

DistrictEES Project Report

The results and methodology of
DistrictEES



Colophon

Project Acronym: DistrictEES

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Preface

As a construction company, Van Wijnen is more aware than anyone else of the concerns surrounding climate and energy. As a construction company, we hear these themes coming up more and more often among the residents of the districts we help build. In addition, as humans we are all confronted with concerns about climate change. What does this mean for me and what does this mean for us as a society? Will I still be able to live safely and comfortably in the future? And will this also be the case for our children?

Concerns about high energy bills also play a major role today. Will the average Dutch person still be able to pay his bill or will we all be left out in the cold?

There are major challenges ahead of us and how wonderful it is that we are now going to solve these challenges together. With WDW as a district developer and Van Wijnen as a construction company, we can now take the steps in the right direction. With WDW's district approach, we have the right tools to make districts in the Netherlands natural gas-free.

But to build you also need partners who can provide you with the right advice and feedback. We are therefore very pleased that organizations such as Sité Woondiensten, De Huismeesters and the municipality of Rheden have wanted to participate in the implementation and that organisations such as The Early Birds, Atrienensis and Spatial have given us the right advise to build the district approach. Because without these partners the DistrictEES project would never be a success.

I am proud of the results of the DistrictEES project. We have achieved the pre-set goals and made more than 19 million in sustainability investments. We have already taken steps in three districts and after the rollout of the district approach, many more districts will follow. With the support of a grant from the European Commission, we have also been able to build a business model with which we can increase the impact on the built environment in the coming years and we are working towards a more sustainable society.

I hope you enjoy reading this report on the DistrictEES project. I hope you will be inspired by the district Approach!



Peter Hutten,
CEO Van Wijnen

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Summary

The DistrictEES Project

The WDW **District Energy Efficiency Subscriptions Project (DistrictEES)** was set up to drive investments from different target groups into energy efficiency and sustainable energy projects in city and town districts across the Netherlands. WDW set out to make a plan for targeting entire city districts to participate in making all real estate in the district gas-free, thereby tackling the sustainability challenge of cutting the CO₂-emissions for the built environment in the Netherlands and Europe and doing it faster than at the current renovation rate.

The aim and Objectives of the DistrictEES Project

The main aim of the DistrictEES project was to realise an approach for making entire districts gas-free, covering all major target groups: private owners, housing associations, public buildings and commercial buildings.

- 1. Specific objective 1:** To apply the District Level Approach to the different real estate owners in the districts, thereby removing financial, legal and organisational barriers for the DistrictEES concept.
- 2. Specific objective 2:** To capitalise on the potential of a district level approach.
- 3. Specific objective 3:** To aggregate all the buildings within a district in scalable projects and attract investments.
- 4. Specific objective 4:** To demonstrate the viability of the DistrictEES concept and draft a plan for replication across the European Union.

Key project successes

1. WDW has ensured that more than 19 million euros have been invested. These investments were invested in measures for energy efficiency and sustainable energy production.
2. WDW signed contracts with three different Districts. These are the Overstegen district, the Oranjebuurt district, and Dieren-West district. In total more than 500 homes have been renovated and energetically improved. This involves between 1000 and 2000 residents. The total investments led to a CO2 decrease of 462.960 Kg/y.
3. WDW has been successful in developing a district approach that brings the theoretical approach to a practical approach that leads to execution of measures in energetic renovation. It is seen as a significant initiative within Van Wijnen and could be scaled up nationally to provide district approaches across the country. This brings the climate goals of the Netherlands one big step closer. Because of the district level approach projects and propositions can accelerate. This way districts will get to be gas-free much faster.
4. The Viewer built by WDW makes the work of analysing and making plans for entire city districts much easier and therefore the step from planning to execution will go much faster.
5. Job creation was not a specific topic in the targets of the DistrictEES project but it is nice to announce that an average of 70 fte were (directly) employed in the Overstegen project. And about 10 people with a labour disadvantage worked in the project. This average is our goal to achieve within our other projects. This aim helps the building industry in the growing burden in recruiting technical employees.

Lessons learned

1. **Suitable Geographical Focus:** The Dutch government's climate agreement is translated into a district-centric policy aligning with sustainability efforts. More and more parties see that the district is a suitable geographical focus, because of scale and policy. The scale of a district is big enough to make an impact by volume, and small enough to stay manageable. Additionally a district is a recognizable area by geographical and natural bordering and the sense and feel of a neighbourhood. A district is common practice in the Netherlands.
2. The next phase will be to scale up from municipality to district level plans and vice versa. At this moment WDW can show the effectiveness of the District Level Approach.
3. **Importance of Data:** Comprehensive data on housing conditions and social aspects are vital for developing effective gas-free district strategies. Especially the data of housing associations is important for analysing and developing a plan to make the houses in a district gas-free. These data sets include the energy performance labels, energy consumption, installation and materialisation of the real estate.

4. Online and offline communication is important: With online communication tools we can make the transition to a gas-free district much more tangible for residents. However, tailored solutions and direct communication are still necessary to address individual needs within the district approach. This way we can give information from the housing association and the municipality i.a. more easily to the residents.

5. Varied Financing Paces Pose Challenges: There are two main investment paces in a district: This is the slow and small-scale pace of private homeowners and the quicker, large-scale investments by housing associations. The private homeowners tend to invest a small amount of money over a long period of time. And there doesn't seem to be a predefined long term investment plan. The housing corporation tend to invest a large amount of money in a short period of time based on a long term investment and maintenance plan. This makes forecasting and planning much more predictable. Which is a key element in the District level approach in order to connect and involve other real estate owners. Private home owners are not used to budgeting renovation and maintenance. So the long term planning is non-existent. Therefore activating the renovation needs combined with a financing offer is essential to boost the renovation ambition.

6. There is a difference between analysing and sum-up heat alternatives and really choosing a heat alternative:

A real choice must be made and elaborated before measures in energetic renovation can be implemented. It often occurs that there has been made a choice for a heat alternative, but at the same time this choice is still subject to debate and thus put on hold. Because of this debate the effort for making further plans towards implementation are set on hold. This is detrimental for making the step towards implementation. On the other hand, non-regret measures such as isolation are growing in acceptance. because these measures are relatively cheap, easy to execute, effective and don't stand the risk of divestment in the way.

7. Commercial Objectives Drive Implementation: Van Wijnen's focus on practical implementation of energy measures enhances the feasibility of district-level sustainability, contrasting with the research focus of academic institutions or consultancy firms. The creating of a practical model would not be possible without EU funding.

Project team and partners

The Project team primarily consists of:

- The WDW team, which has been working on the DistrictEES project and was the driving force behind the project.
- In addition, this team collaborated with a group of temporary and part-time staff lent by the mother company Van Wijnen. As a construction company, Van Wijnen also handled the preparation and execution of energetic renovations.
- Furthermore, other parties assisted in the execution as partners of WDW. These include entities that contributed ideas and provided investments for projects in the districts. This refers to municipalities, housing associations, and network operators.
- Lastly, there are also external execution partners who have been involved in the project for an extended period. This includes parties responsible for the construction of tools and the provision of knowledge.

The DistrictEES project has mostly been worked on by WDW and Van Wijnen.

WDW is a small subsidiary of Van Wijnen and was the taskgroup that developed The District Level Approach for Van Wijnen. This means developing an approach and businesscase for energetic renovation of districts. The execution of the energetic renovation measures is handled by Van Wijnen as the construction company. Van Wijnen is a construction company with establishments nationwide.

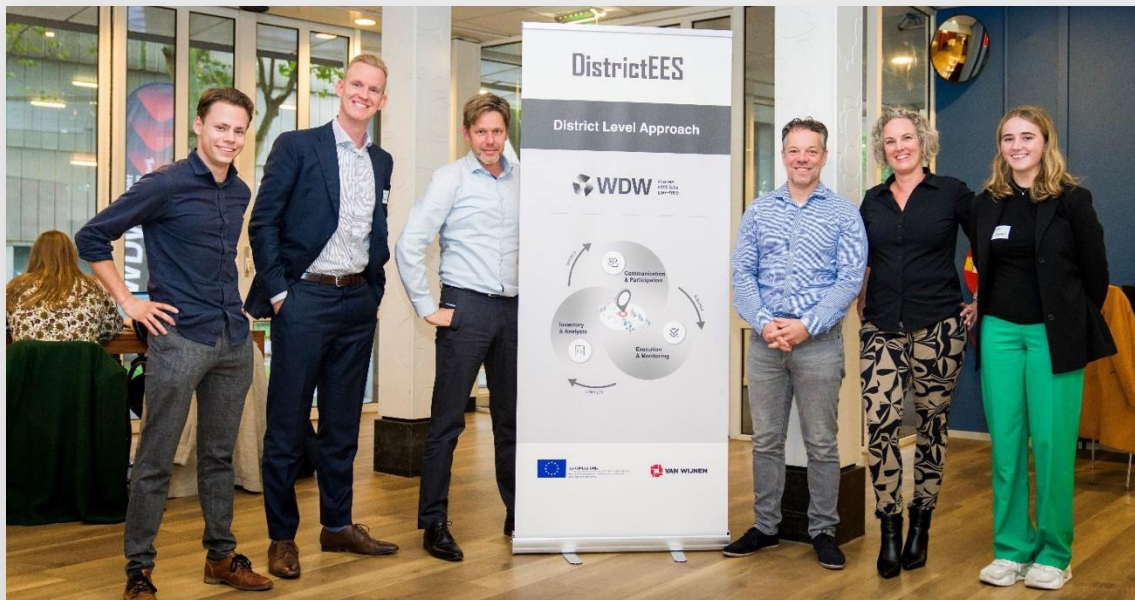


Figure 1 From left to right: Tristan Dekker, Julian Huizinga, Christiaan Logtenberg, Hendrik van Zantvoort, Esther de Jager and Noa Ostendorf. This is partly the project team of WDW that worked on the DistrictEES project.

