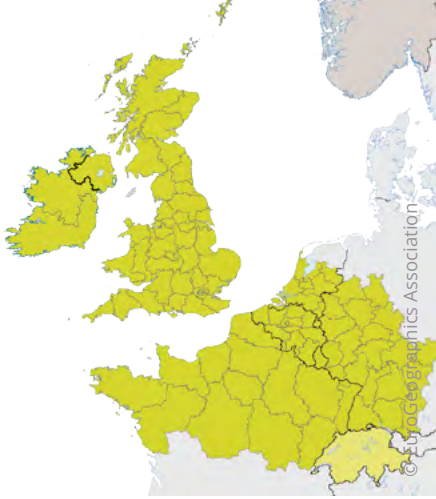
Practice Cube

Climate Active Neighbourhoods

Contents

= Indication of reference to other categories

Effective Climate Action Practices



The Practice Cube offers a look into the experiences made over three years by the partners of the Interreg NWE funded project "Climate Active Neighbourhoods". The multi-national consortium based in Belgium, France, Germany, the Netherlands and the UK has closely collaborated on methods and solutions for realising a low carbon future, increased energy efficiency and a socially just energy transition on the neighbourhood level.

The Practice Cube is a collection of best practices and is targeted towards municipalities who are looking for successful climate action solutions. The best practices are divided into three categories:

- "New Ways of Cooperation" showcases the importance of rethinking the municipalities' role towards facilitation and bottom-up cooperation on the local level in direct contact with the residents & neighbourhood initiatives.
- "Engaging Residents for Change" displays methods of engagement and of fostering intrinsic motivation by positive communication.
- "Support & Financial Tools" focusses on offering residents and neighbourhood initiatives the support they need, starting from personalised advice services up to the creation of new financial tools on the neighbourhood level.

Get inspired and become (more) climate active within YOUR neighbourhood!

"Here in Plymouth we tried our best to give the people what they truly wanted and needed so we had to do quite a lot of research upstream, but it was all worth it in the end, when the residents started spreading our actions by word of mouth."
Paul Elliott, Plymouth City Council
UNITED KINGDOM

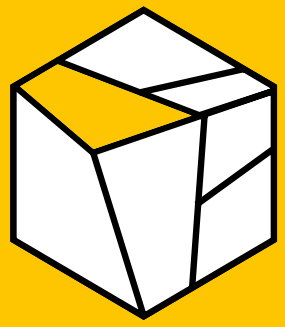
"By focusing on our neighbourhoods' specificities, the CAN project allowed us to get in contact with inhabitants who are not usually reached by our actions. Seeing the impact it had on some people's life has been truly rewarding."
Gladys Grelaud, Brest métropole
FRANCE

"Working with neighbourhood initiatives in Arnhem has not only been a truly enriching experience, it was also a lot of fun! We saw that when you support residents in their efforts to organise themselves at their neighbourhood level to make a difference, things really get done."
Hans van Ammers, City of Arnhem
NETHERLANDS

"Supporting the residents of Liège, even people in very precarious situations, in improving their living conditions thanks to our personalised advice and active follow-up is the achievement we are most proud of."
Gün Gedik, Liège-Energie
BELGIUM

"Through our activities in Worms, we tried different methods of engagement in order to reach a wider audience, such as the Energy Caravan Plus or the Thermography walks, and it was overall a very successful approach!"
Katharina Reinholz, City of Worms
GERMANY

New Ways of Cooperation



New Ways of Cooperation

The neighbourhood-level is a place to directly implement climate action and an opportunity to foster behavioural change together with the residents on eye-level. It is crucial to change the common perception of the municipality's role and to find new ways of cooperation.

Effective and constructive cooperation on the neighbourhood-level towards the common goal of reducing carbon consumption and increasing energy efficiency is built on relationships of trust with identified target groups. The specific needs and wishes of the residents are key elements to find access to the individual. Cooperation with local stakeholders, e.g. neighbourhood initiatives, craftsmen or social assistants, offers the opportunity to exchange know-how and experiences on specific topics. The municipality can then take on the role of a facilitator to these local stakeholders.

A very constructive method is cooperation with local neighbourhood initiatives. As showcased in Arnhem (NL), the municipality can offer assistance in organising and financing. A learning network is established, in which both the municipality and the neighbourhood initiative benefit from the exchange of ideas, methods and hands-on experiences. The initiatives represent a group of motivated and committed residents within the neighbourhoods. They are usually already well-established, known among and connected to the locals. The municipality can act as an enabler, financer and regulator for local climate activities.

Providing easy access for residents to energy services and local renewable energy can generate fruitful results. By combining a variety of services regarding energy retrofits and energy consumption in one central place, the objective of boosting the number of retrofits in the area was achieved. Accompanied by a global communication strategy, it simplified the access to information about public aids for residents and increases interaction in person. Whereas in Plymouth (UK) the set-up of a local community benefit company has enabled the construction of a large community owned solar array, from which both the residents and the company benefitted. Long-term community shared responsibility was thus ensured.

Climate action and decreasing carbon emissions is often not at the top of the priority list of residents of deprived neighbourhoods. It is effective to combine the content of these activities with social issues and to point out the benefits of energy efficiency. Saving money and increasing the quality of life are very effective anchor points. In Brest (FR) cooperation among local stakeholders and with social assistants offers the chance to gain knowledge about the most pressing issues of the neighbourhoods. This knowledge will pave the way to building trust and to involve the residents into the process of energy transition. The multiplicator-approach as practiced by the Energy Agency RLP (DE) is a very effective method to transfer energy related know-how into the neighbourhoods and to raise awareness.

Within this chapter you will find several unique approaches to building new ways of cooperation between local stakeholders and neighbourhoods' residents.

Country: **the Netherlands**
City: **Arnhem**
Population: **159,000**


© Municipality of Arnhem

New Ways of Cooperation

The Arnhem Approach for Neighbourhoods

A Municipal Governance Model for Bottom-Up Climate Action

The Arnhem Approach is a governance model for a constructive and effective cooperation between the municipality and local initiatives. It aims to facilitate the transition to a CO_2 free energy system requiring far reaching measures in energy saving and local production of renewable energy. One of the main challenges in the transition process is to mobilise and involve residents to reduce their energy consumption and to invest in energy saving technologies. In many cities active residents organise themselves in neighbourhood initiatives and develop an action agenda to reach this goal.

Transferable Results

The Arnhem Approach has three main parts:
First, the underlying governance philosophy evaluating why cooperation with neighbourhood initiatives is considered a valued part of the municipal policy. The municipality of Arnhem considers itself a crucial participant in the network, recognising its important role as enabler, financier and regulator of neighbourhood initiatives.
Second, the required instruments for cooperation with neighbourhood initiatives, such as subsidies, regulations, competences or working methods are evaluated. The municipality of Arnhem supports neighbourhood initiatives by offering assistance in organisation and financing of activities through a local fund, the 'Aanjaagfonds' (see page 27).
Third, best practice examples of effective cooperation are developed for inspiration and reflection. For example, the initiatives are brought together in a learning network to exchange knowledge and best practices.

Organisational Steps

The Arnhem approach is the result of an active learning process, roughly based on three recurring steps:

- Interviews and meetings with the active neighbourhoods and supporting experts about the effectiveness of support to grass root initiatives: what specific support is needed in relation to the goals? How effective was the support provided? Can we understand the underlying reasons for the effectiveness? What is the role of the municipality?
- Exchange of experiences with similar processes in other municipalities in the region. For this purpose, a Community of Practice is set up with workshops and masterclasses.
- Exchange of experiences and lessons learned with other national front runner cities during a national conference.

Challenges and Solutions

The complexity and duration of the task at hand requires the development of constructive, long term relationships between the municipality and neighbourhood initiatives, and possibly also other relevant stakeholders like grid companies and energy cooperations. This calls for a high level of professionality, continuity and power of representation of all actors.
The Arnhem Approach uses practice based learning as a method for constant improvement and understanding of the success and failure factors of cooperation between municipality, grass root initiatives and other stakeholders. A dedicated advisor in the municipal team observes, evaluates and improves all activities to ensure effectiveness of the activities.

Long-Term Aspects

- The Arnhem Approach focuses on the factors that enhance a long term constructive partnership between municipality and neighbourhood initiatives.
- Due to the high level of contextual and local knowledge, the approach can be realised successfully and long-term implementation is planned in Arnhem.
- The Arnhem Approach can be shared with existing and future initiatives, and transferred and implemented in other municipalities.

Contact Information
Project Partner:
Municipality of Arnhem
Contact Person:
Hans van Ammers
E-Mail: **hans.van.ammers@arnhem.nl**
Website: **arnhem.nl**

Country: **Belgium**
City: **Liège**
Population: **198,000**

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New Ways of Cooperation

"Maison de l'Habitat" Energy Service Center

Combining Energy-Related Services on Retrofits, Consumption and Poverty

The City of Liège provides a variety of public services regarding energy retrofits, energy consumption and social issues. The "Maison de l' Habitat" has been created by the City of Liège to gather all those public services from different departments in one location. The goal of this activity is to boost the number of retrofits especially in deprived areas, as many citizens are not aware of their eligibility for and availability of these services.

Transferable Results

A main challenge for many public services is to make citizens aware of the offered services and public aids. Simplifying the access to information on energy matters for citizens and communicating in a single reference location for energy and housing matters has an important impact on the number of people reached. Coupled with a strong communication strategy, the implementation of the "Maison de l'Habitat" resulted in a 50 – 60 % increase of citizens interacting with or making use of the services – and the trend is rising.

Organisational Steps

A new communication strategy is central to promote the available public services at the "Maison de l'Habitat":

- A joint understanding of communication and a joint communication strategy of the associated services, hosted on site, had to be developed. The focus was set on the available information and explanations on how citizens can access the information and services.
- All services hosted regularly met up to implement the new procedure. A newsletter and an editorial board where each service is represented were set up. A common contact form and agenda have been established.
- Since the kick-off around 1,5 years were needed to achieve full implementation.

To measure the impact of the activities, the following methodology was developed:

- The number and type of retrofits, financed through public loans, is the basis of assessment. A methodology estimates the reduction of CO_2 emissions according to the type of retrofit.
- The difference between the situation before and after the retrofit (in kWh) is used to estimate the energy saved and is converted to tCO_2, taking into account the Walloon Region emission factor. In 2017, the estimated reduction of CO_2 emissions due to retrofit works financed by public loans was around 210 tCO_2.

Challenges and Solutions

The aim of the "Maison de l'Habitat" is to bring together in one location a range of diverse and independent public services. Initially, all services had their own organisation, administration and communication services. This cooperation represented a loss of independence and decision making power of each individual service and required achieving compromises on many issues. Jointly complementing each others' activities and communicating results was achieved through a long-term trust-building process. Political support further facilitated its' implementation.

Long-Term Aspects

- Through the promotion of the services offered at the "Maison de l'Habitat", more citizens are aware of and have access to these services. This represents a long-term increase in energy retrofits and increases the overall efficiency and effectiveness of the related public services.
- The cooperation of different services opened new ways of thinking and working within the public administration.
- The communication strategy (newsletter, website) is continuously updated and implemented.

