 10% of its local ownership in the project. While this meant they would no longer have full control over the project, the team considered this an acceptable and necessary compromise. Beyond technical expertise, the partnership with Windunie also gave Naoberwind a sense of security and confidence in their project. While they retained decision-making power, they no longer felt the burden of having to navigate every technical and logistical challenge alone. Instead of completely outsourcing the project, they had a knowledgeable and cooperative partner who shared their vision.

Important to mention is that Windunie is not just a commercial wind developer looking for profit but an organization with a cooperative mindset. They are part of the “Local-4-Local” consortium and signed a charter that aligned with Naoberwind’s values of local ownership and community benefits. This made them an ideal partner, as they understood the importance of balancing economic viability with community interests.

Key moment 4: letter of intent with landowners (November 2024)

The letter of intent with the landowners was important in securing land for the wind project and ensuring that the local community had a strong say in its development. Windunie played an important role in facilitating discussions with landowners, bringing their experience in working with farmers and offering practical examples of how agreements could be structured. This expertise was essential, as negotiations were intensive, involving many debates and meetings.

One of the main challenges was overcoming the landowners' negative experiences with commercial wind developers. Many of them had been approached in the past with offers that did not align with their interests, creating distrust. However, an important factor in this process was that many of the landowners were also residents. Some lived as close as 500 to 600 meters from where the turbines would be installed, meaning they were not just landowners but also direct stakeholders affected by the project.

Another key factor was that the landowners had already organized themselves informally years before. They had formed a group with an unofficial board of five representatives who had been handling discussions on their behalf. This made negotiations somewhat easier, as there was an established structure for communication. However, the group had a unique stance: while some landowners in other parts of the Netherlands had joined wind projects as investors, this group collectively decided they did not want to participate as a formal entity. Individual landowners could still choose to invest personally, but as a group, they did not want ownership in the project. This meant that each landowner had to be approached separately, making

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negotiations more complex due to differing perspectives based on factors such as age, financial situation, and opinion on wind energy.

Despite these challenges, the process led to a strong relationship between Naoberwind and the landowners. Over time, the energy cooperative came to understand the individual positions of each landowner, which allowed for more transparent discussions. With the letter of intent, Naoberwind also gained leverage against commercial wind developers, reinforcing the idea that local communities should have control over how their land is used for wind energy projects.

An essential outcome of the negotiations with the landowners was an agreement on a social compensation scheme. Under this arrangement, all landowners who signed the letter of intent would receive financial compensation if the wind park were eventually built, even if there were no turbines placed on their specific land. This recognized their role in making their land available for the project. Additionally, homes located within a certain distance of the wind turbines would also receive annual compensation. This was a key point in negotiations, as landowners agreed that part of the compensation should go to residents rather than taking the highest possible payment for themselves. This decision sparked debates, as some landowners compared their compensation to higher payouts in Germany and other Dutch regions. However, ultimately, they reached a compromise that prioritized fair distribution over maximizing individual profits.

Despite these agreements, not all landowners were fully convinced. Some were reluctant to sign, while others signed the agreement but remained hesitant about having wind turbines on their land. This remains a challenge, but overall, the process created a more united front among the landowners and set the foundation for the next steps in the project.

Key moment 5: local wind policy to be adopted (April 2025)

While the dates for the municipal council discussions have been set, the outcome is still uncertain. If one municipality decides to introduce changes to the policy while the other does not, it could create complications that can make implementation more difficult.

One of the crucial conditions leading up to this moment is the participation process. From the beginning of 2022, Naoberwind and other stakeholders have been involved in shaping the policy. Their engagement ensures that the policy is not developed in isolation but instead reflects the needs and concerns of the local community.

Another important factor is ensuring that municipal councils are well-informed. Throughout the process, it became evident that many local politicians have limited knowledge of energy issues.

If the policy is adopted, it could place Naoberwind in a much stronger position to move forward with the project. With clear local regulations in place, they will be able to focus on securing financial resources, expanding communication efforts, and broadening their membership base. However, the adoption of the local wind policy still depends on external factors, including national and provincial regulations. For instance, if national policymakers decide to introduce new restrictions, e.g., requiring wind turbines to be placed at a minimum distance of three to four times their tip height from houses, this could make the project impossible in the designated area.