Project Background

This chapter provides an explanation of WDW's original vision for the district level approach, the associated objectives and the new observations during the project.

Initial background

Given its large share of the total energy consumption in the EU (~40%), the building sector has a major role to play in the energy transition. However, the current average renovation rate in the EU is around 1% per year. This means that renovating the entire EU building stock would take roughly 100 years.

Acceleration of the renovation rate requires new organisation and financing models. Energy Service Companies (ESCOs) are seen by many as perhaps the most promising model to boost the market. However, this model has fallen short of realising its potential. Perhaps the most challenging market for ESCOs is the housing market. In exactly this market, WDW has developed in 2017 a very successful EPC model that has in a short time built a solid reputation in the Dutch market: The WoningAbonnement (WOAB, loosely translated as 'Energy Efficiency Subscriptions').

Several hundreds of houses have been renovated based on this model. However, these are mainly fragmented projects, financed with public money. Both the scale and the dependence on public finance hinder a fast scale up and replication of the concept. Moreover, the fragmented nature and small scale of the projects are

increasingly problematic due to the currently tight construction market. Construction companies are only interested in larger projects that are geographically clustered.

For these reasons, VAN WIJNEN is eager to scale up to a volume that is sufficiently large to attract private investors and to be of interest for the construction sector. More specifically, VAN WIJNEN wants to cluster the projects geographically by targeting entire city districts based on the paper of Co Verdaas¹. Attracting private investors enables rapid replication and upscaling of the concept in The Netherlands and across the EU, the ultimate objective of VAN WIJNEN.

In The Netherlands, as well as the EU, there is an increasing interest in district scale renovations. District level projects have major advantages. "Where energy is concerned, the neighbourhood or city cannot be considered simply as an aggregation of buildings". Besides economies of scale, advantages include higher conversion rates among participants (peer pressure, FOMO) and the ability to offer cheaper and more efficient district-level technical solutions.

1 Energie & gebiedsontwikkeling: een winnende combinatie

In addition to the arguments above, there is another crucial argument for district level renovation in The Netherlands. There is currently a strong desire in the Dutch society, as well as the government, to accelerate the phasing out of the natural gas usage in The Netherlands.

The phasing out of natural gas is laid down in the energy agreement and this will be brought into legislation. On 1 July 2018, the Energy Transition Progress Act (Wet Voortgang energietransitie, Vet) entered into force. Together with an amendment to the Gas Act, this Act provides for the abolition of the gas connection obligation for new construction. It is expected that in 2024 the Collective Heat Supply Act (Wet collectieve warmte Wcw) and the Municipal Heat Transition Instruments Act (Wet

gemeentelijke instrumenten warmtetransitie Wgiw), will be introduced, together with a subsequent amendment to the Gas Act. These laws ensure the further phasing out of natural gas. This movement in legislation is not only driven by climate change concerns, but also by earthquakes in the north of the country, due to natural gas extraction.

Maintaining a capital-intensive gas grid for just a few end users is not a sustainable business model. For these reasons, a district level renovation is the only efficient approach to energy efficiency investments in the Dutch building sector. This mechanism can also be observed in countries outside the Netherlands, where district level grids for natural gas, heating or electricity demand a district approach to renovation.

New observations

It was observed that the scale of a district would indeed play a significant role in the sustainability approach of the Netherlands in the built environment. By developing a District Level Approach, DistrictEES was able to formulate an effective response to the new phase of the energy transition in the built environment: the transition from theory to practice. At the same time the District Level Approach seamlessly aligns with the rise of the district-focused approach of governments.

The district focused approach has not only penetrated government policy. The approach is now also being taken up in a broader stakeholder field. Various other parties are starting to realise that the district is an important scale. The grid operators are a good example of this.

The larger grid operators are, just like WDW, working on visualisation tools. In their case it's for the infrastructure, developing an approach that involves collaboration with the market and other stakeholders. A good example of this is the District Analysis tool from WDW's LoS partner Liander ².

2 <https://www.liander.nl/buurtanalyse-tool/meer-informatie>

This makes the state and development potential of the network and the prioritisation transparent at the district level. With the support of an area manager, the information can be translated into an approach that fits the integrated district approach.



Figure 2 Screenshot taken of the District Analysis tool of Liander. It shows a map with buildings and their energy label.

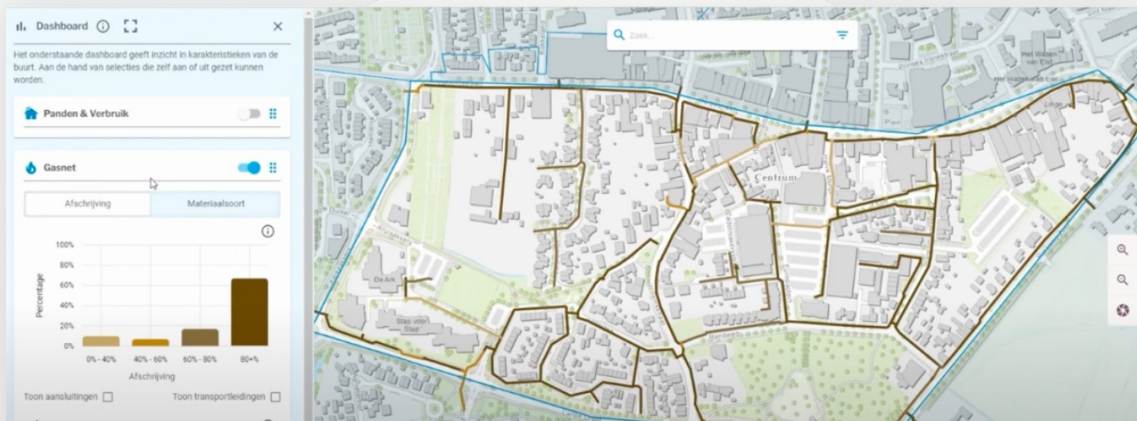


Figure 3 Screenshot taken of the District Analysis tool of Liander. It shows the gasgrid and the degree of depreciation.

The status and developmental potential of the network, as well as the prioritisation, are made clear at the district level. With the support of an area manager, the information can be translated into an approach that aligns with the comprehensive district approach. Enexis is also engaged in this approach and is developing a similar tool ³.

3 <https://ecet.mltscenariotool-tst.enexis.nl>

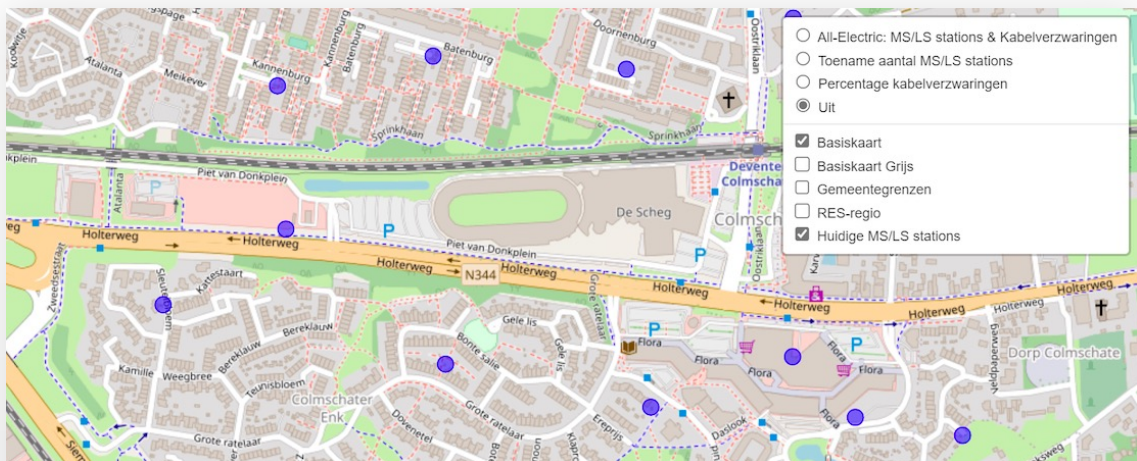


Figure 4 Screenshot taken of the district tool of Enexis. It shows transformer houses in a district.

This is not only due to the increasing effects of climate change, as can be seen throughout Europe. But it's also due to the war in Ukraine, which exposed Europe's reliance on Russian gas. In the Netherlands, this has led to higher gas prices and energy poverty. As a result, the urgency has only increased, and an accelerated sustainability approach for the built environment has become indispensable.

The effects of this urgency can be seen in the rapid increase of governmental policies urging for more investments in the energetic renovations of the Dutch built environment. Which means that the built environment will have to move away from gas and be more energy efficient on a faster pace. This makes the District Level Approach even more interesting.

Objectives

The main aim of the DistrictEES project was to realise an approach for making entire districts gas-free, covering all real estate owners: private homeowners, housing associations, public buildings and commercial buildings.

The unique district level approach has major efficiency advantages not seen before on this scale. The project will have significant impact on the market, both in terms of direct energy savings and in terms of the showcase element that comes with a district level renovation. By making an offer to the districts and organising a standardised approach, districts can be addressed quickly and at a large scale.