Contact Information
Project Partner:
Liège-Energie
Contact Person:
Alison Colon
E-Mail: **can@liegeenergie.be**
Website: **maisonhabitat.eu**

Country: **United Kingdom**
City: **Plymouth**
Population: **264,000**

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New Ways of Cooperation

Plymouth Energy Community

Setting Up Independent Companies with Local Groups

Plymouth City Council (PCC) aims to promote bottom-up action from local groups to achieve significant CO_2 emission reductions. To achieve this goal, the independent Community Benefit Company Plymouth Energy Community (PEC) was successfully set up, which installed and manages a community owned solar array. The PEC sparked an energy revolution in the city of Plymouth. In this context, local ownership is essential to energy empowerment.

Transferable Results

Ownership is key to empowerment and PCC recognised this in assisting the transition to a low carbon future. Local citizens are able to purchase community shares of the installations. Jointly with these funds and support from the municipality, PEC installed over 6 MW of community owned renewables, leading to a reduction of CO_2 emissions of approximately 73,000 t. This collaboration has established Plymouth firmly on the community energy map and the easily replicable model for local authorities and community energy groups working together has been used as an example for other authorities. By facilitating, supporting and providing funds to local groups, significant progress towards a sustainable future can be made in the municipalities.

Organisational Steps

Local communities strive to transition to a low carbon future by the means of bottom-up activities, but often do not have the required funds at their disposal. In these cases the municipality can provide financial support:

- PCC provided PEC with a start-up loan to cover the initial set up costs (£65.000; ca. € 75,000).
- A further, larger loan from PCC to PEC contributed to partly fund the construction of a 4.1 MW solar array (£2.8m; ca. € 3.2m).

PCC also supported staff costs of PEC:

- A team of three employees originally provided the resources to set up the organisation. Start-up activities include regular meetings with founding members and setting up the first board of directors. In four years, PEC grew considerably in both salaried and voluntary staff.
- PCC hosts PEC staff on a shared-expertise basis. The provision of Human Resources, IT, legal, financial and developmental services has undoubtedly contributed to the speed at which PEC has delivered its achievements to date.

The level of effort required depends on the aspirations of the Community and has to be adapted to local needs.

Challenges and Solutions

Political and Senior management support is essential to successfully implement a community energy project. The municipality needs to understand the benefits of cooperating and sharing aims with independent organisations. Clear roles and accountability are essential, particularly when staff roles are shared between the municipality and the community. Appreciation of the time needed to implement an organisation like PEC and deliver subsequent projects is also necessary. Finally, resilience to policy changes within the energy sector must not be under-estimated. Often the biggest barriers to delivery are out of the control of the municipality or community group.

Long-Term Aspects

- The renewable energy installations provide host buildings with energy, CO_2 emissions and energy bill savings – whilst driving an income back into PEC.
- Across all installations, PEC will see an income of over £ 3m (approx. € 3.4m) over the next 20 years which will be fed back into projects that meet the aims of the organisation.
- Local residents are interested and investing in progressing renewable energies through community shares.

Contact Information
Project Partner:
Plymouth City Council
Contact Person:
Paul Elliott
E-Mail: **paul.elliott@plymouth.gov.uk**
Website: **plymouthenergycommunity.com**

Country: **France**
City: **Brest**
Population: **139,000**


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New Ways of Cooperation

Towards more Bottom-Up Climate Action

Changing the Role of the Municipality

In Brest, the main motivation to participate in the CAN project was to experiment and develop new governance models for bottom-up actions aiming at reducing CO_2 emissions in deprived neighbourhoods. In Brest, public policy development and implementation traditionally followed a top-down approach. Elected representatives approve projects and give the task of project implementation to the Brest Metropolitan Council. However, this approach is not always appropriate.

Transferable Results

Brest Métropole developed a strategy to integrate a large number of grassroots stakeholders in each neighbourhood. A bottom-up and common development and implementation of a project increases its acceptance in the targeted neighbourhoods. The transformation of policy processes from a top-down towards a bottom-up approach allows municipalities to tailor policy programmes to the need of the local neighbourhoods.

Organisational Steps

A year before the launch of the grassroots approach, Brest Métropole organised a first meeting at the neighbourhood level. The participants of these meetings were representatives of the Neighbourhood Town Hall and local partners. The target of each meeting is to identify and discuss the following key points:

- The identification of an appropriate project group to mobilise the neighbourhood inhabitants. The group should include the relevant stakeholders such as groups of inhabitants, local associations or representatives of schools.
- The priority target groups have to be identified, such as children, tenants, public or private housing.
- A whole range of possible activities can be developed. Examples are thermowalks, workshops, energy debates and face-to-face-visits (see p. 12, 17, 24, 32).
- The identification of existing large events or highlights in the district during the upcoming season. This allows the use of potential synergies and reaching a wider audience.

The project group, set up on a voluntary basis, meets once or twice a month according to the project needs. The main task is the development of a framework outlining the guidelines of the project.
Thanks to the cooperation of a large and diverse number of actors, the framework includes all relevant information and guidance. Stakeholders bring in local experience and networks, awareness of issues and mobilising potential, technical and financial know-how and knowledge of administrative processes. All stakeholders are thus aware of their exact role in the upcoming project. This transforms the framework letter into a “cooperation contract”.
The success of the actions is increased by this new group dynamic, the rapidity of the operational implementation of the project, but also by the expertise and technical and financial means provided by Brest Metropolitan Council.

Challenges and Solutions

Moving from primarily top-down to bottom-up processes required the ability, capacity and motivation of Brest Métropole to also modify internal structures, challenge established processes and become open to external input. The involved stakeholders have to be able and motivated to support the process.

Long-Term Aspects

- The success rate of such actions and projects is very high, as all elements are developed jointly with local stakeholders. Smaller areas are represented and included which also increases the overall efficiency.
- The cooperation of different actors improves trust and builds relationships in the long term.

Contact Information
Project Partner:
Brest Métropole
Contact Person:
Gladys Grelaud
E-Mail: **gladys.grelaud@brest-metropole.fr**
Website: **brest.fr/**

Country: **Germany**
City: **Vallendar**
Population: **8,500**

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New Ways of Cooperation

A Multiplicator Approach

Cooperation with Multiplicators for Neighbourhood Energy Transition

Energy Transition on the neighbourhood level is about adapting to specific local needs, with a broad and long-lasting perspective. If the local administrative structures don't match with neighbourhood boundaries, it is useful to establish reasonable spatial reference of local energy transition together with multiplicators from the neighbourhood.

Transferable Results

The multiplicator approach developed by the Energy Agency of Rhineland-Palatinate (EA RP) consists of several aspects. First, the approach focusses on a limited number of multiplicators that are involved to a very high degree. This allows avoiding the complexity and transaction costs associated with a participation process with a high number of participants. Second, an emphasis is put on close co-operation at eye level. Issues other than energy transition often rank higher on the multiplicator's agenda. By integrating these issues into the energy transition action plan, this ensures added value for both the neighbourhood and for energy transition. Third, capacity building strategies are included in the approach. Multiplicators need additional resources and knowledge to effectively implement and promote the energy transition issue.

Organisational Steps

The "ideal" multiplicator is strongly rooted and involved in the neighbourhood, and has an intrinsic interest and motivation to address energy issues, for example due to owning buildings in the neighbourhood. It is not necessary for the multiplicator to have been involved with energy issues previously. The multiplicator is likely to stay beyond external intervention for neighbourhood energy transition.

Multiplicators can be

- home-owners' or tenants' associations
- action groups focusing on urban renewal/public space
- schools, kindergartens or other social/cultural organisations
- community-based energy entrepreneurs
- local advisory councils
- public or public private funded neighbourhood managements.

Ideally, a multiplicator provides infrastructure like physical space for locals to meet and work on neighbourhood issues.

As an example for a multiplicator, the Siedlergemeinschaft Vallendar e.V. (SGV) is a home-owners initiative in a neighbourhood. Its mission is to foster social life in the neighbourhood and supervise the communal property using well established local communication channels. SGV is motivated to address energy issues as they started several energy action projects in the past. SGV, as a multiplicator, aimed to activate engagement in the neighbourhood and achieve the most feasible measures of a neighbourhood energy concept. SGV is in charge of the process, the municipality gives basic support and legitimation, while EA RP as sectoral agency provides knowledge, additional staff and funding to SGV.

Challenges and Solutions

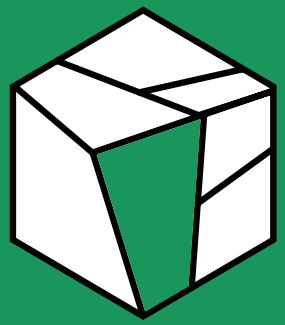
A municipality or energy agency has to be willing to co-operate with the multiplicators at eye level, to customise approaches and measures and to invest resources in the cooperation.

Long-Term Aspects

- Building energy knowledge in the community through the multiplicators.
- Long-term implementation of activities through multiplicators rooted in the community.
- Setting-up of sustainable local projects such as the improvement of community property.

Contact Information
Project Partner:
Energieagentur Rheinland-Pfalz GmbH
Contact Person:
Mathias Orth-Heinz
E-Mail: **mathias.orth-heinz@energieagentur.rlp.de**
Website: **energieagentur.rlp.de/projekte/kommune/climate-active-neighbourhoods, gumschlag.de**

Encouraging Residents for Change



Encouraging Residents for Change

To reduce carbon emissions efficiently, municipalities' actions must rely on a change of behaviour among their residents. This can not only be achieved by an evolution in their perception and convictions, but also by setting incentives. To build this necessary support on the neighbourhood level, different approaches can be applied. For example awareness-raising, the promotion of good examples and understanding residents' intrinsic motivations encourages residents to be part of the change in their community.

Showcasing good examples is a way to inspire residents. In Germany, the concept of "transition tours" or "energy walks" was successfully implemented. Residents discover local initiatives and actors involved in the transformation of the neighbourhood. This creates connections between citizens, and is a great opportunity for municipalities to implement synergies with local actors in order to reach more people.

Raising awareness about heat loss of buildings and their costs via "thermography walks" has been found effective in Brest (FR), Liège (BE) and Worms (DE). During these tours, the energy (in)efficiency of residents' homes is made visible to the participants thanks to a thermographic camera. Furthermore, behaviour change programs as practiced in Plymouth (UK) or Brest (FR) are effective methods to impact the neighbourhoods positively.

Sharing knowledge and setting incentives for behaviour change can amplify the impact. In Hastings (UK) Pop-Up Energy Desks within the neighbourhoods have helped to reach out to residents directly. The city of Essen (DE) rewards positive behaviour through an application via an online platform and in real life. Pedagogical techniques are a relevant tool to use when communicating with residents, such as aerial thermography, as performed in Liège (BE). It provides useful pictures to both the city in order to better target their policies, and to residents who are informed about the thermal state of their house – as well as how to improve it. Thermographic tools are a great communication medium to highlight technical deficiencies, and to provide practical answers to remedy them.