Policy dialogue: Agem and municipality of Berkelland

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At the national level, a legal amendment was introduced that allows municipalities to establish regulations for local ownership. This led to discussions about what exactly should be included in these regulations to ensure that local ownership genuinely benefits the community. While this discussion was initially separate from the wind policy itself, there are plans to integrate it into the wind policy at a later stage.

To explore this further, a dialogue was organised between the municipality of Berkelland and Agem, with the support of Duneworks, to examine how a justice framework could inform the regulation. However, it proved challenging to establish a direct link between the justice framework and the practical elements that should be included in the policy. Despite these difficulties, discussions continued, and in February 2025, another important conversation with the municipality took place.

During this discussion, an important realization emerged: instead of defining local ownership from scratch, it could be aligned with the European definition of a Renewable Energy Community (REC), which is being incorporated into Dutch law. However, regulation should not only define the organizational structure of an initiative but also specify its activities. Specifically, if an initiative is to qualify as a REC, it should engage in the activity of energy sharing, which is set to be defined in Dutch law.

This distinction is crucial because without explicitly requiring energy sharing, an energy community could simply function as a group of investors selling energy on the market for profit. While technically complying with the principle of “local ownership”, this would not align with the vision of broader community benefits. Instead, by incorporating energy sharing as a requirement, the regulation ensures that energy is distributed locally to consumers rather than just being sold for financial gain. By requiring both a specific organizational structure (a Renewable Energy Community) and a specific activity (energy sharing), a framework is created that supports genuine local ownership while making it more difficult for purely commercial developers or profit-driven cooperatives to take over. This is particularly relevant in the Netherlands, where it is common to see a small group of farmers investing in wind energy and calling it “local ownership”, even though the benefits are not widely shared.

6 Q&A

Question: is there a formal agreement between the landowners and Naoberwind or just a verbal agreement? Can the landowners change their minds and decide to work with individual market companies instead?

The landowners have a written agreement that was signed a few years ago among themselves, stating their commitment to sticking together. This agreement is their own initiative. More recently, they signed a separate agreement with Naoberwind, which also holds legal status. While they technically can change their minds, the signed agreement provides a level of commitment that makes such a change unlikely. However, later in the process, each landowner will need to go through a more formalized legal procedure regarding their individual parcels, which will involve notarial agreements.

Question: are there examples in the Netherlands that could serve as a reference for drafting and finalizing agreements between energy communities and landowners?

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Windunie provided guidance on structuring agreements, determining fair compensation, and setting reasonable financial terms for landowners.

When discussing land lease agreements, the key consideration was how much money should be reserved from the wind project for landowners. In the Netherlands, the national subsidy framework for renewable energy, determined by PBL (Planbureau voor de Leefomgeving), sets a baseline assumption for land lease compensation at 2,1 euros per megawatt-hour (MWh). However, after discussions, the agreed-upon rate was raised to 2,65 euros per MWh, which will be subject to inflation. By the time the project begins, possibly around 2031, this amount is expected to exceed 3 euros per MWh.

Another important aspect was determining which landowners would be included in the agreement. The entire group of landowners working together had already agreed to include all landowners within the designated search area. Using a map, it was determined who owned land in that area and what land could potentially be used for wind energy.

Windunie also provided examples of how compensation could be structured for nearby residents. For this project, the idea is being considered to differentiate payments based on proximity. For example, homes within 500 meters of a turbine would receive more compensation than those 800 meters away. A limit of 800 meters has been set, but those living farther away could still receive compensation from a different financial pool separate from the 2,65 euros per MWh allocated for land leases.

Question: can people who live outside of the two municipalities (or "Zoekgebied K") also invest in the project?

When it comes to investment, the approach needs to be broader. At this stage, the focus remains on development money, which is being sourced from within a smaller, more localized area. But as the project progresses, investment opportunities will be open to everyone living in either of the two municipalities and potentially even beyond.

When it comes to financing the wind turbines in the later stages, a significant portion of the required funds will come from bank loans. However, some amount of equity will still need to be contributed directly. This money, which amounts to millions, can come from local citizens and members of the initiative. While the ideal scenario would be to gather as much funding as possible from within the local area, it is also possible to seek investment from a wider pool, even at a national level. In any case, such investments will still be considered as part of the project's equity. Ultimately, while local involvement is preferred, the scale of the required investment makes it necessary to explore funding beyond just the immediate region.