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4. **Specific objective 4:** To demonstrate the viability of the DistrictEES concept and draft a plan for replication across the European Union.

Concept and methodology (District Level Approach)

Initially, the idea was that a financed offer based on the housing subscription (WOAB.nl) could serve the four target groups of real estate owners. This emerged from the ambition to achieve large-scale sustainability of the Dutch real estate stock to be gas-free. However, based on our research, “Financiële mogelijkheden voor de verduurzaming van vastgoed”, it became clear that financing itself was not the biggest challenge, but rather unlocking financial resources and financing structures were the issues that needed to be tackled. Discussions with parties showed that investors saw too great risks in pre-financing the energy measures in entire districts.

At the same time, subcontractors did not want to guarantee the effectiveness of the measures they would implement. These two main reasons made pre-financing and thereby financing entire districts a problem.

The technology for sustainability has already been developed. Financial resources are generally available at most of our stakeholders as shown in our report, these are mostly public funding and subsidies. The main challenge is connecting this expertise and funding to practical execution. This insight led Van Wijnen to move away from the idea of developing an Energy Efficiency Subscription for the four different target groups.

More important is selecting the right districts, creating a long-term plan, and committing to the district for an extended period.

For this purpose, various models and criteria have been developed, which are discussed later in this report. These include lead classification, district analysis, and data visualisation (viewer and District plan), the online and offline visitor centre, and the sustainability compass (formerly known as the menucard for energetic measures).

In our research into the available financial structures for real estate sustainability, we found a significant number of schemes for funding property sustainability.

The main conclusions divided across the different target groups are:

- Private homeowners generally initiate sustainability individually or collectively through an energy cooperative. The motivation is partly the combination with maintenance work on the home (replacing frames with double glazing) and partly a way of investment by which the residents can save money on the energy bill (insulation and solar panels help to save money on the energy bill). The measure's financing is often with personal funds or a loan, combined with a subsidy scheme.
- Housing associations generally initiate sustainability as part of the multi-year maintenance plan at the complex level. Exploitation plays an important role here and is therefore the driver. In addition, the financing of housing associations is fundamentally different from other property owners. Housing associations use the WSW (Waarborgfonds Sociale Woningbouw, translated Social Housing Guarantee Fund). For housing associations, the WSW is a mutual guaranteed society with a solid guarantee system. They provide guarantees on loans to associations. That means the fund takes over the payment obligations (interest and principal) of the loan if the association can no longer meet them. By standing guarantee for loans, housing associations can attract loans more cheaply. This helps associations carry out their core activity: building and maintaining social rental housing. The WSW covers this guarantee with various buffers and safety nets. Thus, the participating associations have their own capital buffer and cash flow. The WSW's risk capital is the first buffer to cover claims on the guarantee. If necessary, this reserve can be supplemented by liquidating the collateral of the struggling association. The second buffer is the mutual guarantee of associations, fulfilled by an OBLIGO facility. An OBLIGO supports corporations to create a buffer or reserve for investments. Another strong point of the guarantee fund is that agreements have been made with the State and the municipalities (the 'back catchers') that, if necessary, interest-free loans can be provided.
- Commercial property owners generally initiate sustainability individually, possibly supported by trade associations or SME organisations. The driving force is often the combination with maintenance work on the building (for owner-users and mutation for owner-landlords). This usually happens when a tenant is leaving the property and the asset is available for an upgrade, or the landlord decides to change the function of the asset. The measure's financing is often with the entity's funds or a loan, combined with a subsidy scheme. The motivation for sustainability is often an economic consideration (the functional or financial exploitability of the building).

- Owners of public real estate generally initiate sustainability as part of the multi-year maintenance plan. The measures' financing is often part of the multi-year budget with support from the BNG (bank for Dutch governments) and subsidy schemes.
- Grid operators are driven by the age and energy burden of the network. If the energy burden increases (congestion), the need for investments in the network will increase, and the work will be included in the planning. In almost all cases, this is demand driven. Proactive initiative is still rare. However, we are slowly seeing the realisation among grid operators that proactive collaboration with the various stakeholders is necessary to work efficiently and effectively. The focus here is mainly on the execution of the work. More collaboration with other stakeholders will be needed to make the work forecast clear. This also concerns the prioritisation of work, including the measures to be taken.

Since these financing methods are all different and secured through various channels, the necessity for a revolving sustainability investment fund has proven to be minimal. The primary approach is to align the offering of sustainability measures with the financing options available to the different target groups.

Private homeowners

The key conditions for financing structures are the performance guarantees. These are covered by the insurance fund from Van Wijnen. For the private homeowner, Van Wijnen and WDW continue working on the housing subscription from WDW's LoS partner WOAB. For the energy performance, it should be noted beforehand that there is not yet a complete solution for user control. Technically, the performance of the measures can be well monitored, but the behaviour of the user/resident cannot be controlled.

Of course, behaviour can be influenced with smart techniques and incentives, but complete control is (also considering privacy legislation) impossible. This is therefore not considered in the district-focused approach. If the implementation is not done by WOAB but is undertaken within the own organisation, we work with an insurance fund to cover the risk of the energy performance.

Insurance fund

The principle behind the insurance fund is a reservation within the business operations for the realised projects. This reservation can be used to compensate for any projects where the energy savings are not achieved. This does not mean that all projects are offered according to this principle. The traditional request for proposal remains the common

practice for now, but the organisation is at least prepared for this variant of execution. If a project with an energy performance guarantee does not meet expectations, it is first investigated to what extent the lagging performance is a result of the renovation carried out. For this, we follow the steps below.

1. Which energy carrier is responsible for the excess. If there is still a gas connection, the differences in gas or electricity consumption can be examined.
2. Has there been a change to the initial situation? In some cases, there has been a change of the usage. The family composition may have changed (a studying child returning home) or energy-intensive appliances have been added (for example, the installation of a patio heater or a jacuzzi). If this is the case, this can explain the increased energy consumption.
3. The execution of the measures is examined if there has been no change compared to the initial situation. Have the measures as proposed been implemented, and have these activities been carried out correctly? Does the equipment function properly? If not, recourse will be taken to the guaranteed conditions agreed upon with the supplier and/or executor.

If the above steps do not reveal a cause or liability, a decision will be made in consultation with the customer for the restoration of the work, or a financial compensation can be agreed upon. In general, it can be stated that the performance of an implemented sustainability measure becomes visible within a seasonal cycle. If no claim has occurred after this period, it can be assumed that the implementation is in accordance. With this, the reservation can be gradually reduced. To be cautious, the reservation for each object carried out is reduced by 25% annually and released for additional sustainability investments. This gives the reservation a revolving character.

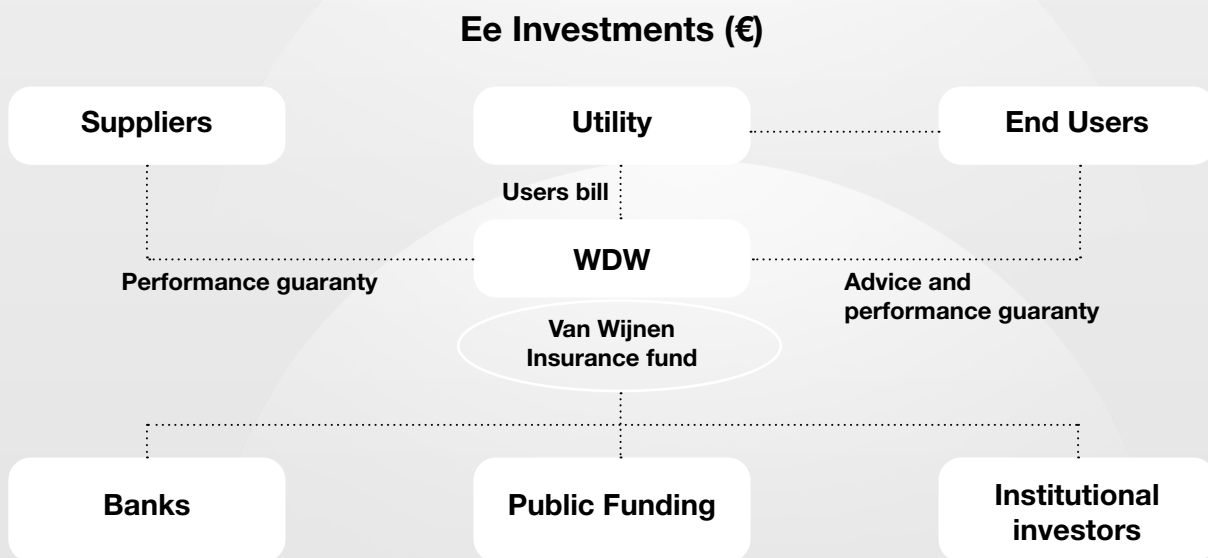
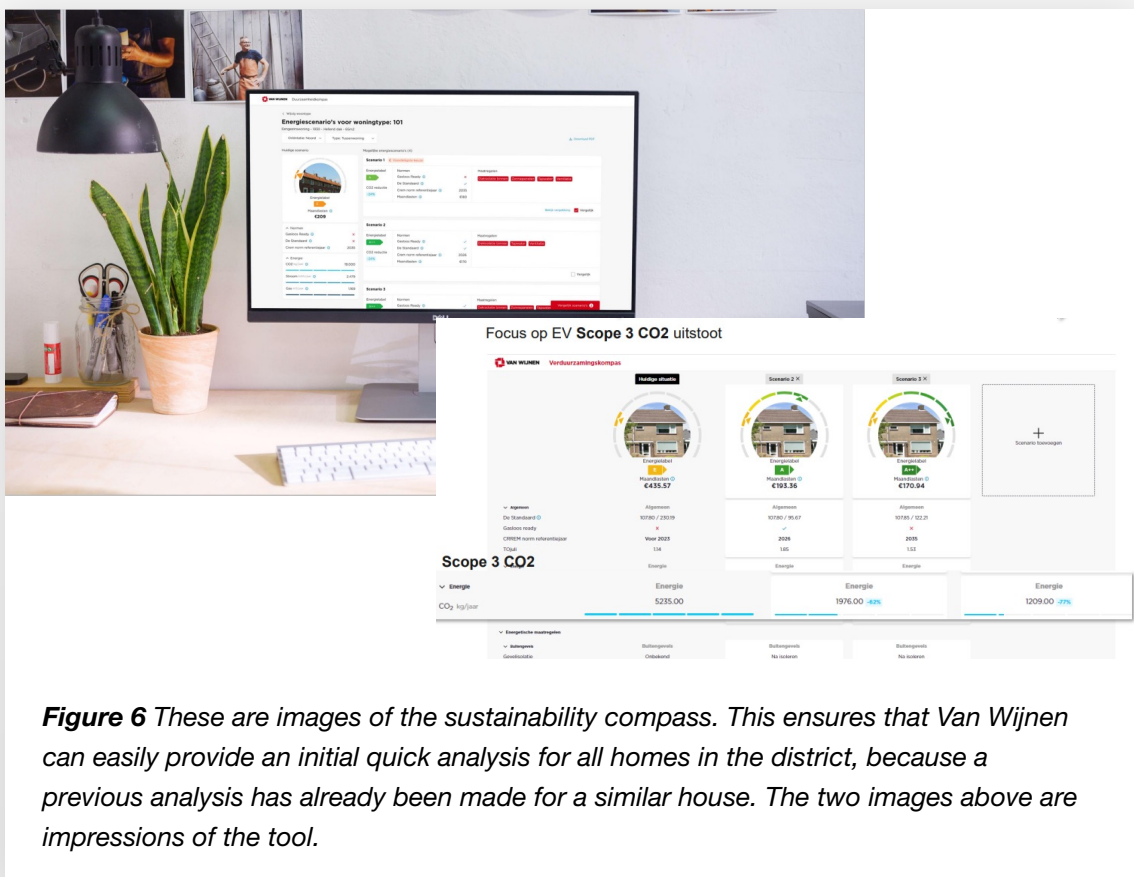