Taking time to understand the residents' motivations is vital for successful activities. Home visits focussing on messages tailored to the target groups were very successful in Plymouth (UK). This offer of custom-made support and small insulation techniques was widely spread by word of mouth among the residents of the targeted neighbourhoods. Such efficient and well-designed measures can snowball into a neighbourhood-wide change. A similar approach was taken by the Energy Caravan plus in Worms (DE), which offered free individualised energy advice in low energy performing neighbourhoods. Discussing the issues on site and pointing out possibilities for improvement are important steps towards the neighbourhood's evolution.

Country: **Germany**
Cities: **Frankfurt am Main, Essen, Worms**
Population: 747,000; 583,000; 83,000


© City of Worms

Encouraging Residents for Change

Transition Tours

Showcasing Local Best Practices for Climate Action

Transition tours showcase local initiatives and projects about energy efficiency and energy savings. Municipal governments and local actors jointly organise the tours, targeting tenants and owners in selected neighbourhoods. By giving insight into energy saving strategies for residents, the tours foster a change in household energy use patterns and promote energy retrofitting. The tours also encourage exchange and synergies between municipal governments and citizen initiatives.

Transferable Results

Raising the awareness of local inhabitants on energy efficiency issues and solutions through transition tours is successful as they focus on the local situation in the neighbourhood. Sensitising inhabitants to this issue in the context of their everyday environment leads to long-term behaviour changes in energy saving and energy efficiency. Climate Alliance provides supporting guidelines and a web platform that can be used to implement a tailored campaign in other cities. The resulting tours depend less on national than on local conditions and involved actors.

Organisational Steps

Cooperating with local actors, designing the tours and preliminary dissemination activities require most time and resources:

- Local partners with insider access to the neighbourhood and its inhabitants need to be identified and contacted.
- Jointly with the local partners, a concept outlining target groups, neighbourhood issues, objectives and resources has to be developed. Accordingly, a monitored and evaluated test tour allows the improvement of the developed concept of the transition tour.
- Climate Alliance offers templates for leaflets, posters and further materials for public relations on the campaign website.
- Based on the concept and advertised via different communication channels, the transition tours and follow-up activities such as monitoring and evaluation are implemented.

Efforts can vary depending on the situation in the target neighbourhoods and whether or not local actors are already engaged.

Challenges and Solutions

The implementation of transition tours in the cities of Essen, Frankfurt and Worms led to the identification of some challenges, such as the difficulty to identify and cooperate with local initiatives and to target a wide range of citizens potentially interested in the campaign. Moreover, to increase word of mouth communication and the success of the operation, the tours have to be attractive to a wide range of people and provide a new perspective on the neighbourhood as well as relevant new information on energy retrofitting. This is achieved by planning and designing the transition tours diligently, and by choosing the right cooperation partners.

Long-Term Aspects

- Synergies can be put in place in the neighbourhood, for example with local exhibitions, the organisation of thermography walks (see p. 14) or the offer of energy consultations. It can also be an opportunity to create an open space for communication and exchange, or to cooperate with civil society on topics beyond retrofitting.
- CO_2 emission reductions are achieved as an effect of sensitisation about energy saving and energy efficiency issues. The effects last far in the future because creating awareness and spreading knowledge to a large network of people is the basis for change.

Contact Information
Project Partner:
Climate Alliance
Contact Person:
Jörn Klein
E-Mail: **j.klein@climatealliance.org**
Website: **climatealliance.org, stadtwandeln.de**

Country: **Germany**
City: **Essen**
Population: **583,000**

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Encouraging Residents for Change

EnergyWalk

App-Based Guided Energy Transition Tours

An app-based, free city tour was developed by the City of Essen. Interested citizens are guided to sites in Essen, where sustainable lifestyles are practiced and experiments with innovative concepts are implemented. At the locations of relevant transition ideas in the targeted neighbourhood, questions related to neighbourhood energy issues are answered such as: What is grey energy? What do rooftop gardens have to do with energy saving? What role does a 'Döner Kebab' play in the energy revolution? In cooperation with Climate Alliance and its experience with Transition Tours, a local organisation in Essen was enabled to set up this audio-guided, digital city tour with a focus on energy.

Transferable Results

The EnergyWalk is an opportunity for citizens to express their commitment to a sustainable way of life on a variety of issues and encourages creativity. In addition to sharing knowledge and information, the EnergyWalk brings people and ideas together and creates local awareness for a new, climate-friendly and sustainable lifestyle. Combining the EnergyWalk with other city tours on various topics further broadens its impact and reach. Involving local initiatives and education institutions involves an important target group and raises awareness of energy issues.

Organisational Steps

The planning and design process requires the main effort timewise compared to the implementation phase:

- The overall project coordination was managed by the City of Essen.
- A suitable pilot neighbourhood was identified. This neighbourhood – also referred to as "Creative Neighbourhood" – is specifically suitable for the EnergyWalk because interesting projects and many local activities are bundled there.
- Already before the project was implemented, the CAN multiplicator approach was set up in the neighbourhood to connect these local projects and activities.
- For the EnergyWalk, the concept, research, contributions and their implementation were carried out by students. Local students prepared the content of the app in a project seminar. Audio files were recorded and assembled as QR-codes permanently placed at the corresponding stations in the northern city centre of Essen. The City of Essen covered the costs for the professional preparation of the created audio recordings.
- The municipality of Essen mentored, financed and implemented communication activities with press releases and a kick-off event.
- To promote the application, local students created information flyers. The city organised and paid for the printing of 1,000 flyers.
- The City of Essen managed the contacts to the local stakeholders in the district, and to the local editorial offices. The project was repeatedly communicated at different intervals on various occasions.

Challenges and Solutions

To set-up a digital application, technical knowledge is necessary which may not be present in the municipalities' organisation. By teaming up with local organisations or education institutions, this barrier can not only be overcome, but new target groups can also be reached.

Long-Term Aspects

- Once the app and the QR codes are set-up, the app remains in place permanently and is usable without further investments.
- Citizens only need a smartphone and headphones to join the EnergyWalk. No prior arrangements or registrations are necessary to learn about neighbourhood energy issues and solutions. Thus, the threshold for citizens to get involved is very low.

Contact Information
Project Partner:
City of Essen
Contact Person:
Kai Lipsius
E-Mail: **Kai.Lipsius@gha.essen.de**
Website: **stadtwandeln.de/essen**

Country: **Belgium, France, Germany**
Cities: **Brest, Liège, Worms**
Population: **139,000, 198,000, 83,000**

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Encouraging Residents for Change

Thermography Walks

Using Thermography Effectively to Trigger Retrofit Measures

Thermography is an efficient tool to promote energy savings and to raise awareness on the benefits of proper thermal insulation. Guided thermography walks or face-to-face consultations, both targeted towards the inhabitants of a chosen neighbourhood, make visible energetic weak points in neighbourhoods and help identify heat loss in houses. This engages inhabitants and encourages them to take a closer look at their homes' energetic potential.

Transferable Results

Three cities in three different countries tested and successfully organised Thermography Walks, raising awareness on energetic losses and potential refurbishments. To reach as many inhabitants as possible, thermography walks are efficient but also rather expensive. Face-to-face consultations in the homes of neighbourhood inhabitants are easier to organise for smaller municipalities and take place over a longer period of time. The best way to capitalise on the impact of this activity is to cooperate with local associations. For example, Brest collaborated with "les Compagnons Bâtisseurs", who teach low-income people how to undertake small retrofit works in their houses.

Organisational Steps

In order to organise successful Thermography Walks, several steps are necessary:

- Identification of appropriate neighbourhoods and condominiums where renovation works were already undertaken or where buildings are in need of retrofitting. All landlords and tenants of a neighbourhood are targeted.
- Cooperation with homeowners willing to participate in the thermography walk to present their work and feedback on energy savings or to demonstrate the areas of heat loss on the buildings.
- Advertisement of the thermography walks via flyers, articles and word-of-mouth.
- Engaging an energy consultant capable to lead the thermography walk with a thermal imaging camera.
- Good visual support is necessary to explain the results of the thermography. It is for example possible to transfer the image from the camera directly to several tablets. Thus, it is possible to accommodate for more people in a thermography walk.
- Winter conditions with temperatures below 4 °C and, ideally, cloudy conditions are necessary to carry out thermowalks. They shouldn't last longer than 1.5 hours or cover a distance of more than 1.5 km.

Challenges and Solutions

The walk requires a thermal camera and thus advanced technical skills to analyse the pictures in real-time. To find enough owners or tenants willing to voluntarily share their renovation project, extensive outreach activities must be undertaken. Inadequate weather conditions like heavy rain or warm weather can lead to cancellation on short notice. Mobilising a group of inhabitants in winter, in the evening and in the cold can be challenging. Offering free, warm beverages to participants can mitigate this issue.

Long-Term Aspects

- To achieve long-term reductions of energy consumption through thermography activities, technical solutions to reinforce housing insulation have to be offered to the inhabitants as well.
- Information for potential support for retrofitting activities, such as local platforms or organisations or available financing schemes, should be shared with the participants to achieve a larger impact.

Contact Information
Project Partners:
Brest Métropole, Liège-Energie, City of Worms

Country: **United Kingdom**
City: **Hastings**
Population: **99,000**


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Encouraging Residents for Change

Behaviour Change Program

Promoting Behaviour Change Towards CO_2 Reduction

Optivo developed a Behaviour Change program to test the cost effectiveness of different resident engagement methods aimed at influencing energy efficiency awareness.

Transferable Results

The results from the study in Hastings with 100 households to increase energy efficiency performance support the business case to implement a larger scale behaviour change program. Especially active engagement and face-to-face visits promote the behaviour change of residents of deprived neighbourhoods. Where a reliable Energy Champion was involved, the approach „Active Engagement" resulted in a behavior change in residents, as did periodic face-to-face visits. The approach on virtual engagement did not provide conclusive results and the implementation of the Smart Homes approach proved to be difficult due to data privacy concerns of the residents.

Organisational Steps

100 households were identified in the neighbourhood, which were most in need of an increase in energy efficiency. These households were chosen to undergo physical improvements to ensure the achievement of an Energy Performance Certificate (EPC) of at least "C". The households were segmented into five groups each receiving a different form of engagement:

- Active engagement: Involvement of local energy champions
- Virtual engagement: Web and social media based engagement
- Periodic face-to-face energy visits
- Smart homes: Installation of the 'Switchee' heating control device
- Control group: Initial visit, final visit and survey

All targeted households were introduced to the programme and underwent an initial energy awareness survey. Face-to-face home visits were conducted, tailored towards each group. All properties received a welcome pack and a meter reading was taken where possible. Active engagement and face-to-face groups received a full Domestic Energy Assessor Home Visit. Specifications for each group comprised:

- Issue of emails to virtual group with seasonal tips for energy efficiency and links to other sources of advice.
- Energy Champions were provided with the same advice as sent to virtual groups. The Champions organised the engagement with their group members by themselves.
- The remaining groups received intermittent contact to take meter readings.