Question: does the municipality own a significant amount of land in the area?

The municipality does not own much land in the area being considered for wind energy. While they do own roads and roadsides, these are not available for wind energy development. In terms of land ownership, the municipalities themselves have very little or hardly any land within the designated area. A key player in this region is Staatsbosbeheer, the national organization responsible for managing ecological and nature conservation areas. Some parts of the focus area are owned by Staatsbosbeheer. However, using this land for wind energy is not ideal due to its ecological value. While it is not entirely impossible, there is a strong preference to avoid developing wind energy projects in these areas.

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Additionally, there is an existing conflict between farmers, who are the primary landowners involved in the project, and nature preservation organizations. Because of this tension, the current approach is to focus on agricultural land owned by farmers rather than ecological areas. However, if the project continues to develop and expand, there may be a need to engage with additional landowners, including Staatsbosbeheer, in the future.

Question: are citizens involved in Naoberwind who also work for the municipalities?

Anyone who is aware of Naoberwind's existence and wants to become a member is welcome to join. Currently, only one known member of Naoberwind is also part of a municipal council in one of the municipalities. This person is involved in the decision-making process regarding the local wind policy.

Question: why does Naoberwind keep a low profile or stay "under the radar"?

While Naoberwind does not want to influence politics, there are ongoing discussions with local administrations to stay informed about the process. However, no outreach has been made to political parties, and there has been no direct political engagement. Within Naoberwind itself, there is debate about whether to take a more public stance. Some board members believe in presenting the organization openly, while others prefer to remain under the radar to avoid signalling political intent.

This strategy may involve some risks. By not actively engaging in public communication, there is a chance of lacking sufficient public support or being perceived as lacking transparency. While transparency is maintained toward members and the local community, Naoberwind has not actively sought media coverage, meaning that the average citizen is likely unaware of its existence. Energy cooperatives in the surrounding area are aware of Naoberwind, and four energy cooperatives have even provided financial support by lending money without interest, which will only be repaid once revenue is generated.

There is concern that the political decision-making process may proceed without Naoberwind having the opportunity to explain its goals and why it believes it is the best option for wind energy development. Meanwhile, an organized group opposing wind energy is actively engaging with political parties and councils, spreading controversial claims, including concerns about wind turbines' effects on health. This could influence local politics against wind energy while Naoberwind remains relatively silent.

If the councils ultimately decide against wind, Naoberwind may have to cease operations entirely. A more proactive strategy would be ideal. However, since Naoberwind is a citizen-led initiative, collective decision-making must be respected.

Question: should Naoberwind exist solely to ensure that, if wind energy is developed, it happens under the best possible conditions, without being the entity responsible for development?

Initially, there was an effort to acknowledge the concerns of those in the area who oppose wind energy. The goal was not to convey a message of strong support for wind energy but rather to ensure that everyone's concerns were taken into account. Over time, the approach evolved. The thinking became that if wind energy were to be developed in the area, it would be crucial to ensure that all residents, including those against wind energy, received the best possible

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outcome. This has now created a dilemma within Naoberwind. The question has arisen whether a different strategy should be adopted.

There is a need to clarify Naoberwind's position, yet even within the organization, opinions on wind energy development vary. This situation is understandable, as the initial principle was to consider all concerns in the area. Now, with political pressure increasing, the question is whether to take a firm position to influence decisions in a way that benefits all citizens.

This presents a risk, as the organization's role will inevitably change. If the local policy is approved by municipal councils in April, Naoberwind will officially become a wind energy developer. The approach will always focus on minimizing negative impacts as much as possible, and development will be not-for-profit. However, despite that commitment, the reality remains that Naoberwind will still be involved in wind energy development, which creates a challenging position. The organization must now consider how to navigate this situation and what narrative to present.