Figure 5 Above is a visualisation of the setup of the insurance fund.

Housing association property

The energy performance of housing association property is different. Apart from the fact that this performance is still only requested to a very limited extent, we are working on further developing the answer to this future demand. In the project phase, we started standardising the different types of housing under corporate ownership. For this purpose, we have developed a menu card.

This has been very positively received by both the internal organisation and the customers (housing associations) but still needs to be deepened. In particular, the digitization of this menu card is essential. In the last phase of the project, we made a huge leap forward and translated the menu card into a digital tool; the Sustainability Compass.



With the sustainability compass, we are able to translate the various housing types into an offer, accumulate them, and provide them with the energy performance. It is still too early to use this tool for offering and guaranteeing the work and performance, but the tool is already being used with customers to present the different scenarios, thereby establishing a preferred scenario for the work to be carried out.

By applying the tool, we can gain experience in working with it and make it more applicable. On the other hand, we fill the sustainability compass with measures that can be applied to other houses, customers, and geographical areas.

Approach for commercial and public real estate

For the sustainability of commercial and public real estate, the housing subscription and the sustainability compass are not suitable. This is mainly due to two important aspects: the lack of volume and repeatability. In addition, owners are difficult to direct in the initiation of sustainability since, generally, the interventions in the buildings are dictated by the functionality of these buildings, their profitability, and any potential future functions (transformations).

Experience shows that in the districts where we are active (see chapter Projects and explanation), the share of commercial and social real estate is limited. There is a great diversity in the appearance of this real estate. In the districts, we sometimes encounter swimming pools, community

buildings, health centres, sports halls, and other buildings. It is almost never the case that these buildings have any form of repetition in them. This makes a uniform sustainability measure almost impossible, at least it does not pay to develop an integrated approach for this. That is not to say that we do not serve these owners. On the contrary, with the various disciplines of our parent company Van Wijnen Group, we can serve this excellently. For this, we employ custom work from Renovation & Transformation, the construction company, and project development. These disciplines fit seamlessly into the integrated district approach.

Integrity

With the integrated district approach, WDW is increasingly developing into a one-stop-shop with an area-focused approach.

All property owners in a specific district can turn for support and execution of the energy transition. With this, we mainly take on the role as a provider of sustainable measures for real estate. However, we can also connect to the broader development in the district. For instance, in the areas of biodiversity, social cohesion, mobility, and urban planning. But these disciplines are explicitly not part of our business model.

The district approach makes sustainability tangible by bundling volumes, which brings cost efficiency.

The long-term involvement in a district makes it more attractive for property owners to participate.

Through the use of the Horizon 2020 grant, we have been able to develop systems that are scalable and repeatable.

As a result, we can create district plans more quickly, serve more districts, and accelerate the energy transition.

WDW's systems unlock the data that are the bearers of cooperation in a district. This allows us to make transparent which measures can make the district free of natural gas, and this can be translated into a substantiated approach, contributing to the EU's ambition to accelerate the sustainability of the built environment.

Overall methodology

District level approach WDW

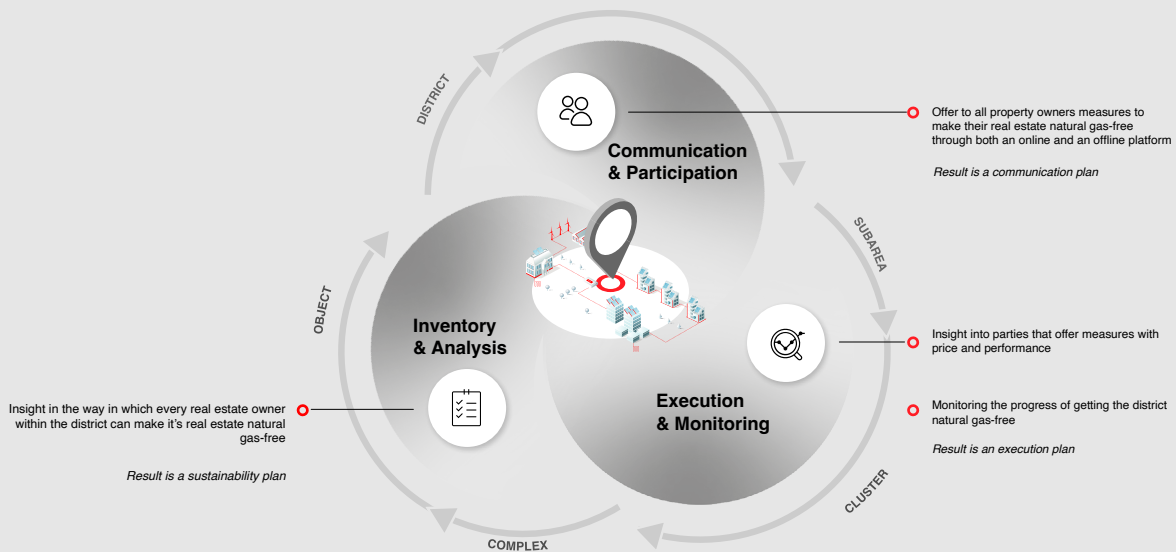


Figure 7 Above is a visualisation of the district level approach model of WDW. It shows three segments: Inventory & analysis, Communication & Participation and Execution & Monitoring.

Summary of the district level approach model

In the above visualisation is the model of the District Level Approach. Contrary to what the model suggests, it is not a phased approach of three consecutive steps. Rather, it is an integral approach that gradually merges over time, with the segments overlapping and running parallel to each other. The model exists of three segments: Inventory & Analysis, Communication & Participation and lastly Execution & Monitoring. In the first segment we inventorize all the data of the district and we make an analysis of the data. With this data we form a plan and we identify the measures for making the district gasfree. In the second segment we communicate with all the stakeholders and namely the residents of the district about the measures and options for making their home and district gasfree. In the third segment we execute the measures to make the district gasfree and we later monitor if the measures have worked.

The first part of the District level Approach model is the **inventory and analysis**.

This involves making an inventory of general and public data and specific data from, for example, the housing association and the grid operator. The inventoried data is analysed, and a picture of the current situation is sketched. Based on this, WDW formulates an initial impression of the possible natural gas-free scenario of the district in the sustainability plan. During the inventory of the district, we also make a subdivision of sub-areas in the district. Following the sustainability plan, the district is then made natural gas-free step by step and sub-area by sub-area. This way, the area-focused approach becomes scalable and manageable, and we remain involved in the district for the long term.

An important tool in the inventory and analysis is the viewer (see the image below). In this tool, the most important data streams for the district approach are made transparent. These include the public data sources (provided by the Dutch government) with energetic characteristics

of buildings such as energy labels and years of construction, as well as the non-public data from housing associations with specific energetic data for houses. Based on this data, a plan can be made to make the largest share of the houses in a district natural gas-free.



Figure 8 The Viewer of Visual twin of WDW with a view of the Overstegen District (the project in Overstegen will be elaborated in chapter Projects).