Challenges and Solutions

General engagement with residents both by phone and face-to-face was more difficult than originally anticipated. Of the 100 homes engaged, 73 received initial home visits or received information via their designated Energy Champion. The remaining homes couldn't be contacted to enable survey, or cancelled set appointments and then failed to continue engagement. This led to a high level of effort to get engagement with the residents before implementing the planned activities.

Long-Term Aspects

- Once a higher Energy Performance is achieved, households have reduced CO_2 emissions in the long term.
- Securing available annual statements from residents upon each contact stage and surveys capturing qualitative information on changes to general energy management behaviour and indicators of energy use and expenditure are necessary to track evolutions.
- An evaluation at the end allows gauging the take up of advice and the impact on energy use. This knowledge allows improving a potential roll-out of the behaviour change programme to other neighbourhoods or cities.

Contact Information
Project Partner:
Optivo
Contact Person:
Diana Lock
E-Mail: **diana.lock@optivo.org.uk**
Website: **optivo.org.uk**

Country: **France**
City: **Brest**
Population: **139,000**

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Encouraging Residents for Change

The “Chaud Devant” Action Plan

Triggering Grassroots Movements in Precarious Neighbourhoods

The creation of a grassroots movement to take action on carbon footprint reduction within a neighbourhood was successfully tested during the CAN project. The grassroots movement was initiated and jointly managed by local inhabitants and local stakeholders.

Transferable Results

By implementing a grassroots movement, citizen involvement and activation can be improved decisively. In the neighbourhood of Recouvrance, an action plan to reduce energy poverty was adopted and successfully implemented – this showcases the strength of the grassroots approach. By playfully involving the inhabitants, raising awareness for the topic of energy efficiency as well as a multitude of specific measures to reduce of energy consumption and energy poverty was achieved.

Organisational Steps

To reduce energy poverty, a programme consisting of diverse activities was set up by local stakeholders. The municipality seized the opportunities to work together with them. This grassroots approach to program implementation guarantees long-term effects on citizen engagement. The slogan of the programme, called “Chaud Devant” (meaning “Mind your backs!” in English, literally “Hot ahead!”) was the following: “In Recouvrance it’s your apartment that we heat, not our climate!”. The following activities were implemented:

- Several informal meetings were organised in local community centres. These events included games such as “Question pour un lampion” or “coffee-debates” such as “Café Moisi”. Overall, more than 170 people attended these activities.
- At all meetings, the “Bricobus” (a DIY-bus), which helps residents to receive and implement home-based improvements, was also present. Examples for such improvements are the repair of water leaks (flush, taps), the replacement of electric sockets, fixing rolling shutters or replacing window glazing.
- A 3-day event called “Toit par toi” (“Roof by yourself”) organised by voluntary organisation „Les Compagnons Bâttiseurs“ kicked off further activities. The focus was laid on raising awareness and offering thematic workshops for the residents. 1,800 inhabitants participated in the event, which was supported by more than 20 volunteers and employees.
- The main message of energy poverty was highlighted by the construction of a wooden roof frame. Each participant created a slate with a message on energy efficiency, energy poverty and housing difficulties.

Challenges and Solutions

It is important to involve local, non-administrative partners into the programme to achieve the best outcome. Brest Métropole for example joined forces with Ener’gence and Les Compagnons Bâtisseurs. These partners continue to implement similar activities in the long-term. The involved stakeholders have to be able and motivated to support the process. Moreover, strength lies in numbers, and cooperating with local actors widens the reach of the actions in the neighbourhoods.

Long-Term Aspects

- The successful implementation of the “Chaud Devant” programme in the Recouvrance neighbourhood leads to the implementation of similar programmes in other neighbourhoods. However, the programmes need to be tailored to the requirements of the targeted neighbourhood.
- After the initial set-up of the programme, local organisations are able to continuously implement relevant activities.

Contact Information
Project Partner:
Brest Métropole
Contact Person:
Gladys Grelaud
E-Mail: **gladys.grelaud@brest-metropole.fr**
Website: **brest.fr/l-europe/les-projets-europeens/climate-active-neighbourhoods-1793.html**

Country: **United Kingdom**
City: **Hastings**
Population: **99,000**


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Encouraging Residents for Change

Pop-Up Energy Desks

Easy Access to Energy Advice for Disadvantaged Residents

Energise Sussex Coast (ESC) targets residents living in deprived areas, who are more likely to be living in energy poverty. Pop-Up Energy desks increase the accessibility of the energy advice service, offered by ESC, to these residents. ESC specifically targets residents that are hard to reach with traditional instruments and thus, are often not accessing support services. By going into these neighbourhoods, ESC is able to engage and build relationships with disadvantaged or marginalised groups.

Transferable Results

Giving energy advice to disadvantaged residents at risk of or living with energy poverty often results in a reduction of CO_2 emissions. For the targeted residents, an important result is a reduction in their energy bill by switching to a cheaper energy tariff, based on ESC advice. The most impactful carbon reduction and energy saving measures are installations of improved insulation, cavity wall insulation, replacement boilers and draught proofing. ESC also promotes the 100 % green Our Power tariff, decarbonising the electricity consumption of the residents.
Further, energy advice clients are encouraged to participate in the other elements of ESC work such as becoming an Energy Champion or participating in other training events and workshops. Targeting families through Community Fun Days with activities such as face paintings, free breakfasts or "solar-boat-making" workshops, the issue of energy can be conveyed in a fun and enjoyable manner. In such circumstances, residents are usually more open to receive or even set up an appointment for energy advice.

Organisational Steps

To reach as many residents as possible, Pop-Up Energy Desks and other innovative instruments need to be as attractive as possible. Events such as Pop-Up Energy Desks or Community Fun Days require a high organisational effort, including:

- Staff time to plan, deliver and market the event
- Marketing costs
- Outreach activities costs, for example craft materials
- Food and refreshments

ESC also cooperates with further social services to provide as much information as possible. For example, clients with financial difficulties are referred to "Citizens Advice" and other similar local support services. ESC also refers people to the food bank or directly provides food bank and fuel bank vouchers.

Challenges and Solutions

In order to keep energy bill savings that were achieved through energy advice, residents have to evaluate their situation annually. Thus, advice activities would have to be repeated yearly as otherwise residents are likely to overpay again after one year. Ideally, energy advice clients are contacted after one year again to see if the tariff still suits their needs. In practice, this is very time consuming and relies on ongoing funding.

Long-Term Aspects

- Building relationships through Pop-Up Energy Desks with marginalized or at risk communities allows to provide tailored help, also for other issues, in the long term.
- Costly measures take longer than smaller measures to pay back the initial cost before turning into a net profit for the residents.
- The installation of energy efficiency measures or renewable energy generation results in a long-term benefit for the residents in both cost and energy savings.

Contact Information
Project Partner:
Energise Sussex Coast (ESC)
Contact Person:
Richard Watson
E-Mail: **richard@energisesussexcoast.co.uk**
Website: **energisesussexcoast.co.uk,**
flickr.com/photos/energisesussexcoast/

Country: **Germany**
City: **Essen**
Population: **583,000**

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Encouraging Residents for Change

greenApes Sustainable Behaviour Community

A Social Media Community to Reward Sustainable Behaviour

greenApes is a social network that rewards sustainable actions and ideas and that is active in several European cities. Essen introduced greenApes as a cross-media platform to communicate with and reward sustainable citizens. It is a flexible tool to support citizens and involve local initiatives.

Transferable Results

Local authorities act as patrons or sponsors of a local greenApes community. Supported by a digital platform and a smart phone app, sustainable tips, ideas, information, activities and places are discovered and shared together. Local sustainable companies are involved and provide rewards for active participation. These tangible rewards recompense the extra effort of a sustainable lifestyle. The use of a digital platform allows to directly measure CO_2 emission reductions that are achieved through such activities.

Organisational Steps

Users create an ape avatar and move as "apes" through the digital platform (the "urban jungle") to collect "Bankonuts" – the digital currency – and climb the ranks in the greenApes community. They surf the jungle to find interesting ideas for sustainable living or share their own experiences. A few "Apes" with more experience give good tips and inspire others. Users' postings on the platform are rewarded with BankoNuts: installation of solar panels, creative recycling ideas, recipes or recommending sustainable projects within the city. A sustainable map indicates the participating venues where BankoNuts can be redeemed. The venues can designate the premium individually. Rewards are decided by the participating partners and can include free smoothies or desserts, discount in local shops or free lessons for outdoor sports.

- The efforts from the city are limited to local community management as the available greenApes platform is already set up and ready for use. This includes general dissemination through other channels (website, publications, press releases etc.), support in approaching local venues offering sustainable services and goods to become partners of greenApes and organising events and workshops.
- The municipality initiates promotion activities for the platform and special events and workshops, where the "apes" get to know each other. This increases community loyalty.
- During special events, the city can allocate additional BankoNuts to participants involved in certain events or challenges (for example photo or upcycling competitions). This motivates citizens to continuously stay involved in the community.

Challenges and Solutions

Since not all user activities can be directly determined, the effect is deducted from a rating system based on the size and type of the activity, and the triggered community activity. Alternatively users can have their sustainable mobility activities certified by other apps, such as "Apple health" or "Google fit". Certified green actions however can be directly determined, allowing to measure the greenhouse gas reduction.

Long-Term Aspects

- Successful implementation and support of this activity results in a persisting and active community in the long-term. As a bottom-up activity, the community should not rely on municipal action in the long-term.
- The connection of an online tool and offline activities or events increase community loyalty.

Contact Information
Project Partner:
City of Essen
Contact Person:
Kai Lipsius
E-Mail: **Kai.Lipsius@umweltamt.essen.de**
Website: **greenapes.com/en/**

Country: **United Kingdom**
City: **Plymouth**
Population: **264,000**

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Encouraging Residents for Change

Engaging Communities Through Optimised Approaches

From Home Visits to Energy Efficiency

Plymouth City Council aims to empower residents to make simple behavioural and physical changes to their lifestyle in order to reduce carbon emissions. Activities are built around a free offer to the households including several measures: a home visit from a trained energy advisor, a bespoke home energy report produced for the resident, professional advice on energy issues, installed efficiency measures such as LEDs, heating controls, and draft proofing. Different marketing approaches were implemented to test methods of engaging residents in climate action.

Transferable Results

The most successful approaches to reach residents are mail-outs and word-of-mouth advertisement. The implemented activities resulted in a higher awareness and increased knowledge within the targeted communities. The expected CO_2 savings of the activities are approximately 800 kg per year and per house making use of the energy offer. Further reductions in CO_2 emissions are anticipated through multiplicator activities, e. g. citizens spreading their knowledge to neighbours and communities.

Organisational Steps

Thorough preparation is as vital as an intimate knowledge of the targeted neighbourhood is compulsory.