From the beginning, the rationale was that taking control of the process would prevent a worse outcome than if an external party managed the development. The core issue is whether a separation should be made between advocacy and development. At present, remaining under the radar has allowed opposition groups to dominate the conversation. The anti-wind lobby is well-organized and actively influences local politics. The challenge is that Naoberwind's message is strong, but the role of the organization complicates how it can be communicated. There is a question of whether splitting advocacy from development would introduce another layer of complexity. Typically, politicians and policymakers shape policy, while external organizations attempt to influence those decisions. Separating roles in this case could create additional complications rather than resolve the dilemma. The intent has always been to give citizens a voice, yet in practice, they must form lobbying organizations to be heard. The anti-wind movement has done this successfully, whereas pro-wind voices are less organized. The question remains whether a strong lobbying effort should be established, even if that makes direct involvement in development more challenging.

At the core of the issue is the fact that the decision to develop wind energy was made at a higher level. Many of the challenges stem from that initial decision. The participation processes that followed have largely been reactive, placing Naoberwind in an awkward position. If wind energy is going to happen regardless, the best course of action is to ensure local control. However, much of the difficulty arises from the way the decision was originally framed within the regional energy strategy.

There is a broader question about whether the regional energy strategy should have been developed differently, with a more open process that considered social and political concerns alongside technical energy planning. The approach taken so far has largely focused on energy system requirements, rather than treating it as a broader issue of public concern. This has led to tensions in how the policy is received.

The idea of a more inclusive process, perhaps similar to a citizens' assembly, was considered early on in the development of the Tandems project. However, it was clear that municipalities were not willing to engage in such a process. Instead, they opted for a more controlled approach, discussing plans with a limited number of stakeholders before presenting policy.

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This meant that there was no broad public discussion about why wind energy was necessary, how it would be developed, or what alternatives might exist.

This has led to criticism of the local government's handling of the policy process. The participation process began in 2022 with public meetings, but these meetings started with a predefined plan rather than an open discussion. There was little effort to explain the need for wind energy or provide context, leading to immediate resistance from citizens. The lack of a well-prepared engagement strategy made it more difficult to gain public support, as discussions quickly turned confrontational, with many arguing that wind turbines should be placed offshore rather than in local areas.

This highlights the importance of how such processes begin. The way they are introduced has a lasting impact on public perception and participation. If engagement had started differently, with a broader dialogue on energy needs and concerns, the situation might have unfolded in a more constructive manner. The municipality of Zutphen, for example, started this kind of process as a citizen assembly. This process would be easier for an organization such as Naoberwind.

When the municipalities initiated the participation process, even well-informed citizens with an interest in energy matters found it unclear. The objectives of the process, its expected outcomes, and how input would be used were never explicitly stated. The process remained broad and largely informational without a defined structure outlining how decisions would be made. In many ways, the municipalities themselves were also learning through this process. The team overseeing the process lacked a strong foundation in the subject, with key roles being filled by individuals focused primarily on communication rather than energy policy or technical aspects. While the municipalities have likely gained significant insights through the process, it also came at a considerable cost.

Question: why was it difficult to use the justice framework in the dialogue with the municipality Berkelland about local ownership?

One challenge was applying the justice framework to different ownership scenarios. The attempt was to assess how each ownership scenario would score on various justice dimensions, such as distributive justice. However, in every scenario, it was possible to construct both a version that contributed to a just transition and one that did not, depending on how it was organized. For example, a cooperative with local owners might seem ideal, but if ownership was concentrated among a few people whose main goal was to maximize profit, then justice outcomes would be compromised.

Defining both the organizational structure and the activity of an energy community was seen as crucial. If regulations specified not just the type of entity but also its activities, whether it is supplying energy at cost price or exploiting an asset for profit, this would make a significant difference. You can ask yourself the question whether a just activity could lead to a just transition without necessarily having a just organizational structure, or vice versa. One example is the stewardship model, which might lack local ownership but could still be just if its activity focused on providing affordable local energy.

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Rather than using the justice framework as a scoring tool, it could serve as a set of design principles. Instead of assessing pre-existing models, justice principles could be used to shape new energy ownership structures that are inherently more just.

Currently, the municipalities are moving toward a more rigid, checklist-based approach, favouring a defined organisational structure, such as a Renewable Energy Community (REC). Since RECs are already legally defined in Dutch energy law, municipalities could simply check whether a project meets those legal criteria.