In the above image is a screenshot of the WDW viewer. With this viewer, WDW can make the energetic data streams from housing associations and public data streams transparent in a so-called "visual twin."

A visual twin is a digital version of the district where different data layers can be overlaid. Moreover, the images from the viewer can be used to conduct discussions with other stakeholders in the district.

The viewer

The viewer is built on the 3D tiles of the Technical University of Delft. They built the Netherlands in a 3D model. With the viewer, WDW can call every part of this 3D model and therefore every district in the Netherlands. By applying the public data of houses, gridsystems and even trees we can make the district much more alive and visible. This makes it possible to analyse the data in districts and the viewer makes it much easier to communicate with stakeholders and residents. In the near future the Viewer is open to connect with other visualisation tools. like the tools for infrastructure (grid operators) and planning tools like ruimtelijkeplannen.nl

With this initial view, we also start the **communication** and **participation**. This is the second phase in the process. Here we involve the stakeholders and property owners in the district. This includes the municipality, energy cooperative, housing associations, private homeowners, and entrepreneurs.

We use an online and offline visitor centre for this. This tool enables us to present the information and plans in a clear and recognisable way. By uniformly designing the online and offline environment, a connection with the surroundings is created, and we can bring the information close to the people.

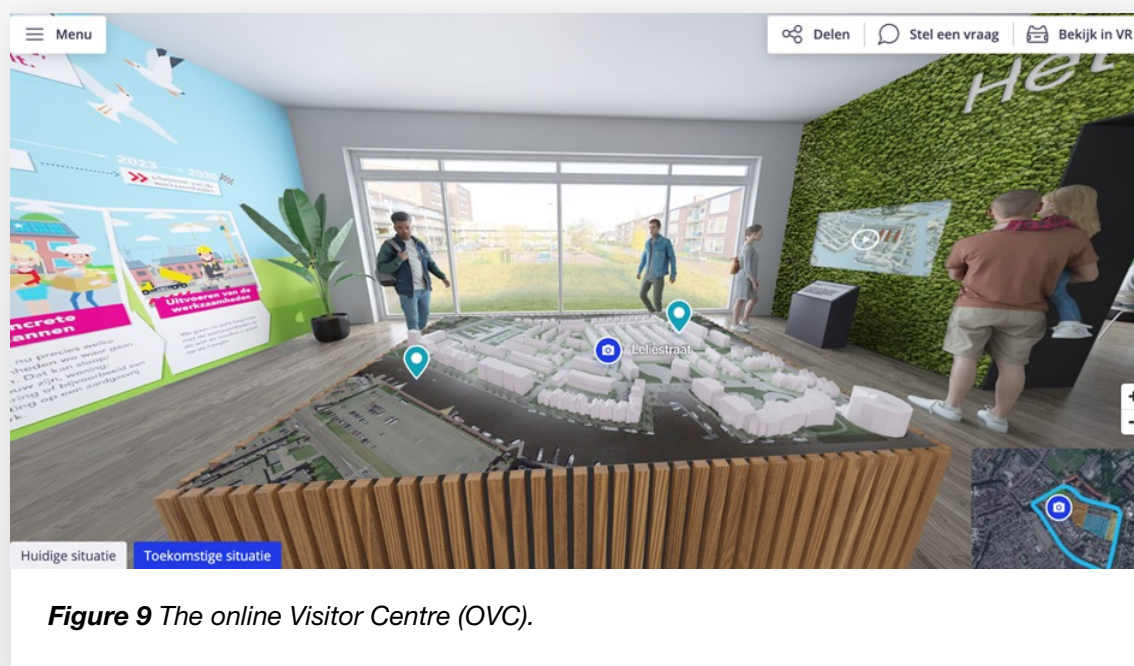


Figure 9 The online Visitor Centre (OVC).

The Online Visitor Centre (OVC) allows us to present different scenarios and make the impact of measures transparent by transporting the data from the viewer into the OVC. Here, market parties can also be engaged so that the energy measures can be translated into quotations and the connection can be made with market parties. This is where WDW's approach distinguishes itself from the majority of integral approaches offered by consultancy firms. WDW's approach is truly integral, encompassing inventory, analysis, communication and participation, and the actual implementation or **execution** of measures. What we promise at the front end, we can deliver at the back end.

Another element that distinguishes WDW's approach from other methodologies is the long-term approach and involvement in the district. By using various tools and **monitoring** the proposed approach we can incorporate the measures and their impact in the route to becoming natural gas-free. A major misconception and a hindering thought is that the transition must be sudden and on a large scale. This approach is too large-scale and unaffordable. By taking well-considered and appropriate steps, we can limit interventions in the districts, spread the financial impact, and search for a scale that is manageable for everyone.

Data as guideline for the District Level Approach

An important foundation for the District Level Approach is data. Without data, the first step of inventory and analysis is not possible and without this first step, the following steps are also no longer possible. Data, and especially suitable and well-maintained data, is the guiding principle for the District Level Approach. Especially the data of the housing associations is important. Their data is quite extensive on the part of energy efficiency of their houses. Because of this data WDW can make a plan for the measures that have to be implemented in the district. Collecting the housing data occurs in the initial planning process. Analysing and inventorying the district is actually about inventorying and analysing the data of the district. The same data is then transported to the next step of communication and participation, where visualisations based on data are shown to the residents of the district and thus provide insight into the necessary measures in the district. The conversation is therefore conducted with residents based on data. In the final step of implementation and monitoring, the data is used as input for implementing measures and the data is then used to monitor whether the district has been made natural gas-free.

A district consists of a number of property owners and even more stakeholders. All these target groups require a different approach. Ultimately, we all look at the same district, but each target group looks at it through a different lens, each with his own vision. This often calls for a diversified approach. We have translated this approach

into a customer journey. The housing associations, as we have explained earlier, are the most important players in the district. Because a housing association can bring in a large volume of energy measures, it acts as a motor starter. The intervention that we may carry out for the association can act as a catalyst for the other property owners.

WDW Customer journey

Government and Corporations

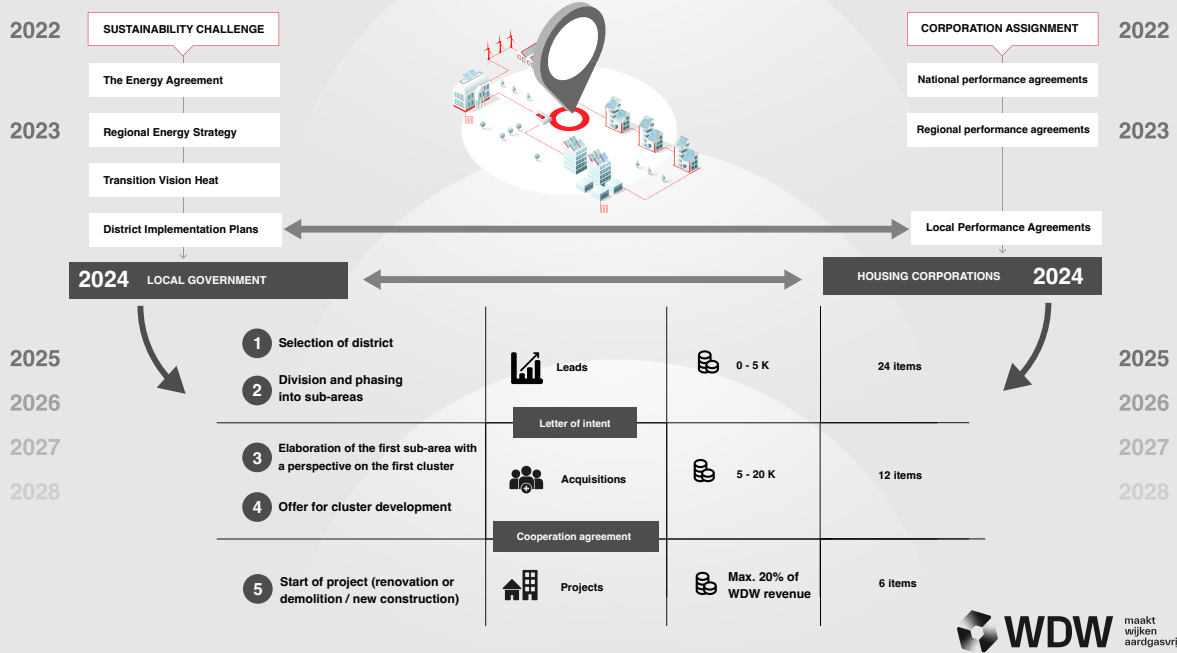


Figure 10 In the image above, we have developed the customer journey for the two most important stakeholders/target groups: the municipality and the housing association. In the text in white boxes the route through Dutch policies of housing associations and municipalities is noted. In the table downbelow the customer journey is showed. In this table we have added three conversion stages. In the first stage we get in contact with the stakeholders and in the last stage we sign the agreement. After this stage Van Wijnen can execute the measures to make the homes and district gas free.

The reason we have highlighted these two stakeholders is that these parties are decisive for the success of a district approach. Their input is important because:

- The housing association is familiar with complex renovation and collaboration with grid operators and can tackle a hundred homes in one project, where the homes are sustainably upgraded in a large-scale approach. Meanwhile, the individual homeowner benefits more from a phased approach, where measures are adopted individually over the years. These different scales can coexist perfectly.
- The municipality plays a crucial role in terms of policy and facilitating the energy transition. Through the well-known cascading from the Regional Energy Strategy (RES), through the Transitional Vision Warmth (TVW) to the District Implementation Plan (WUP), the municipality directs the TVW and WUP's. They also facilitate the execution plans in the districts and their implementation with communication, financial resources, and regulation. However, even if a municipality does not facilitate but also does not hinder, the integrated district approach can still proceed.