- Offering free energy activities is often not enough to reach a large target group. Thus, specific knowledge of the target group and neighbourhoods, their issues and motivations is necessary.
- The use of focus groups, interviews, and literature reviews allows focusing on a small number of key messages that draw the largest interest of the target group. In the case of Plymouth, these were the following: “Save Money”, “Reduce Energy Waste”, and “Keeping Warm”. The key messages are used in all promotional material for the project. Environment and climate change do not feature in the residents priorities and are not included in the main messages.
- Project promotion was initiated with postal mailings and some “door-knocking” to increase interest.
- Upon completion of around 100 visits, first assessments of the impact were possible. In the case of Plymouth, it was found that a huge interest from the households was generated and the topic of energy was successfully introduced in the day-to-day lives of the residents.

Challenges and Solutions

Time and staff resources needed for preparation and to generate good results are high. Educated and motivated local staff needs to be hired to implement the activities. Further, successful implementation requires a deep understanding of the local context that can only be gathered over time and by having direct contact with the target group. However, as soon as the activities have started and dissemination through word-of-mouth has begun, these efforts decrease substantially and sustainably.

Long-Term Aspects

- Over the lifetime of the implemented measures in 1.000 homes, a reduction of approximately 8,000 t CO_2 is achieved. In Plymouth, this represents a cost of approximately 42 Euros per tonne of CO_2 saved.
- The goal of the activity is twofold: residents making use of the offer should continue to adapt their behaviour; but they should also act as a multiplicator within their community and inspire further behaviour change in their community.

Contact Information
Project Partner:
Plymouth City Council
Contact Person:
Paul Elliott
E-Mail: **paul.elliott@plymouth.gov.uk**
Website: **plymouth.gov.uk**

Country: **Germany**
City: **Worms**
Population: **83,000**


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Encouraging Residents for Change

Energy Caravan Plus

Systematically Motivating Home Owners for Energy Retrofits

The Energy Caravan plus is an offer for citizens in neighbourhoods with a low energy performance to receive energy advice in their own homes. The one-hour consultations are conducted by trained energy consultants and are free of charge. The aim of the Energy Caravan plus is to motivate house owners to energetically refurbish their houses.

Transferable Results

A reduction of 225 to 338 kg CO_2 per advised household and per year can be achieved through the Energy Caravan plus. The number depends on the implemented energy saving measures.

Organisational Steps

- A neighbourhood with around 400 households and buildings from the 1950s to 1960s is a suitable target for the Energy Caravan plus. Data about the structure of the neighbourhood, such as names, addresses, phone numbers and ownership rights is necessary to identify the target group. This data is in many cases publically available.
- Depending on the size of the chosen neighbourhood, hiring a suitable number of energy consultants ensures the smooth implementation of the Energy Caravan plus. One energy consultant can be in charge of roughly 100 households. The hiring process can be time consuming and thus should be scheduled accordingly.
- Communication activities targeting the neighbourhood ideally start two to three weeks before the start of the Energy Caravan plus. An official invitation with all necessary information and signed by a well-known official such as the mayor is sent to all house owners in the neighbourhood. Further, distributing posters and flyers in the targeted neighbourhood and newspaper articles further promote the Energy Caravan plus. Preferably, an information event is organised jointly with other events appealing to the public.
- The energy advice includes topics such as heating pump replacement, new windows or doors, energy efficient heating and ventilation and insulation. Measures range from small, low-cost investments to complete refurbishment. The house owners receive a report with specific advice for measures.
- Synergies with other methods improve the outcome of the Energy Caravan plus. A thermography walk during the project period allows engaging more citizens and promoting the Energy Caravan plus, while building synergies with other services such as free energy check of the electric devices in households can improve the appeal of the offer.

Challenges and Solutions

To quantify the results of the Energy Caravan plus, evaluation activities need to be undertaken. One year after the Energy Caravan plus, a questionnaire was sent to all participants to evaluate how participants became aware of the project and whether they had already implemented measures. The evaluation helps improving the quality of the consultations and gives valuable insight in appropriate advisory strategies. An evaluation meeting with the energy consultants also contributes to improving the quality of the Energy Caravan plus.

Long-Term Aspects

- Once established, the Energy Caravan plus can be repeated in all neighbourhoods of the city.
- House owners participating in the Energy Caravan plus increase their knowledge on energy saving and the potential for energy saving of their houses. This reduces the inhibition threshold to take action and implement measures. The municipality also increases its knowledge and is able to answer questions and support citizens on this issue in the long term.

Contact Information
Project Partner:
City of Worms
Contact Person:
Katharina Reinholz
E-Mail: **umwelt@worms.de**
Website: **worms.de/de/mein-worms/umwelt/energie/Energiekarawane.php**

Country: **Belgium**
City: **Liège**
Population: **198,000**

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Encouraging Residents for Change

Aerial Thermography

Raising Awareness by Visualising Heat Loss

A plane equipped with an infrared camera took thermographic pictures of all roofs in the city of Liège. The pictures provide necessary information to increase the knowledge on the energy situation in the neighbourhoods and to improve the impact and focus of the city's energy activities. The publication of the results coupled with face-to-face consultations successfully promotes the issue of energy saving and energy retrofits.

Transferable Results

Aerial thermography is a strong communication tool which has proven to be very efficient in raising awareness of energy efficiency and mobilising citizens. By communicating the results during face-to-face sessions, targeted information for follow-up energy saving activities is also relayed to citizens, resulting in a bigger impact. Thus, citizens are advised on their current situation and on potential measures to reduce energy consumption. Furthermore, they are referred to further public services.

Organisational Steps

The following steps were undertaken:

- The technical specifications for the aerial thermography and the overall project objectives had to be defined to start the public procurement process and find a contractor for the thermography flights.
- Cooperation with the energy grid provider was initiated to obtain data about the electric and gas network and consumptions.
- The communication of results was organised, taking into account rules on data privacy and available internal resources. Staff charged with the communication of the results received a training to read thermographic pictures and to use the software.
- Upon completion of the thermography flights and processing of the results, a press conference was scheduled. Outreach activities including online campaigns and newspaper articles further raised awareness of the issue.
- Citizens needed to subscribe to a waiting list in order to receive the results of their houses during face-to-face consultations – more than 500 citizens made use of this tool.
- Special events with both general presentations on thermography, energy efficiency and retrofitting as well as face-to-face consultations were organised in each neighbourhood.

Challenges and Solutions

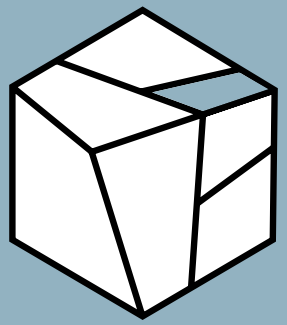
To achieve a sustainable result of the thermography flights, citizens need to review and modify their behaviour and energy consumption. This was accomplished through coordinating the face-to-face consultations with additional activities offered by the city, such as workshops, conferences, low rate loans, and technical and financial advice.
The public procurement specifications have to be defined diligently as it is crucial that the results from the thermography meet the objectives. The broadcasting of results takes place through individual face-to-face consultations and implementation thus requires a lot of time and resources.

Long-Term Aspects

- Aerial thermography contributes to motivating citizens to take steps towards energy saving and can be used in a variety of related energy efficiency activities within the neighbourhoods.
- Citizens receive information on the current status of the insulation of their houses, but are also advised on subsequent steps and available public services. Using this synergy results in overall more efficient and effective public services.
- Beyond aerial thermography, a strong collaboration was developed with the energy grid provider. The technical agents can provide the city with precious data about energy consumption in the neighbourhoods.

Contact Information
Project Partner:
City of Liège
Contact Person:
Fabienne Coumanne
E-Mail: **fabienne.coumanne@liege.be**

Support & Financial Tools



Support & Financial Tools

The implementation of energy efficiency measures and retrofits in homes are connected to certain costs. Especially in neighbourhoods with the need of energy retrofitting, these costs often can not be covered by residents themselves, who are affected by low incomes or even energy poverty. People living in energy poor situations are not able to afford their basic energy needs, like heating, due to high and increasing energy prices. But even households which are not affected by energy poverty, find themselves faced with other obstacles, e.g. lack of information or lack of awareness about their energy consumption patterns.

A variety of support and financial tools and methods help decreasing energy consumption by increasing energy efficiency. Face-to-face energy visits in Brest (FR) are a very effective method especially for energy poor households. The cooperation with local partners allows implementing a network of stakeholders to spot energy poor situations and to offer advice for those affected. In Liège (BE) an ambassador program offers the opportunity to provide financial and social guidance for residents who are looking for advice.

A local fund supports collective climate and energy action of neighbourhood initiatives in Arnhem (NL). These initiatives build an important link between municipalities and individual households. The fund supports the implementation of local carbon reduction measures and is set up for a long-term partnership with neighbourhood initiatives to increase the effectiveness of these measures.

The ownership of energy production as a key to empower the residents. A crowdfunding-campaign for local energy transition projects in combination with local off-line communication helps to support bottom-up solidarity in Essen (DE) and offers the residents the opportunity of low-threshold participation in the transition process.

Long-term community shared responsibility can be ensured via implementation on a broader scale. In Hastings (UK) residents can purchase locally generated energy via a local community energy tariff by a non-profit energy provider. Additionally, deep retrofits of homes and solar PV installations are carried out by a local housing provider, which increase the energy efficiency and comfort for the residents. The city additionally commissioned a study on the potential for renewable energies in order to democratise the access to local energy supply on the neighbourhood level. In Mantes-la-Jolie (FR) the implementation of **energy performance contracts for co-owned buildings offers the chance to conduct large scale thermal insulation.**

Overall, the possibilities for support and financial tools-related to climate action measures are diverse and manifold. **The local and financial situation of neighbourhoods needs to be taken into consideration first in order to find the right solution for it.**

Country: **France**
City: **Brest**
Population: **139,000**

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Support & Financial Tools

Face-to-Face Energy Visits

Offering Advice to Low Income Households

Face-to-face energy visits help tackling energy poverty by visiting households living in poor conditions, providing them with advice or directing them to other help devices offering solutions tailored to their needs. The local energy and climate agency in Brest, Ener'gence, offers energy-visits including technical and social support. The target group of the energy-visits are inhabitants encountering difficulties in paying their energy bills or who struggle to keep their home adequately warm during winter. The activities of the energy-visits not only involve the visit itself, which last between 2-3 hours, but also include follow-up support and an assessment.

Transferable Results

Results can vary widely in the assessment visit one year after the visits. Depending on the households' habits, on their heating system, on whether they put into practice the advice they received during the first home-visit. Further factors are whether the equipment installed was appreciated and correctly used. Ener'gence estimations of potential savings after a visit are on average of 138 euros per year per household regarding water and electricity as well as a reduction of 35kg of CO_2 emissions per year per household. Also, the monthly follow-up of energy and water bills is proposed to all households who can receive an analysis of their consumption on request. Cooperation with local organisations further improves the impact of this activity.

Organisational Steps

In order to implement this type of activity, it is vital to communicate efficiently and to teach partner organisations to spot energy poverty situations. This network of stakeholders comes into play at two times:

- ahead of the visit, to direct recipients to this type of solution;
- after the visit, to ensure the follow-up in partnership with Ener'gence.