The justice framework cannot function as a tool to arrive at a solution that everyone perceives as perfectly just. The idea of using a scoring system is difficult because justice itself is subjective and shaped by political power and decision-making. For example, recognition justice is often discussed in terms of vulnerable households, but it could also be applied to other groups that have strong positions and emotions that deserve consideration. In the end, choices have to be made, and justice cannot be perfectly achieved for everyone. Instead, the justice framework can serve to identify areas for improvement while acknowledging that complete neutrality is impossible.

While it is important to take a position, it is equally crucial to be clear about what that position is and why it is being taken. Rather than using the justice framework as a rigid design principle, it can be used as a guiding tool to inform better decision-making. It provides a way to evaluate how well a design aligns with justice principles, helping to refine rather than dictate solutions. However, there will never be a perfect, universally accepted definition of justice because different people have different ideas of what a just solution looks like. That plurality is a fundamental characteristic of a democratic society, where decisions must be made despite differing opinions.

From a legal perspective, decision-making becomes more structured when there are clear, specific requirements. For instance, when discussing wind energy, it is easier to say that projects must conform to certain legal principles, such as being structured as an energy community open for everyone to join and governed democratically. These legal frameworks provide a concrete basis for decision-making, making it easier to evaluate projects against predefined criteria.

A key challenge, however, is ensuring a level playing field. While democratic organization is important, it must be coupled with efforts to address existing inequalities. The question then arises: should decision-making wait until full equality is achieved, or should action be taken while still striving towards a more balanced system? There is no single, objective definition of marginalization, as different perspectives will shape different understandings of who is marginalized and how they should be supported.

7 Eye-openers and actions

Erika Meynaerts (VITO) found the bylaws of Naoberwind to be an eye-opener as they explicitly address the concerns of the local citizens, including health issues and nature conservation. The bylaws exemplify the core principles of Naoberwind and demonstrate the energy cooperative's commitment to considering not just the interests of its members but also the broader concerns of the wider community where the wind energy project would be

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developed. She found this to be an important and illustrative example of how energy cooperatives can integrate local concerns into their foundational framework.

Erik Laes' (VITO) key eye-opener was the complex and challenging role of local authorities in the development of wind energy projects. He found it striking how these authorities often choose to stay “under the radar” during the early stages of the process to maintain neutrality. Since they must act as impartial arbiters when the official decision-making process begins, they may be cautious about appearing too aligned with any particular (political) party. This realization made him reflect on the complexities of collaboration between energy communities and local authorities, which he now sees as more intricate than initially thought.

Katharina Biely (VITO) noted the challenge of navigating political situations when forming an energy cooperative. The process often involves waiting for opportunities rather than actively driving decisions. She also reflected on the limitations of theoretical frameworks (e.g., justice framework) when it comes to just transitions. While these frameworks can help with reflection, they are not something that can simply be applied as a straightforward solution. Instead, they require adaptation to the specific context. Additionally, she considered the role of EU regulations in shaping energy strategies. She suggested that if decisions about energy strategies were made at a national or regional level in a more inclusive way, it could help avoid situations where communities are forced to deal with decisions that have already been made without their input.

Teodora Stanisheva’s (EnEffect) eye-opener was realizing that when working with policymakers, it is crucial to prepare them to effectively communicate goals and ideas to the public. She reflected on the experience in Gabrovo and Burgas, where local municipal representatives were supported with talking points when introducing new initiatives. This is particularly important when policymakers are not experts in the subject matter. She suggested that there could be training or knowledge-sharing opportunities to help municipal representatives prepare in advance. Additionally, she considered whether it might be more effective for experts to take the lead in communication, rather than politicians attempting to speak about topics they do not fully understand.

Maro Saridaki's (Kamp C) eye-opener was the realization that having a clearly formulated expectation of the region about wind energy, along with measured proof of what is needed, strengthens the argument for wind energy and locally owned wind projects. She also found the case of Naoberwind relevant in terms of a strong sense of place and identity among the people. The fact that the group in question is coherent, even if not consciously formed, suggests potential for growing into a stronger energy cooperative. Maro Saridaki proposed as a key action to share the lessons learned about the Naoberwind case with the Province of Antwerp in frame of the energy landscapes. (action, WP5)

Joeri Naus (VITO) emphasized the significance of how participation and policy processes are initiated. The way these processes begin, sets the stage for everything that follows, making it impossible to revise them later. This underscores the importance of considering factors beyond just energy concerns from the outset. By integrating local concerns, power structures, and perspectives into the early stages of planning and policymaking could lead to a more just and effective outcome. This realization suggests a need for a proactive rather than reactionary approach to policy development. Joeri Naus noted that the fact that the municipality

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acknowledged it had a lot to learn throughout the process, could lead to very different responses. One approach might be for the municipality to withdraw and avoid engaging too much with local developments. On the other hand, a more constructive approach would be to actively gather knowledge from different perspectives, seeking to understand what is happening and how to shape it.