An example from practice (Overstegen, Doetinchem):

A housing association plans to renovate and make a complex of xx homes sustainable. The homes being addressed are a mix of connected association homes and speckled ownership (a block with homes from both the association and private homeowners). Based on WDW's district analysis, the housing association chooses a renovation and sustainability scenario. With this sustainability scenario, private homeowners are approached in collaboration with the energy cooperative with a proposal for the sustainability of the private property.

Because the implementation of measures for the association can be combined with the implementation of measures for private individuals, significant efficiency benefits can be achieved, positively affecting the affordability of the measures. Insulating the facades of connected homes all at once is much cheaper than individually insulating a facade per home.

Timeliness in the communication and participation process is essential here. Each property owner has a different decision-making and financing process. The significant benefits of the integrated district approach are therefore found in:

- The integrality of the inventory and analysis. This forms a complete picture of the district and translates it into individual solutions.
- By opening up communication and participation for the entire district, a sense of community is created, fostering a sense of joint action and a fear of missing out (FOMO). "Now is the opportunity, and the offer is there; the neighbours are doing it, so maybe it would be wise for me to join in too."
- Scale advantages and efficiency result in cost and time savings, which reduces inconvenience in the district and lowers expenses.
- The district approach provides access to the financing options available to pay for sustainability measures.

In addition to approaching residential property owners (private homeowners and housing associations), we also contribute significantly to the development of infrastructure. In the Netherlands, the pace of the energy transition is largely determined by the extent to which the energy infrastructure can be adapted to demand. In recent years, since the construction of the gas infrastructure, there has never been as much work done on the energy network as now. Yet, this is not enough, and there is a problem of network congestion (overloading of the network due to a too large imbalance in supply and demand). Sometimes there is too much supply of sustainable energy such as solar and wind. And sometimes there is too much demand in the absence of energy. This problem cannot be resolved quickly enough by the grid operators due to a lack of execution capacity.

With the WDW viewer, we can overlay various map layers to identify the most impactful districts. The grid operators are also developing similar visualisation maps (visual twins). For example, see the district analysis tool from Liander and the district view maps from Enexis (see chapter New Observations). By combining these maps with the WDW viewer, we make the common interest and potential transparent. This allows us to prioritise and plan the most optimal districts, making an efficiency move in the district approach, which was previously very individual and thereby had all the potential to be suboptimal.

Project team and partners

The Project team primarily consists of:

- The WDW team, which has been working on the DistrictEES project and was the driving force behind the project.
- In addition, this team collaborated with a group of temporary and part-time staff lent by the mother company Van Wijnen. As a construction company, Van Wijnen also handled the preparation and execution of energetic renovations.
- Furthermore, other parties assisted in the execution as partners of WDW. These include entities that contributed ideas and provided investments for projects in the districts. This refers to municipalities, housing associations, and network operators.
- Lastly, there are also external execution partners who have been involved in the project for an extended period. This includes parties responsible for the construction of tools and the provision of knowledge.

An overview of the overall parties that participated in the project and helped WDW in achieving it's goals:



WDW

WDW is a separate entity and a 100% subsidiary of the Van Wijnen organisation. WDW is the taskgroup that developed The District Level Approach for Van Wijnen. The reason for this is to offer the ability to operate across disciplines. This independence aids in making an objective assessment in the choice of sustainability approach. This means developing an approach and businesscase for energetic renovation of districts.

WDW is a small organisation that is directed by a board and district developers who guide and coordinate the entire district-focused approach from start to finish. Additionally, there is a back office that organises the administrative side of the district approach, internal organisation, and support services. This includes the administrative aspects of the grant.

Van Wijnen

The execution of the energetic renovation measures is handled by Van Wijnen as the construction company. Van Wijnen is a construction company with establishments nationwide. The company has a broad portfolio with developing, building, transforming, renovating and managing real estate in the areas of living, care, learning, working and recreation. However, in the core Van Wijnen is mainly focused on housing. This means renovating, transforming and building houses.

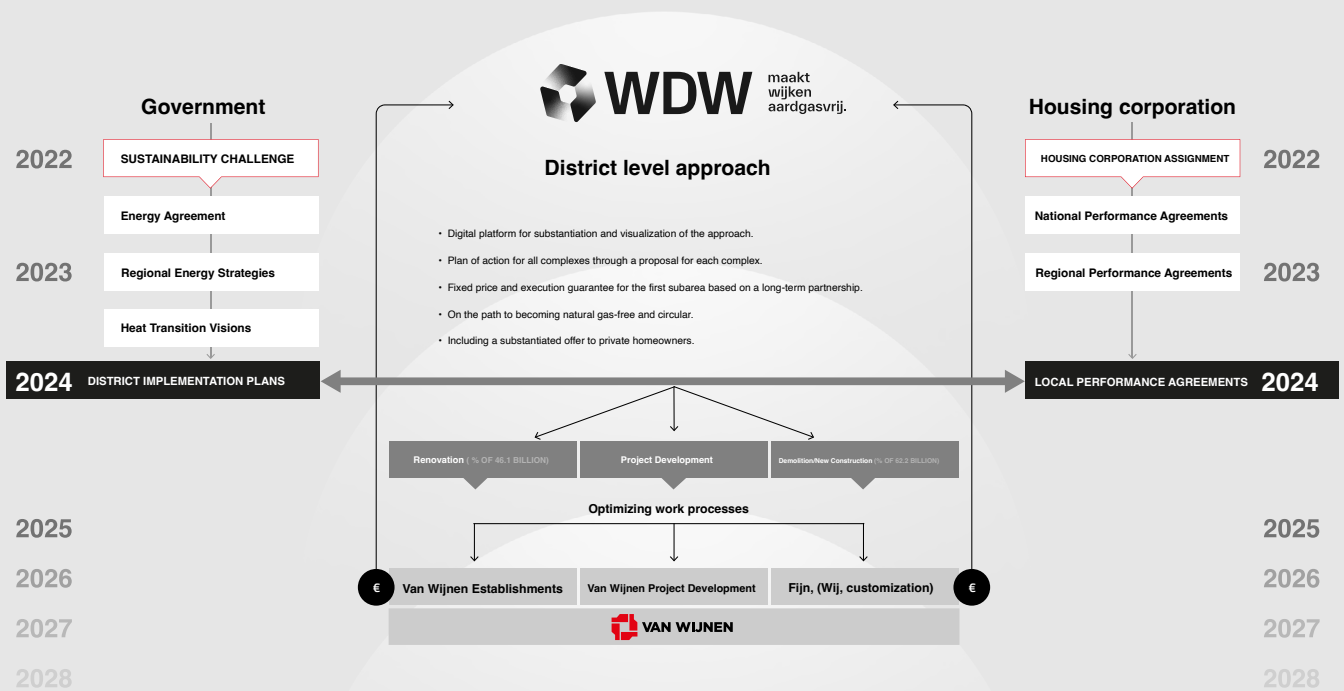


Figure 11 The visual above shows how WDW generates its income and how it creates value and projects for Van Wijnen's various disciplines.

Project Process

In this chapter, we discuss the duration of the DistrictEES project. We will provide an explanation of the steps that have been taken.

Timeline

To form a picture of the project process, a timeline has been added. It includes the most important events, process steps, and achievements in the project period of the DistrictEES. The total period spans 44 months.

This timeline briefly lists the most important events that have been significant for the DistrictEES project.

2018:

WDW conceptualises the district-oriented approach. With the experience of renovating more than 162 homes, creating 372 label steps we believe that we can realise over € 19 mio in sustainable investments and save up to 37 Mj of natural gas and 7 MWh in electricity. With experience in renovating complexes for housing associations, the leap is made to the district-oriented approach. The plan of the DistrictEES project is approved by the European Commission, but the grant is not granted because WDW does not have the volume in turnover and personnel to support such a business model. WDW is simply too small.

2019:

As one of the three shareholders, Van Wijnen sees the potential of the district approach and its compatibility with the company's proposition. Van Wijnen takes over the shares from the other shareholders, and WDW becomes an integral part of the Van Wijnen organisation. WDW remains an independent entity. The primary objective is to further develop the business model.

2020:

With Van Wijnen as a strong parent company, WDW has gained access to a financially strong execution organisation with many facilities. With this support, the application has been improved and strengthened. WDW, on behalf of Van Wijnen, resubmitted the application, which was honoured by CINEA within the Horizon 2020 program. This allowed us to start the elaboration of the integrated district approach. The start of DistrictEES. Parallel to this phase, Van Wijnen was taken over by HAL Investments. This is a long-term investment company with a broad portfolio of companies. HAL has made a significant contribution to the development of the FIJN concept, a factory where modular, sustainable houses are produced. An important addition to Van Wijnen's product range. With this addition the portfolio for the District Level approach is completed with a demolition- new construction concept

After a vigorous start in which the first contours were developed, the world was struck by the COVID-19 virus. This virus has not only had a major impact on people and society. The business world was also severely hit by the measures. Lockdowns and uncertainty have put a firm brake on the development of the DistrictEES program. Due to the lockdown, the connection with our partners was seriously hindered. This has caused the development of the integrated district approach to be delayed.