One year after the initial visit, an assessment visit should be organised for all involved households. This allows to test the impact of the visits and to improve the methodology for future energy-visits.

Challenges and Solutions

The main barriers to the success of an energy-visit consist of getting in contact and of setting a time-schedule with recipients, who sometimes happen to forget about the visit or not turn up on the occasion.

Long-Term Aspects

- In terms of cooperation with local stakeholders, meetings with social workers, and social organisations, such as the "Compagnons Bâtisseurs", to discuss current social issues are beneficial. Including further social issues in the consultations during the energy-visits makes the activity more effective.
- Testimonies of dwellers receiving one-year-after visits have shown that the household's awareness on the potential to save energy and to lower the energy bills has increased in the long-term.

Contact Information
Project Partner:
Brest Métropole
Contact Person:
Gladys Grelaud
E-Mail: **gladys.grelaud@brest-metropole.fr**
Website: **brest.fr/l-europe/les-projets-europeens/climate-active-neighbourhoods-1793.html**

Country: **Belgium**
City: **Liège**
Population: **198,000**

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Support & Financial Tools

Label “Ambassador Liège-Energie”

Facilitating Residents’ Choices via a Quality Label for Local Craftsmen

Liège-Energie, a local energy agency, established a partnership with professionals in the sector of energy retrofitting for the quality and service label “Ambassador Liège-Energie”. This label makes the access to reliable contractors for energy retrofits for house owners and tenants easier, which was a main obstacle to refurbishments in the area. Thus, the label is beneficial for both citizens and local craftsmen.

Transferable Results

A kick-off event identified the interests and needs of local contractors for this kind of label. 27 companies actively participated and provided valuable input. Based on this information, Liège-Energie created a convention specifying the commitments of the label partners, as well as the terms and conditions. In order to join the label and to become an Ambassador, the contractor submits an application to Liège-Energie and signs the convention agreeing to the terms and conditions.
Targeting both citizens and potential Ambassadors, communication and promotional material as well as several tools were created such as a logo, a guide to the available financial aids of Wallonia, e-mail campaigns and articles. Further, an extensive website informs citizens and interested professionals on the content and advantages of the label. To facilitate joining the label, craftsmen are able to apply directly on the website.

Organisational Steps

The steps to set-up and implement the label were the following:

- Evaluation and creation of a database of existing labels, as well as contacting professionals to tailor the label to local needs. The first step focused on assuring that contractors inform citizens on the available financial aids for energy retrofits.
- Setting-up of the label and promotion among craftsmen to join the label and become Ambassadors.
- Improvement of the energy retrofits services provided by Ambassadors, evaluation and improvement of the label itself.
- Continuous promotion among local citizens during numerous events within the neighbourhoods and at the “Maison de l’Habitat” (see p. 6).
- Development of a methodology to estimate the reduction of CO_2 emission according to the type of retrofit (e.g. wall, roof, heating, windows or door). This allows calculating the CO_2 emission reduction depending on the type of retrofit implemented by ambassadors.

Synergies were created via cooperation with the Construction Chamber of Liège, a community college, other INTERREG projects and with other, transnational labels or associations.

Challenges and Solutions

A major challenge is assuring and measuring the quality of the craftsmen’s work, mobilising contractors in a quite small territory and increasing the efficiency of the label by increasing the level of management. Currently, the only way to evaluate the quality of the work is by customer surveys. To improve the evaluation, thermography audits after the retrofits will be implemented to improve the evaluation of the service quality. A strong procedure was implemented to check and follow-up on the label applications. Further, a management committee was created with the Construction Chamber of Liège to ensure the management of the administrative and technical aspects of the label.

Long-Term Aspects

- The label is constantly evaluated and developed, requiring ongoing management and reliable processes.
- CO_2 emission reduction through refurbishments are achieved over many years.
- Once certified, the Ambassadors continuously create added value and increase awareness for the issue.

Contact Information
Project Partner:
Liège-Energie
Contact Person:
Bénédicte Grodent
E-Mail: **can@liegeenergie.be**
Website: **maisonhabitat.eu, liegeenergie.be, liegeenergie.be/coisir-un-entrepreneur**

Country: **Belgium**
City: **Liège**
Population: **198,000**

Support & Financial Tools

Financial and Social Guidance by Ambassadors

Create Positive Synergies by Cooperating with Ambassadors

Liège-Energie developed seven activities within the context of the Climate Active Neighbourhoods project. Two main activities were the creation of a label (see p. 25) for craftsmen offering energy retrofitting services, and the implementation of social guidance mechanisms. By complementing these two activities, Liège-Energie is able to provide extensive, sustainable and value-adding support to citizens in need.

Transferable Results

All tools developed by Liège-Energie are interconnected and use a global approach to provide sustainable solutions to energy issues in the targeted territory.

Organisational Steps

Craftsmen who are certified Ambassadors of the label are encouraged to promote available public financial aids to their clients. In addition, the ambassadors inform Liège-Energie of clients in difficult situations. This exchange of information allows Liège-Energie to take action and provide help to the concerned citizens. The following real-life case illustrates how the cooperation of Ambassadors and Liège-Energie provides real help to a citizen with economic problems.

- Shortly before winter, an Ambassador visited a client whose heating system broke down completely. Due to their economic circumstances, the client is unable to pay for the repair of the heating system.
- The Ambassador informed Liège-Energie of the situation.
- Liège-Energie contacted the client and informs them on the possibilities of financial assistance (loan) to repair the heating system. An analysis of the client's finances revealed that the client is engaged in debt mediation. Thus, the client would be unable to fulfil the criteria to receive a loan.
- Liège-Energie included the client in the guidance process, offering support for grant application and a one-year follow-up assistance.
- A social assistant was assigned to the client and supported the process, including negotiations in the debt mediation process resulting in a favourable outcome for the client.
- The client was thus able to apply for a loan.
- The loan was approved by the loan application committee, and the credit committee is currently in the process of approving this request as well.

Through the close cooperation of Liège-Energie Ambassadors and Liège-Energie, citizens in need can be identified, reached and supported. A support process tailored to the respective economic and personal circumstances of the clients facilitates the achievement for a positive outcome.

Challenges and Solutions

Ambassadors do not always forward all information on citizens in need. Thus, good communication between Liège-Energie and the Ambassadors is mandatory to support households in need. Ambassadors are responsible to contact Liège-Energie whenever they encounter at-risk cases. This results in additional organisational efforts on both sides that can be mitigated through clearly established procedures.

The final decision whether a client is able to receive a loan for energy retrofits or energy improvement services is taken by the credit committee. A positive decision can't be guaranteed. Especially when a client is already indebted, it is often difficult to assess whether an additional loan is sensible. The assessment has to be very detailed and must balance the positive and negative effects of the situation.

Long-Term Aspects

- This relationship built with Liège-Energie Ambassadors and the guidance that was put into place through the CAN project are now an integral part of Liège-Energie.
- This relationship is tested in reality and received a very positive feedback, providing support to local citizens in need.
- The processes and cooperation are developed continuously.

Contact Information
Project Partner:
Liège-Energie
Contact Person:
Alison Colon
E-Mail: **can@liege-energie.com**

Country: **the Netherlands**
City: **Arnhem**
Population: **159,000**

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Support & Financial Tools

"AANjaagfonds" Neighbourhood Fund

Local Fund to Support Collective Action in Neighbourhoods

In energy transition and climate policy, neighbourhood initiatives are an important intermediary between the municipality and households. The aim of the municipal fund "AANjaagfonds" ("Boosting" fund) is to support neighbourhood initiatives – a group of enthusiastic residents – who want to implement local measures to reduce CO_2 emissions. Neighbourhood initiatives access these municipal resources through a simple and transparent process.

Transferable Results

The fund increases effectiveness of the initiatives, meaning better achievements in energy savings and CO_2 emission reduction. Thanks to activities related to the fund, the number of active neighbourhood initiatives in Arnhem was tripled. A well-developed communication strategy, including word-of-mouth and face-to-face communication, targets all neighbourhoods and contributes decisively to the success of the fund.

Organisational Steps

In a first phase, an intensive cooperation with front runner neighbourhood initiatives has to be set-up. This allows identifying the support needed by the neighbourhood initiatives to effectively develop and execute their activities. Inter alia the following issues require support from the municipality:

- Generating knowledge related to the specific neighbourhood situations, to identify potential measures for achieving the targets and to identify the costs of implementation and expected benefits.
- Generating knowledge on the involvement and engagement of households or persons, especially relating to raising awareness and the implementation of communication strategies.
- Hands-on support to realise the identified ambitions with available resources, especially considering the limited number of volunteers and available time.
- Budget to undertake inventories and energy studies, set up local communication, social media and organise workshops and meetings.

Based on these general needs, Arnhem set up a targeted fund for external expertise, hands-on support, studies and communication activities. This allows the collection of information about the cooperation of the municipality and its partners by the means of grassroots approaches. All knowledge is included in the local governance model, the "Arnhem Approach" (see p. 5).

Further steps to take into account are the following:

- Set-up of the fund
- Set-up of the core team with active and experienced residents and external experts linked to the local networks on energy and climate
- Development and implementation of a transparent and simple process to invite, assess and reward proposals from neighbourhoods
- Development of a communication strategy linked to the municipal communication strategy on energy transition.

Long-Term Aspects

- Besides immediate effect on energy use and renewable energy production, the process is designed to promote continuity of the activities of the involved neighbourhood initiatives. This contributes to the establishment of an active civil representation in energy transition processes in the long run.
- After the initial test phase, municipalities have enough information to decide on a long-term implementation of local funds.
- Evaluating the effectiveness of the fund at the end of a test phase allows drawing conclusions for local decision makers. Based on these facts, a long-term implementation of such a fund can be reasonably justified.

Contact Information
Project Partner:
Municipality of Arnhem
Contact Person:
Hans van Ammers
E-Mail: **hans.van.ammers@arnhem.nl**
Website: **arnhemaan.nl/het-aanjaagfonds**

Country: **Germany**
City: **Essen**
Population: **583,000**

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Support & Financial Tools

Crowd Funding for Local Climate Action

Enhancing Residents' Participation in Community Energy Projects

Crowd funding is a method to realise community energy projects. With the help of the internet, crowdfunding can draw support not only from the neighbourhood or city but from people across the city, entire countries and increasingly even internationally. The donor-based platform in Essen "Gut für Essen" ("Good for Essen") is run by Sparkasse, a local savings bank, which doubles the crowd donations when certain thresholds are met. For Essen it provides a flexible tool for crowd donation, suitable for small local climate action neighbourhood projects such as rent-for-free cargo-bikes.

Transferable Results

Crowdfunding refers to the financing of projects or companies by a large number of donors, mostly organised via dedicated internet platforms. Especially for creative, environmental, cultural and social projects crowdfunding is often attractive, as there are hardly any financing offers that are tailored to their specific needs.

Meanwhile, there are a handful of crowdfunding platforms that have specialized in brokering small investments in energy transition projects. The platforms can handle citizens' investments in a few minutes. In principle, everyone can participate in financing the energy transition with a few clicks. The minimum investment amount is sometimes less than € 100.