Justin Pagden's (Agem) eye-opener was realizing how the process chosen by the municipality placed Naoberwind in a specific position, something he had not fully considered before. He was impressed with how Naoberwind navigated this situation and believes it should be reflected properly in policy recommendations. Additionally, he noted the importance of incorporating energy sharing into local energy policy. His key action is to lobby the municipality to include energy sharing in the local wind policy and explore whether this format can be applied in other regions in the Netherlands, in collaboration with EnergieSamen. (action, WP5)

Erika Meynaerts (VITO) highlighted the tension between local autonomy and the capabilities required to manage complex decisions. She questioned whether the local authorities had the necessary competence and capacity to handle decisions regarding local wind energy. The municipality might have lacked the expertise and instruments to manage this responsibility effectively, which led to challenges down the road. **Maroeska Boots (Agem)** clarified that despite some shortcomings in local governments' organization of the policy process, the involvement of local authorities was crucial for fostering citizen-led energy initiatives. She emphasized that without this local-level involvement, the process would not have gained traction, and energy cooperatives might not have acted on their own.

One of **Maroeska Boots'** (Agem) key reflections is the need for a structured lobbying effort by Naoberwind. She stressed the importance of starting a formal advocacy campaign and developing a communication plan to ensure that the message of Naoberwind is effectively conveyed. Another significant point Maroeska Boots raised is the distinction between focusing on actions rather than just organizational structure. Naoberwind's primary goals, i.e. producing renewable energy and delivering it locally at cost price, need to be more than just statements of intent. She stressed that it is not enough to simply state these objectives; they need to be broken down into specific actions, and the energy cooperative must then effectively communicate how these actions will work in practice. This would not only help in gaining more support from the community but also clarify for members how these objectives can be realized on the ground.

Table 27: List of actions

Action	Driver	Related Work Package
Lobby to include energy sharing in local energy policy and explore whether format can be applied in other regions with EnergieSamen.	Justin Pagden (Agem)	WP5
Share lessons learned from Naoberwind with Province of Antwerp in frame of the energy landscapes.	Maro Saridaki (Kamp C)	WP5

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8 Lessons learned for TANDEMS

1. The pilot project of Naoberwind provides valuable insights into how **energy cooperatives** can navigate complex renewable energy projects, such as local wind projects, while maintaining local ownership and ensuring community benefit.

    - Naoberwind was founded by citizens who recognized that development of wind was inevitable and wanted to ensure that local communities, rather than external commercial developers, would benefit. By taking initiative, they turned potential opposition into an opportunity for local ownership. Energy cooperatives can follow this model by emphasizing community control, financial benefits for residents, and a fair, transparent decision-making process that prioritizes local interests.
    - The bylaws of Naoberwind exemplify its core principles and demonstrate the energy cooperative's commitment to considering not just the interests of its members but also the broader concerns the concerns of the local citizens, including health issues and nature conservation, of the wider community where the wind energy project would be developed.
    - By actively participating in policy discussions and energy planning, energy cooperatives can align their projects with local regulations and gain recognition as legitimate stakeholders. Early involvement allows energy cooperatives to influence decision-making processes and advocate for citizen-led wind projects that prioritize local ownership, transparency, and community benefits, rather than leaving development in the hands of commercial developers.
    - Understanding and aligning with policy timelines is essential for ensuring that wind projects move forward smoothly. Energy cooperatives need to stay informed about regulatory updates and upcoming decisions. Being prepared to adapt project plans in response to evolving policies and maintaining open communication with regulatory bodies.
    - Energy cooperatives should make membership affordable to increase participation and ensure broad community involvement. Lowering financial barriers helps to ensure that a wide range of residents can benefit from and engage with local wind projects.
    - Energy cooperatives should prioritize building trust within their communities. This involves clear communication about the wind project's goals, benefits, and potential impacts. Providing opportunities for residents to voice concerns and be part of the decision-making process can significantly reduce opposition.
    - Wind energy projects encompass complex technical, financial, and regulatory processes that require specialized knowledge. By collaborating with experienced organizations, energy cooperatives can access expertise in project planning, legal frameworks, and financing options, increasing the likelihood of success. These partnerships also help energy cooperatives navigate potential obstacles and ensure that projects are implemented efficiently. Preferably these external partners have a cooperative mindset and underline the core values of local ownership and community benefits.