2021:

The delay in the development of the project not only caused a delay in connecting with the market. We soon came to the conclusion that increasing the effort would not lead to acceleration, so we had to wait out the ride calmly. It also provided a certain calm within the company with the opportunity to take a good look at the proposition and implement improvements and develop the models needed to really grow the district approach. Although the times were difficult, the targets weren't changed. WDW still wanted to invest more than €19 mio of investments. By the end of 2021 already €11 mio of investments were made.

2022:

The COVID-19 virus held society in its grip longer than expected. This has caused such a delay in the program that we were no longer able to achieve the goals within the pre-agreed period. Through an amendment procedure, we asked the European Commission for an extension of the project by a period of 8 months. This allowed us to continue with the market approach of the strategy and to test our tools in practice, once society slowly started to open up again. We also used the amendment to adjust the content of the program. The most important substantive change we have implemented is replacing the revolving fund with an insurance construction and focusing the district approach on unlocking the financial instruments that are already available to facilitate the sustainability of the built environment. This has largely discontinued the development of the EES.

2023:

In the extension period of the project, we brought the integrated district approach to the market, and various leads and agreements were concluded in which the integrated district approach plays an important role.

The project is concluded with this final report. In addition, we organised an event where we presented our progress and results. Here is a brief impression of the day.

We have been able to prove that the district approach, with the use of tools and based on data streams, works, that the Van Wijnen organisation is capable of taking on the execution, and that the market is ready to get started. On the end of the project we made over €19 mio of sustainable investments. The district approach contributes to the energy transition and accelerates the route to gas-free districts.

⋮

Working together with Europe

The collaboration between the DistrictEES project team and the European agency CINEA has been experienced as very positive. One of the notable aspects of the cooperation was CINEA's role in monitoring and guiding project tasks. They provided a structured framework and also offered good guidance on administrative procedures. Facilitating knowledge exchange between different European projects also led to positive changes in the DistrictEES project.

Specific needs and embedding in the corporate strategy

The DistrictEES project has offered VAN WIJNEN the opportunity to fully develop the concept of district level renovation, with ultimately fossil free districts as an aim, and to prove the financeability of its concept for investors.

The DistrictEES project also enables VAN WIJNEN to overcome specific hurdles and barriers that prevent the further upscaling and replication of the concept. This will help develop VAN WIJNEN's existing (from the previous projects and pre-studies) body of knowledge and competence regarding the concept.

Van Wijnen, WDW's parent company, believes in the district level renovation concept. First, because it is an efficient way to improve energy efficiency that will enable society to meet the enormous renovation challenge of the coming decades. But also because it enables (as seen in the example districts) them to execute large scale renovation projects that are geographically concentrated. In the current overheated construction market, large scale energy efficiency projects are the only way to compete with other projects in the market in terms of cost-effectiveness. Moreover, experience in district renovation projects on an EPC basis will give Van Wijnen a competitive edge in EU markets where they have a foothold and ambitions to grow.

WDW and Van Wijnen's corporate strategy is initially built around rolling out the concept in the Netherlands and possibly in the future abroad, ultimately developing districts that are more energy-efficient, and finally completely energy neutral. The project helps VAN WIJNEN with this strategy by enabling a scale-up of the concept. The district level approach is already implemented on a smaller scale and will have to prove it's worth soon by scaling up and creating more results in other districts.

Project results

Projects and Explanation

During the development of the district approach, six projects were seriously initiated. In total, there have been five projects for which district plans have been made. In three of the projects, measures have been implemented, proving to be successful to various degrees. In five districts, WDW is still involved and working on new projects. In short, this indicates that WDW has attempted a lot of projects, is often successful, and almost always remains involved in the district long-term, which is necessary and positively received by the project partners. Without this involvement, the district approach would not be successful.

Below is a brief explanation of the (ongoing) projects. In the best three projects information of the districts and concrete results are added.

Groningen - The Oranjebuurt

The Oranjebuurt is an urban district situated in the city of Groningen, accommodating around 2,800 residents. It was constructed before the 1950s. The district comprises of roughly 1,300 homes, including more than 400 houses of the housing association. Furthermore the district contains a school and a supermarket.

- Tools used: District sustainability plan and viewer
- Involved parties: De Huismeesters (housing association)
- Contracts signed: A collaboration agreement with De Huismeesters
- Result: A rapid collaboration with a quick look ahead to the implementation of energy measures.
- impact: 184 social houses renovated (€ 12,5 mio)



Figure 12 An overview of the district Oranjebuurt with the different usage classifications. Most of the district (blue) is housing.

WDW has held discussions with the housing association De Huismeesters and has quickly come up with a district plan for The Oranjebuurt. From this plan, an agreement

emerged for the renovation of a couple of De Huismeesters' housing complexes. This will eventually lead to the implementation of measures.

Doetinchem - Overstegen

Overstegen is a suburban, postwar district with approx. 4.000 inhabitants and 2.000 homes (mostly 45 years and older) closely to the centre of Doetinchem. The district consists for a large quantity of social real estate. There are very few businesses around Overstegen but there is a small shopping mall and two schools.

- Tools: District sustainability plan and viewer,
- Housing association Sité, energy cooperative AGEM, grid operator Liander, and the municipality of Doetinchem.
- Contracts: Various contracts signed with private individuals. Two contracts signed with Sité.
- Result: A long-term collaborative engagement with the housing association. Significant results with Sité as a consequence and modest results with private homeowners. A combined approach in execution for private and corporate works.
- impact:
 - 240 social houses renovated (€ 19,11 mio)*
 - 11 private homes renovated (€ 268K)*
 - 3 private homes sold back to the housing association for renovation.*



Figure 13 An overview of the district Overstegen with the different usage classifications. Most of the district (blue and purple) is housing.

WDW has written a district plan for the Overstegen area in Doetinchem. Various discussions have been held, and one successful sustainability project has already been completed. This marks the first steps taken. A second project in another sub-area in Doetinchem is to follow, for which Van Wijnen will provide the execution. Discussions about a continuation in the Overstegen area are still ongoing.

A plan has been discussed, and a follow-up will be provided. Thus, the Overstegen district is ahead of many other districts in the Netherlands on the path to becoming gas-free. Almost three of the subareas, a third of the district, is made gasfree. In the next five years another three (larger) subareas will be renovated. This will make almost all, around 90%, of the district gasfree.

Rheden - Dieren-West

The Dieren-West district is situated in a countryside setting, encompassing around 2,000 homes to approximately 4,000 residents. VAN WIJNEN has been in close collaboration with the municipality of Rheden. Furthermore, Dieren-West boasts several sports facilities, schools and shops.

- Tools: District sustainability plan and viewer
- Housing association Vivare, municipality of Rheden, and residents' group WDDW.
- Contracts signed: Various agreements with private homeowners.
- Result: A prolonged collaborative engagement with the municipality. However, only modest results with private homeowners. The collaboration with all the different stakeholders is causing delays.
- impact: 15 private homes renovated (€ 39K)

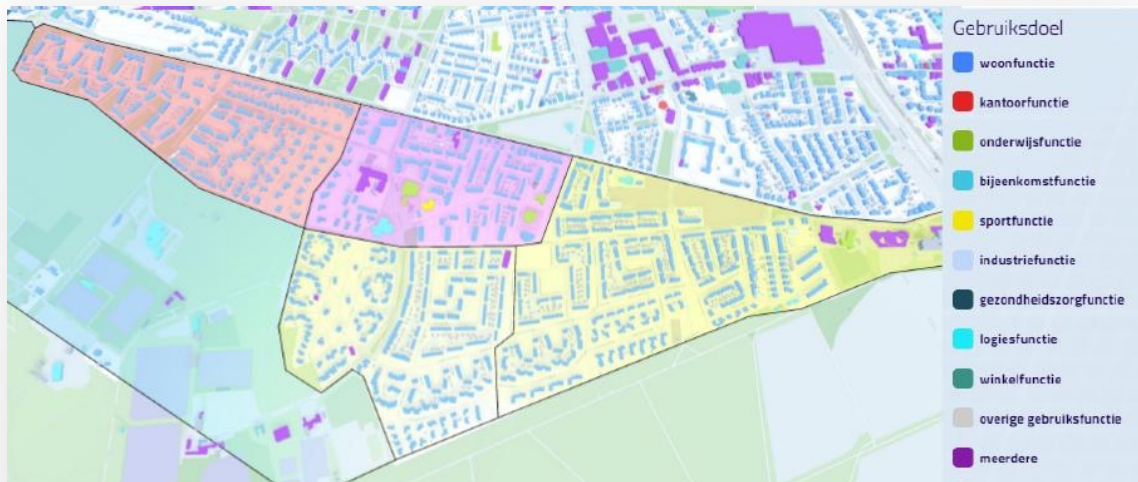


Figure 14 An overview of the district Dieren-West with the different usage classifications. Most of the district (blue) is housing.

WDW has been involved with the Dieren-West district in the municipality of Rheden for a long time. WDW got involved through the municipality of Rheden. Together with the WOAB department, they have also been working on private homes in the district. However, further projects are still lagging.

For instance, the housing association Vivare is not yet willing to cooperate. Because of this, a real approach to the district has yet to get off the ground. Nonetheless, discussions continue with both the municipality and the housing association, and WDW remains involved in making Dieren-West gas-free.

Steenwijk - The Gagels district

WDW received a request to write a district plan for the Gagels area in Steenwijk. The lead came from the municipality of Steenwijkerland. Initially, discussions were held with the municipality and the housing associations Woonconcept and Omnia Wonen. Due to numerous administrative changes, the project stalled. There was little response from the municipality of Steenwijkerland. Being dependent on such a partner, WDW could not make progress in the Gagels area. WDW has since been approached by the municipality of Steenwijkerland to resume work on the Gagels district.