Combination with off-line or off-platform communication allows for organising local funding from the neighbourhood. Furthermore, crowdfunding platforms offer citizens a way to participate financially in climate action, even if no local climate mitigation project is looking for investors. Usually the platforms show how much of the pursued sum is already acquired in numbers or a bar chart and also allow for comments from investors, strengthening the identification and engagement – especially for local projects.

Organisational Steps

Crowdfunding platforms are very diverse. In practice, four main models are distinguished: donor-based, counter-performance-based crowdfunding – also known as crowd-sponsoring – as well as credit-based crowdfunding (crowd-lending) and crowd investing, in which the investor speculates on a financial return.

- Donation-based crowdfunding: The crowd donates money for a specific project within a certain period of time without receiving anything in return.
- Counter-performance-based crowdfunding: The donors receive a symbolic, non-monetary consideration, such as exclusive access to realised venues.
- Credit-based crowdfunding: The lenders are promised that the amount will be repaid with or without interest.
- Crowd investing: The investor receives a share in future profits of the financed project.

In Essen so far only the donor-based approach has been realised. However local projects can also use national or international platform to fund or co-fund their projects.

Challenges and Solutions

There is a risk of a total loss of the invested capital, which is why the opportunities and risks of an investment, also via a crowdfunding platform, should be thoroughly weighed up. Establishing a local crowd investment platform would be very expensive and is not necessary. The existing national or even European platforms offer all required services. A proficient overview with all necessary information is provided by the EU project citizenergy (citizenergy.eu).

Long-Term Aspects

- Offline or off-platform communication within the neighbourhood, community or city can create enough attention to run successful funding campaigns for local climate projects and at the same time allowing for bottom-up solidarity and financial participation from the citizens.

Contact Information
Project Partner:
City of Essen
Contact Person:
Kai Lipsius
E-Mail: **Kai.Lipsius@gha.essen.de**
Website: **gut-fuer-essen.de**

Country: **United Kingdom**
City: **Hastings**
Population: **99,000**

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Support & Financial Tools

Local Community Energy Tariff

Supporting Residents at Risk of Energy Poverty

Energise Sussex Coast (ESC), jointly with local non-profit partners, set up a community energy tariff. Through this tariff, residents can purchase locally generated, green energy from a trusted partner energy company. The tariff is primarily aimed at local people wanting access to green energy and keen to make a contribution to local community energy initiatives. These people are likely to be already actively seeking green energy products in the market.

Transferable Results

By switching to a green tariff, an average household consuming 3000 kWh per year can achieve carbon savings of around 300 kg per year. Customers also save money and help support local community energy work. Another advantage of local energy schemes is that the funds are spent and re-invested in the local economy. This can have positive, synergetic effects on local employment and infrastructure.

Organisational Steps

To achieve the goal, cooperation with local organisations and a comprehensive communication strategy is needed:

- ESC cooperated with Our Power, a not-for-profit energy provider aiming to offer fair, clean energy to the United Kingdom energy market.
- Our Power launched a competitively priced, green tariff ("+IMPACT") that helps maintain the lowest prices for customers experiencing or at risk of energy poverty. +IMPACT's electricity is green and, where possible, generated from community-owned energy schemes and renewable sources in the United Kingdom.
- Training sessions for staff working directly with the residents of targeted neighbourhoods are needed, as they need to understand the set-up and inner workings of the tariff and the energy market to be able to promote the tariff.
- Outreach activities such as leaflets, web campaigns and a home page are implemented to reach the target group. An electric "energy van" is touring neighbourhoods to introduce the new tariff to the population. Publishing articles in local newsletters on the tariff and the surrounding issues further publicises the activity.
- For each customer switching to the +IMPACT tariff, ESC and its partners receive a referral fee. These funds are re-invested in local community energy work.

Challenges and Solutions

Most citizens are not confident in their knowledge of the energy and tariff systems. Thus, significant marketing resources need to be invested to promote a new, green tariff to a large quantity of citizens. Face-to-face contact with members of the local community at energy desks and community centre events is essential to develop trust and a better understanding of the benefits of this new way of working in the energy market.

Long-Term Aspects

- Once sensitised, citizens remain aware of the issue of switching to green energy tariffs to save money and to reduce their CO_2 emissions.
- A high number of people switching to the tariff is needed for the tariff to remain competitive and available in the long term.
- To keep local citizens committed to the green tariff, renewable energy generation at the local level has to be set up and included in the tariff.
- Long-term cooperation with all involved partners needs to be set up and established.

Contact Information
Project Partner:
Energise Sussex Coast
Contact Person:
Richard Watson
E-Mail: **richard@energisesussexcoast.co.uk**
Website: **energisesussexcoast.co.uk**

Country: **United Kingdom**
City: **Hastings**
Population: **99,000**


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Support & Financial Tools

Democratisation of Local Energy

Increasing Knowledge through a Neighbourhood Study

To assist Hastings partners in the wider aim to reduce CO_2 consumption in the residential sector in the Ore Valley, Hastings Borough Council commissioned a study into the democratisation of energy options. This study provided a thorough assessment of the all factors relevant to energy supply and demand within the municipality.

Transferable Results

The results of the study have improved the knowledge about the municipal's situation in the energy sector and offered valuable insights about which areas need to be improved and where the action needs to be taken to move closer to a low carbon future. With this information at hand, the study provides a solid ground to inform the energy policy development.

Organisational Steps

Three distinct key areas have been identified, which were required to be addressed within the study:

- Benchmarking of current energy demand and supply in the target neighbourhood
- Local energy options including energy generation and efficiency
- Local balancing/democratised supply options

The invitation to quote required each consultant to state how they would approach the following areas of study, which also displays the structure of the study.

Energy Baseline:

- A methodology for provision of a baseline and compile all data into suitable units.
- Current energy demand in the area (including from dominant building types, building uses, proportion of socially rented stock, energy efficiency standards within existing housing stock).
- Current energy supply in the area (including an assessment of how homes are heated, proportion of stock (social rented, private sector) with renewable / low carbon technologies) and high level view of who residents buy their energy from with an estimate of switching rates)

Energy Generation Options:

- Investigate opportunities for a micro heat district network, energy storage, EV Infrastructure, roof top solar and identify potential delivery options for multiple installations.
- Give consideration to where district heat has been successfully retrofitted and provide advice accordingly as well as to renewable energy, low carbon and other heating options
- Provide a review of electricity connection points in the area e.g. sub-stations
- Identify the potential for building integrated renewable heat technologies (heat pumps and biomass boilers) setting out the type of building that would be suitable for such technology

Energy Efficiency:

- Investigate opportunities for large scale energy efficiency schemes
- Identify potential models for a neighbourhood approach to energy efficiency

Additionally, models for democratised delivery of local energy supply while taking into account the existing demand and supply have been reviewed. Potential funding options and finance models needed to be conducted. The findings and potential options build the basis for all future climate action measures in Hastings.

Long-Term Aspects

This study provided a solid basis for energy policy development not only in the CAN neighbourhood, but also across the whole municipality. The information provided by the study was used as evidence (alongside a wider borough energy study) to inform the Hastings Energy Strategy.

Contact Information
Project Partner:
Hastings Borough Council
Contact Person:
Matthew China
E-Mail: **mchina@hastings.gov.uk**
Website: **hastings.gov.uk**

Country: **United Kingdom**
City: **Hastings**
Population: **99,000**

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Support & Financial Tools

Optimised Deep Retrofits

Increased Effectiveness of Retrofits through Prior Data Modelling

"Deep" retrofits – meaning substantial retrofit works – were delivered to 100 homes owned by Optivo, a social housing company, in the Ore Valley, Hastings. The works target properties with the lowest Standard Assessment Procedure points (SAP) and correspond to the policy target to improve all fuel poor homes up to SAP 69 or Energy Performance Certificate (EPC) band C by 2030. To achieve the best outcome, comprehensive data gathering and modelling is necessary. This allows determining the best retrofit measures for each unit. Coordination with existing government programs further assures and improves the quality and quantity of the retrofits.

Transferable Results

Inhabitants benefiting from a new heating system or other retrofit works see an immediate improvement in life quality and comfort levels. Coupled with a reduction in energy bills, this activity profits from a very positive reception from the local population. The use of Big Data assures the quantity and quality of the retrofit measures and results in substantial CO_2 emission reductions.

Organisational Steps

- Gathering of information on the housing stock: In the case of the Ore Valley, these are usually terrace houses, semi-detached homes and low level flats.
- Data modelling: 280 surveys were carried out on Optivo homes. Of these, 130 were under SAP69 and thus included in the scheme. Via a software a combination of measures per property to bring each home up to a minimum of SAP 69 were calculated.
- Tendering: By awarding a tender for the retrofit works selected homes benefit from energy efficiency measures. The improvement works include new windows and doors, floor, roof and wall insulation and new heating systems. Several properties were joined to the gas grid and received heating upgrades. Innovative technologies were introduced in several homes. Further, a number of homes received a solar PV with battery storage as part of the project.
- Communication: Upon selection of the properties and works, the inhabitants and residents were contacted. Customer satisfaction surveys are carried out at the end of the installation process.
- Assessment: EPCs are carried out before and after the works in order to calculate the change in SAP points.
- Monitoring: Energy efficiency is being monitored via meter readings and the installation of technology gauging energy use behaviour following the retrofits.

Challenges and Solutions

Getting in touch with the residents proved to be challenging in some cases. This issue was mitigated by allocating a dedicated Project Coordinator, Resident Liaison Officer and Surveyor to the project. Overall, a 90 % success rate in gaining access to homes selected for the project was achieved.

Long-Term Aspects

- Findings from the data modelling, assessment and monitoring modify the current and future approach to retrofit homes. The information allows delivering vastly improved retrofits, as the quality of "bulk" EPCs is often poor due to incorrect assumptions about the fabric of buildings.
- All future retrofits will be supplemented by comprehensive pre-installation surveys to make the available data, and thus the retrofits, more reliable.
- Using Geographic Information Systems allows identifying further clusters of poorly performing buildings that can be targeted with a comparable retrofit strategy.

Contact Information
Project Partner:
Optivo
Contact Person:
Diana Lock
E-Mail: **diana.lock@optivo.org.uk**
Website: **optivo.org.uk**

Country: **France**
City: **Mantes-la-Jolie**
Population: **45,000**

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Support & Financial Tools

Energy Performance Contracts

An Innovative Tool for Energy Retrofits in Co-Owned Deprived Properties

A neighbourhood in Mantes-la-Jolie consists of a very large social housing and private housing estate built in the 1960s. Since then, the district gradually declined and is facing serious urban, economic and social problems. Public funds have been granted to social housing zones for renovations. While social housing is improved, private housing (around 24 % of 6.000 homes) is still in a run-down state. These co-owned multi-storey homes require a lot of heating and use large amounts of domestic hot water as a result of poor insulation. To tackle these problems, EPAMSA initiated the Energy Performance Contract (EPC). The contract is an innovative tool adapted to energy retrofits and offers a long-term solution to the problems co-owned properties are facing.