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- Energy cooperatives should take a proactive approach by negotiating fair and transparent land-use agreements early in the process of wind energy projects, ensuring local communities retain control over the land and benefit directly from renewable energy production. Energy cooperatives should develop strong relationships with landowners, ensuring that they are informed about the project's benefits and addressing concerns about compensation. Offering fair compensation and transparency can help overcome distrust and resistance. The presence of a written agreement which holds legal standing, is important for fostering commitment and avoiding any future disputes.
- A well-defined sense of place and identity within the community can strengthen energy cooperatives, making it easier to mobilize local support for wind energy. Clear expectations coupled with a coherent identity can build stronger, more committed groups.
- The establishment of a formal cooperative provides legitimacy, financial opportunities, and the ability to secure municipal funding. This official recognition also strengthens relationships with e.g., landowners, as they are more willing to engage with an organized cooperative rather than an informal group.
- The development of wind energy projects requires careful planning, particularly in regions where regulations and community perspectives are still evolving. Rather than rushing into public announcements or financial commitments, energy cooperatives should follow a well-timed approach, ensuring that necessary conditions are in place before proceeding with large-scale development. Such an approach allows energy cooperatives to strengthen their position, gain broader support, and maximize the chances of long-term success.

2. For **local policymakers**, the following points are relevant to consider in the planning and development of local wind projects:

- Local policymakers should adopt a neutral, non-political stance in the early stages of wind development. This approach can help prevent any scepticism from the public, as it ensures that decisions are perceived as community-driven rather than politically motivated. A politically neutral stance fosters trust, which is essential for gaining support.
- Early, inclusive public discussions are important, especially in areas where there is significant opposition to wind energy. By creating spaces for all voices to be heard, local policymakers can ensure that the community's concerns and values are considered. This includes discussing not only the need for wind energy but also how it will be developed and exploring alternative options. Engaging with the public in an open, transparent way from the beginning helps prevent resistance and ensures that the project aligns with the broader community's needs and values. A citizens' assembly, for example, can serve as a model for inclusive decision-making, helping to deepen public understanding and foster broader acceptance of wind projects.
- Local policymakers may not be experts on wind energy, and engaging with complex technical subjects can be challenging. Therefore, providing them with talking points, training, etc. is important to ensure they can effectively communicate the goals and

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details of wind energy projects to the public. By building the capacity of policymakers to communicate effectively, stakeholders are more likely to engage in meaningful dialogue, leading to better-informed decisions and stronger public support.

3. Instead of defining **local ownership in local wind policy in the Netherlands** from scratch, it could be aligned with the European definition of a Renewable Energy Community (REC), which is being incorporated into Dutch law. By requiring both a specific organizational structure (a Renewable Energy Community) and a specific activity (energy sharing), a framework is created that supports genuine local ownership while making it more difficult for purely commercial developers or profit-driven cooperatives to take over. Specifically, if an initiative is to qualify as a REC, it should engage in the activity of energy sharing, which is set to be defined in Dutch law.

4. The **justice framework** is not a one-size-fits-all solution. The justice framework, while valuable for reflection, is not a prescriptive solution and must be adapted to specific contexts. It is a tool for guiding decisions and evaluating how well solutions align with justice principles, but it cannot provide universally accepted answers. As decisions are made, it is important to recognize that justice will never be perfectly achieved for everyone, and decisions will always involve trade-offs. The goal should be to make informed, reflective choices that strive for justice, even if perfect neutrality is not possible. Rather than using the justice framework to assess pre-existing models, it can serve as a set of design principles for creating energy ownership structures that are inherently more just.

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