Districts Tarthorst in Wageningen and Colmschate-West in Deventer

Two projects that did not go well are the Tarthorst district in Wageningen and the Colmschate-West area in Deventer. A district analysis was conducted, and discussions were held with the housing association Woonstichting. Ultimately, the client in the Tarthorst District decided to have only one project executed by Van Wijnen and to leave it at that. Therefore, WDW has not contributed further to making the district gas-free and is no longer involved.

In Colmschate-West, WDW is still minimally involved, and no steps have been taken towards execution of measures.

District boundaries and size

In the pictures shown above the districts always have their boundaries. A district and the size and boundaries of a district are established by the Dutch government. Using these boundaries has the benefit that the data of the district is aggregated within this area and so you can analyse the district more easily. Sometimes we make a different approach in our district boundaries and follow our own guidelines, but this is after a discussion with housing associations and local governments.

Impact numbers

Investments in energetic renovations in Euro's

Every million Euro of Horizon 2020 support should trigger investments worth at least EUR 15 million. The projects that have been worked on made it possible to deliver EUR 19,3 million of investments. These projects are the Oranjebuurt, Overstegen and Dieren-West projects combined.

Energy savings in MWh

For DistrictEES project extensive calculations have been made on the energy saving impact. Primary energy savings triggered by the DistrictEES project add up to a total of 2602 MWh/year.

Energy production in MWh

The DistrictEES project will invest largely in renewable energy production by solar PV. A total yearly renewable energy production of 425 MWh has been made.

CO2 savings in Kton

For DistrictEES project extensive calculations have been made on the Co2 saving impact. Primary CO2 savings triggered by the DistrictEES project add up to a total of 736 Kton/year.

Total homes renovated and total steps in energy labels

DistrictEES develops a concept that includes suppliers and “end-users” of energy saving measures, focusing on four common types of buildings in urban areas (residents, both private property and tenement, public buildings and commercial buildings). Within the project, investments are realised for the energy efficiency renovation of 439 corporate and private homes. And a large number still to come. We are also in the proces of preparing renovation, transformations and developments of both public and commercial building. By offering an innovative energy efficiency subscription on district level a critical level of scale is reached. The main aim of implementing energy efficiency on district level will be enabled (financially) by bundling and pooling the financial requests of all property owners.

Municipality	District	Description	Investment in €	CO2 savings	Energy savings	RES Production	label step
				Kg CO2/year	MWh/year	MWh/year	
Doetinchem	Overstegen	renovation of 240 social rental houses	€ 11.124.633	814.038	1.981	102,776	721
Doetinchem	Overstegen	renovation 15 private homes	€ 267.905	28.935	123	n.a	tbd*
Groningen	Oranjewijk	renovation of 184 social rental houses	€ 7.949.039	252.717	575	n.a	499
Dieren	Dieren West	Private home renovation (ref sheet 3)	€ 38.938	20.601	46	n.a	tbd*
		Total	€ 19.380.515	1.116.291	2.725	103	1220

Social impact

In the pursuit of gas-free districts, strengthening social cohesion within communities has been a focal point. Making sustainability initiatives concrete and accessible also narrows the divide between citizens and government. Citizens are no longer mere spectators but active participants in the transition process, enabling them to make a personal contribution to the sustainability of their own living environment.

An additional benefit of this process is the creation of new employment opportunities. The implementation of sustainability measures has led to jobs at the local and regional levels and has also impacted individuals distant from the labour market. This employment contributes to the development of skills and knowledge among the local population, which in turn benefits the resilience of the district.

The DistrictEES project led to an average of 70 fte that were (directly) employed in the Overstegen project. And about 10 people with a labour disadvantage worked in the project. This average is our goal to achieve within our other projects. This aim helps the building industry in the growing burden in recruiting technical employees.

Lastly, by focusing on the social dimensions of the energy transition, we have taken steps not only towards a greener future but also towards more habitable districts. The result is a holistic approach where environmental improvement goes hand in hand with social progress, a fundamental pillar for sustainable development at the district level.

Lessons learned

- 1. Suitable Geographical Focus:** The Dutch government's climate agreement is translated into a district-centric policy aligning with sustainability efforts. More and more parties see that the district is a suitable geographical focus, because of scale and policy. The scale of a district is big enough to make an impact by volume, and small enough to stay manageable. Additionally a District is a recognizable area by geographical and natural bordering and the sense and feel of a neighbourhood. A District is common practice in the Netherlands. The next phase will be to scale up from municipality to district level plans and vice versa. At this moment WDW can show the effectiveness of the District Level Approach.
- 2. Importance of Data:** Comprehensive data on housing conditions and social aspects are vital for developing effective gas-free district strategies. Especially the data of housing associations is important for analysing and developing a plan to make the houses in a district gas-free. These data sets include the energy performance labels, energy consumption, installation and materialisation of the real estate. Based on this well-maintained data (it gets updated regularly) WDW can make plans and inventorize measures for making the houses gasfree.
- 3. Online and offline communication is important:** Communication can get much more tangible with online tooling. An important example is the online visitors centre. With the online visitor centre, residents can gain insight into what is about to happen to their district. This is making communication much easier. However communication remains a human task. There will always be some customization involved, and the approach will always require discussions with people. So, you need to come across as human and personable and thus not only online but also offline. In short: With online communication tools we can make the transition to a gas-free district much more tangible for residents. However, tailored solutions and direct communication are still necessary to address individual needs within the district approach.
- 4. Varied Financing Paces Pose Challenges:** There are two main investment paces in a district: Through the OVC housing associations and Municipalities can give information about the project to the residents of the district. This is the slow and small-scale pace of private homeowners and the quicker, large-scale investments by housing associations. The private homeowners tend to invest a small amount of money over a long period of time. And there doesn't seem to be a predefined long term investment plan. The housing corporation tend to invest a large amount of money in a short period of time, based on a long term investment and maintenance plan. This makes forecasting and planning much more predictable. Which is a key element in the District level approach in order to connect and involve other real estate owners. Private home owners are not used to budgeting renovation and maintenance. So the long term planning is non-existent. Therefore activating the renovation needs combined with a financing offer is essential to boost the renovation ambition.

- 5. There is a difference between analysing and sum-up heat alternatives and really choosing a heat alternative:** A real choice must be made and elaborated before measures in energetic renovation can be implemented. It often occurs that there has been made a choice for a heat alternative, but at the same time this choice is still subject to debate and thus put on hold. Because of this debate the effort for making further plans towards implementation are set on hold. This is detrimental to making the step towards implementation. On the other hand, non-regret measures such as isolation are growing in acceptance. because these measures are relatively cheap, easy to execute, effective and don't stand the risk of divestment in the way.
- 6. Commercial objectives drive implementation:** Van Wijnen, the owner of the DistrictEES project, has a goal focused on the implementation of measures. The objective is implementation, because as a commercial organisation this is there way of making profit. Due to this practice, the project plan has taken on a different approach than many other approaches. The project is mainly focused on the feasibility of implementing energetic measures and this has increased the feasibility of the district level approach as a whole and the feasibility of making the built environment in districts sustainable. This is in contrast to research institutions and consulting firms. These parties are not bound by the implementation of energetic measures and are therefore primarily focused on research. However with research alone districts won't get sustainable. The EU's contribution has made it possible to initiate trajectories in different districts and to involve multiple partners. This has set processes in motion that would otherwise have taken much longer to start.

The next steps for WDW and the next phase for DistrictEES

There are two key tracks in our approach moving forward:

- The first track involves further developing the district approach, in collaboration with both existing and new partners. This development will place a greater emphasis on communication and participation, with a focus on providing comprehensive solutions and support to residents. To enable this, the approach needs to be supported by a validated concept of an interactive visualisation and participation tool, with a powerful computational core for district and energy analysis. This tool will allow system designers, suppliers, and implementers to develop and offer calculated and executable renovation packages to property owners. This project contributes to the development and validation of (renovation) packages for all real estate in the district. To get this result we need to integrate the DistrictEES tools into one platform tool. The platform tool will consist of the 'Viewer', the Online visitor centre (OVC) and the sustainability compass. With these tools we will communicate with the residents of the district and hand them a plan with an offer for renovating their houses. The work of creating this platform will be carried out by our partners. WDW will carry out some of the work and orchestrate the process.
- The second track involves scaling up the district approach within Van Wijnen and, consequently, across the Netherlands. The district approach needs to take shape on a national level within Van Wijnen. While WDW is already involved in projects in various parts of the Netherlands (see visual below), scaling up will require employees, including project developers, from Van Wijnen to engage with the district approach. This will lead to the nationwide implementation of the district approach, resulting in more projects, investments, and ultimately, making the built environment in the Netherlands natural gas-free.

Districts WDW

● Van Wijnen establishment with district
- June 28, 2023
16 districts divided across 9 Van Wijnen establishments,
244 FIJN-homes, €78.4 million renovation turnover until 2027



Figure 15 Visual of all the Van Wijnen establishments and establishments with District projects by WDW.

Expression of gratitude

The DistrictEES Project has been a collaboration and a learning journey. The project partners extend their thanks to all the organisations and stakeholders that have helped shape the success of the project through attending events, providing feedback, supporting meetings, providing expertise and guidance, sharing information or being part of our pilot projects.

Furthermore, we would like to thank the European Commission for making the DistrictEES project possible through the Grant. Without it the project would not be possible.