Transferable Results

The large-scale thermal insulation works lead to significant reductions in utility bills for the co-owners as well as reduced energy use. The EPC has supported 132 landlords of two co-owned properties.

Organisational Steps

The implementation of the EPC can be described in ten steps:

- Joining the trade-union councils: Stable partnerships with local stakeholders in the building sector encourage investments and motivation for the project.
- Carrying out studies: An energy consumption assessment is crucial to gain knowledge about the local heat production, distribution and consumption within the targeted properties.
- Preparing the contract: In order to achieve the defined goals it is necessary to coordinate the specifics of the contract with the co-owners.
- Launching a consultation procedure with companies: Consulting with companies and setting up a tendering document is important for project implementation.
- Entering into a competitive dialogue: A competitive dialogue with the different companies helps to decide upon the best choice of company.
- Including co-owners in the analysis: During the dialogue the co-owners are informed about the status. The EPC projects initiated are 80 % publicly funded. The initial share minus the received grants are covered by the co-owners, amounting from € 2,000 to € 15,000 per home.
- Financing and funding: Financial stakeholders act as providers for the required funding. An economically viable solution and improvements to the living conditions connected to thermal rehabilitation are key to win over stakeholders.
- Convincing the banks: In order to find pre-financing for the public aid, banks need to be persuaded to invest in the scheme.
- Signing and beginning the retrofitting works: The target of the program is to decrease heating charges by 53 to 59 %
- Monitoring the work and long-term support; After completion of the work, an evaluation verifies that the energy savings guaranteed in the contract were achieved. Potential renegotiations will be supported by EPAMSA as support to the co-owners.

Challenges and Solutions

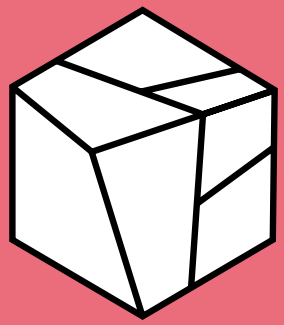
A French law for the national commitment for the environment was passed in 2009. From this law the EPC emerged with the main goal of guaranteeing a fixed level of energy consumption to contractors. A consortium of companies agreed upon a guaranteed level of energy consumption and carried out the required retrofitting work.

Long-Term Aspects

The utility costs amount is guaranteed by the company for a total of 15 years, thus enabling control over heating charges for this amount of time.

Contact Information
Project Partner:
EPAMSA (Établissement public d'aménagement du Mantois Seine Aval)
Contact Person:
Sandrine Josse
E-Mail: **s.josse@epamsa.fr**
Website: **epamsa.fr**

About Climate Active Neighbourhoods



Climate Alliance
European Secretariat Headquarters
Galvanistraße 28 | 60486 Frankfurt am Main
T. +49 69 717 139-0
E. europe@climatealliance.org

Editors Cassandra Silk | Madlie Le Bihan | Svenja Enke
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About Climate Active Neighbourhoods

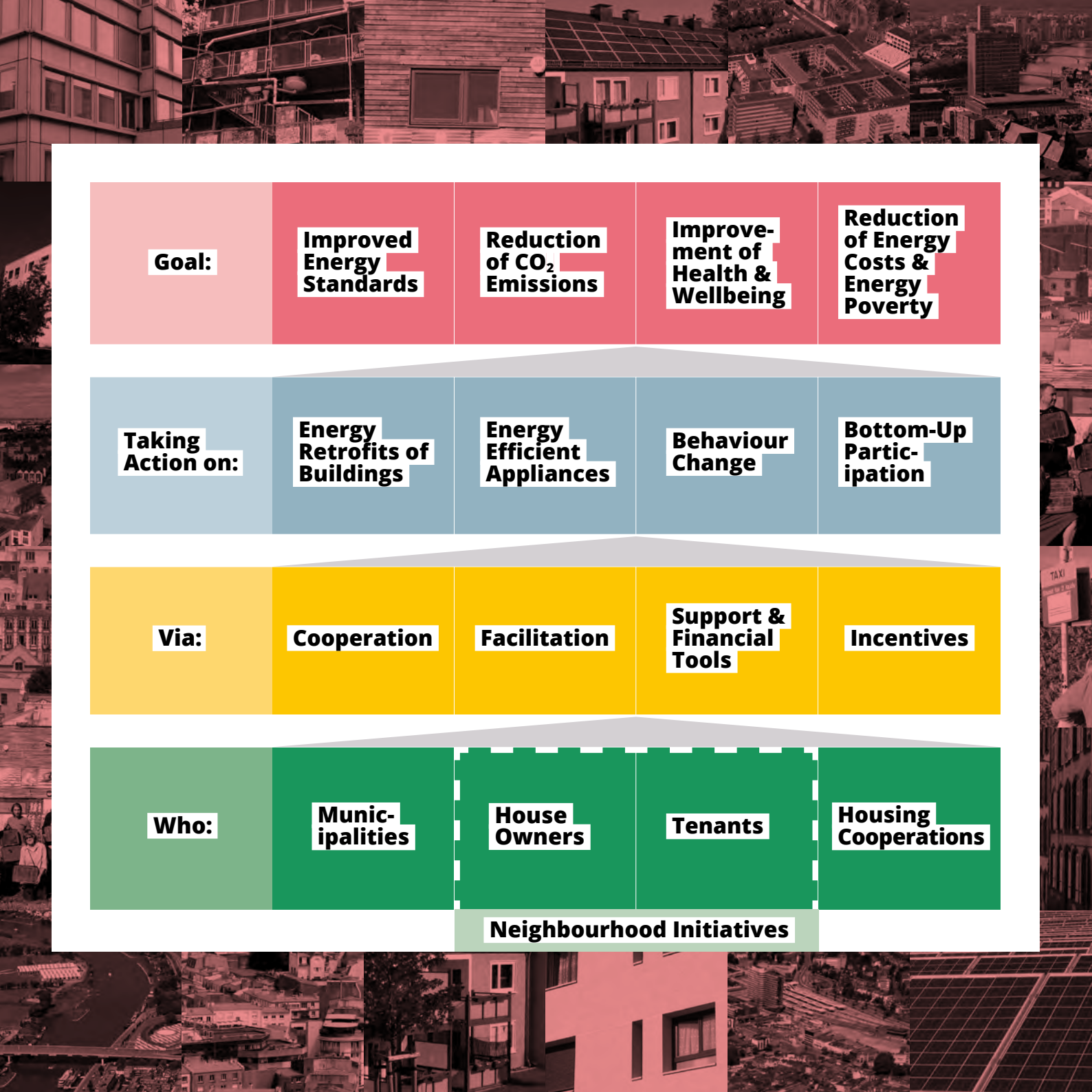
The Interreg NWE funded project "Climate Active Neighbourhoods" aimed to increase the capacity of municipalities to implement their climate action strategies more effectively using a neighbourhood approach. It aimed at bottom-up participation addressing energy consumption paradigms on a neighbourhood level, with a special focus on deprived areas in need of energy retrofits. It empowered residents within the neighbourhoods to take measures on climate action. Strategic incentives for energy retrofits, increasing energy efficiency and behaviour change have been offered. This approach ensured coherence between bottom-up activities and city-wide strategies.

The CAN consortium was composed of a variety of stakeholders: cities – Arnhem (NL), Brest (FR), Essen (DE), Hastings (UK), Liège (BE), Plymouth (UK), Worms (DE) – a European city network (Climate Alliance), energy agencies (Energieagentur Rheinland-Pfalz and Liège-Energie), a social housing association (Optivo), a non-profit (Energise Sussex Coast) and a public authority responsible for urban development and renovations (EPAMSA). This multi-stakeholder approach ensured that the project adopted a broad vision of the issues at stake and the solutions needed.

In the frame of the CAN project, three main approaches have been used by the various partners to empower neighbourhoods. The **grassroots approach** focused on supporting local initiatives whether financially, strategically or administratively in order help them deepen their activities or increase their outreach. The **face-to-face approach** consisted in personalised interviews with residents of the neighbourhood, whether through home visits or centralised energy advice. And finally, **the multiplicator approach** involved training local residents with potential to further spread their knowledge or skills, hence increasing the outreach. These approaches are complementary and can be adapted to each municipality's situation.

CAN Quick Facts

- Duration February 2016 to April 2020
- 10 project partners from 5 countries
- € 7.8 million total project budget
- € 4.7 million funded via the European Regional Development Fund
- Total results in numbers: 1,100 households with improved energy classification with 1,400 t CO_2 eq emission reduction per year.


Goal:
Improved Energy Standards
Reduction of CO_2 Emissions
Improve-ment of Health & Wellbeing
Reduction of Energy Costs & Energy Poverty
Taking Action on:
Energy Retrofits of Buildings
Energy Efficient Appliances
Behaviour Change
Bottom-Up Partic-ipation
Via:
Cooperation
Facilitation
Support & Financial Tools
Incentives
Who:
Munic-ipalities
House Owners
Tenants
Housing Cooperations
Neighbourhood Initiatives

Partner Information

Climate Alliance / Germany
Lead Partner
Svenja Enke
s.enke@climatealliance.org
www.climatealliance.org

Optivo / United Kingdom
Diana Lock
diana.lock@optivo.org.uk
www.optivo.org.uk

Hastings Borough Council / United Kingdom
Matthew China
mchina@hastings.gov.uk
www.hastings.gov.uk

Energise Sussex Coast / United Kingdom
Richard Watson
richard@energisesussexcoast.co.uk
www.energisesussexcoast.co.uk/

City of Arnhem / Netherlands
Hans van Ammers
hans.van.ammers@arnhem.nl
www.arnhem.nl

Brest Métropole / France
Gladys Grelaud
gladys.grelaud@brest-metropole.fr
www.brest.fr

Brest Ener'gence / France
Gladys Douilly
gladys.douilly@energence.net
www.energence.net

Energieagentur Rheinland-Pfalz / Germany
Mathias Orth-Heinz
mathias.orth-heinz@energieagentur.rlp.de
www.energieagentur.rlp.de

City of Essen / Germany
Kai Lipsius
Kai.Lipsius@umweltamt.essen.de
www.essen.de

Liège-Energie / Belgium
Gün Gedik
gun.gedik@liege-energie.com
www.liegeenergie.be

City of Liège / Belgium
Marc Schlitz
marc.schlitz@liege.be
www.liege.be

Plymouth City Council / United Kingdom
Paul Elliott
paul.elliott@plymouth.gov.uk
www.plymouth.gov.uk

Établissement Public d'Aménagement du Mantois Seine-Aval (EPAMSA)
France
Mélisande Bourgeois
m.bourgeois@epamsa.fr
www.epamsa.fr

City of Worms / Germany
Katharina Reinholz
katharina.reinholz@worms.de
www.worms.de

Infrastruktur & Umwelt / Germany
Project Support
Dr. Birgit Haupter
birgit.haupter@iu-info.de
www.iu-info.de

Interreg North-West Europe
Climate Active Neighbourhoods